Bio/Techno/Homo: a critical history of the human in Anglo-American science fiction

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Abstract

Science fiction ('SF') is often understood as a literature of radical possibilities—but to what extent do SF writers break the mould of humanist thought that has informed much of the western literary and cultural tradition? In this thesis, I will examine the concept of the 'human' as it has been incorporated into works of Anglo-American SF from the nineteenth century to the 1970s. By 'human', I mean the diverse sets of beliefs, ideas, and qualities attached, consciously or unconsciously, to the terms 'human' and 'humanity' in these texts. More specifically, I will examine the diverse ways that SF writers have narrativised the human in relation to technology and the natural world. As has been argued by a number of prominent critics, including Donna Haraway, Rosi Braidotti, Cary Wolfe, and Jacques Derrida, attitudes and relationships towards technological systems and material nature have been fundamental in determining the nature and meaning of the 'human' in western culture. These critics form part of the field of posthumanism, a branch of critical studies which has been centrally concerned with unearthing, investigating, and challenging what precisely is meant by the terms 'human' and 'humanity'.

Deploying a model of posthumanism as a hermeneutical principle for deconstructing the human figure in literary SF, I will stage the argument that, despite the radical ontological and epistemological possibilities generated by SF's speculative framework, SF texts have been reluctant to embrace models of subjectivity and embodiment that move beyond the narrow humanist tenets of scientific rationalism, biological and material transcendence, teleological progressivism, and instrumentalist views of nature. Through an analysis of a range of human 'archetypes' found throughout the history of the genre, I will argue that SF has instead consistently deployed a liminal conception of the human that is ambiguously situated between 'assimilative' humanist and 'transformative' posthumanist conceptions of the human and nonhuman subject.

Acknowledgments

During a class I once took on the topic of 'Thesis Completion and Submission', the instructor advised us that the acknowledgments section of a thesis should be kept as brief as possible. 'No one', she told us, 'wants to read as you thank your parents, or your housemates, or your spouse, or your cat for getting you through the Ph.D.' This struck me as a very begrudging attitude—after all, the acknowledgments section is perhaps the only part of the whole thesis that will not be subject to endless scrutiny and correction. Accordingly, I have followed the only sensible course and utterly disregarded this advice here.

I would first like to acknowledge the support of my supervisor, Prof. Emer Nolan. From her first act of supervision—a research essay in the final year of my undergraduate degree in 2011—Emer's advice, encouragement and guidance have been instrumental in helping me to improve as a scholar. Emer's careful readings of my chapters were the decisive factor in transforming a collection of scattered insights into a coherent argument, while her thoughtful supervision has helped me profoundly in my efforts to become a more effective thinker and writer. Of all the influences on my growth as a scholar during the course of my postgraduate studies, it is Emer who has had by far the most enriching impact—in return, I can offer only my heartfelt thanks and appreciation.

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Greg, Cait, Brenda, Jack, Kira, and all the Dans. Misery loves company, as they say, and the various academic, financial, and personal pressures of doing postgraduate research can at times make a person fairly miserable indeed. At such times, it is helpful to be able to look to a group of friends and peers and see that, if nothing else, they seem to be at least as miserable as yourself, and for much the same reasons. The comfort gained from this admittedly grim thought is not trivial: Ph.D. life takes no prisoners, as anyone who has undertaken one will know, and without a sympathetic group of fellow travellers the road to completion, I am sure, would have proven significantly more rocky. So my thanks to you guys.

Most importantly, I would like to thank my family and friends for their unfaltering support over the last few years: my mother Betty and father Eugene—who must at this point be despairing of ever seeing their youngest son finally leave university—brothers Patrick and Anthony and sister Áine, and my friends Virginia, Stefan, Eoin and Fiona. Each of these will know what their encouragement, patience, and endless supply of tea over the last few years have meant, and will surely appreciate, to an even greater extent than myself, the satisfaction of never having to hear the words 'Ph.D.', 'thesis', or 'Only X months left to go' ever again. Humble as a dedication in a thesis of this kind is, it is to them, with love, that the dedication goes.

He saw this one pursue a man and catch
him up in one of its steely tentacles

'Beyond the common range of men': H.G. Wells, the OncoMouse^{TM}, and the human in Anglo-American SF

H.G. Wells and the OncoMouse^{TM}

> With infinite complacency men went to and fro over this globe about their little affairs, serene in their assurance of their empire over matter. It is possible that the infusoria under the microscope do the same.[1]

In the early 1980s, researchers at Harvard Medical School produced a new kind of animal in their laboratories: the 'oncomouse'. Named from the Greek word *onco*, meaning 'mass' or 'tumour', oncomice, or 'Harvard mice', were designed to be particularly prone to the development of cancerous tumours, thereby cutting the time spent prompting tumour growth in lab mice by medical scientists involved in cancer research.[2] In 1988, following the success of its researchers, Harvard University then took the controversial step of issuing patents on their 'invention', the first three of which were licensed to Dupont, who in turn sublicensed them to various corporations. This move—the copyright of a living animal—was unprecedented at the time, but was subsequently repeated, not without controversy, in other parts of the world.[3]

The patent transformed the oncomouse, already a uniquely unnatural being, into the OncoMouse^{TM}, a privately owned and legally protected commodity. The use of animals as commodities, or the alteration of animal bodies in the service of human needs, can hardly be said to be new concepts—yet the case of the OncoMouse^{TM} is, I argue, of particular

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[1] H.G. Wells, *The War of the Worlds* [henceforth *WW*], 1898, Everyman, 1998, p. 5

[2] Much of this information on the oncomouse was derived from Douglas Hanahan et al, 'The origins of oncomice: a history of the first transgenic mice genetically engineered to develop cancer', *Genes and Development*, vol. 21, no. 18, 2007, pp. 2258-2270, web, Cold Spring Harbor Laboratory Press, genesdev.cshlp.org/content/21/18/2258.full, accessed March 2017

[3] 'Bioethics and Patent Law: The Case of the Oncomouse', *WIPO Magazine*, vol. 3, 2006, pp. 16-17, web, World Intellectual Property Organization (WIPO), www.wipo.int/wipo_magazine/en/2006/03/article_0006.html, accessed March 2017

significance. The OncoMouse[TM] was not simply bred but *produced*: an artificial species formed, *ex nihilo*, and on a genetic level, in a remarkably short period of time. Like its genomic counterparts, including Dolly the Sheep, the GloFish, the 'spider goat', featherless chickens, and so on, the OncoMouse[TM] registers a startling turning point in the exercise of human dominion over the natural world. Yet I begin with the OncoMouse[TM] not only because of the dubious honour it holds in being one of the first mass-market GM animals, but also because of the attention it has attracted in the field of posthumanism, where it has been interpreted in two distinct and opposing ways: namely, as a key to overturning the asymmetrical binary of human/non-human power relations intrinsic to classical humanist thought, *and* as an urgent reminder of the need to recuperate some 'essential' human ontology in the face of radically invasive technological possibilities. As I will discuss in more detail later in this introduction, these opposing stances also represent two of the key positions that have been adopted in the depiction of the human in SF literature.

Representing the former position, Donna Haraway has argued that, 'Symbolically and materially, the OncoMouse[TM] is where the categories of nature and culture implode for members of technoscientific cultures. … [It is] paradigmatic of nature enterprised up'.[4] For Haraway, the OncoMouse[TM] occupies a hazy liminal space between technology and nature, one that confounds any straightforward binary interpretations of these terms. She approaches the creature with cautious optimism: the interpenetration of human culture and non-human nature encapsulated in the OncoMouse[TM] offers not merely a warning against the increasing human manipulation of non-human nature, but also a potentially useful way of transcending the restrictive dualisms that have historically dominated western thought. For Haraway, the OncoMouse[TM] is a being 'whose scene of evolution is the laboratory', and which thereby transgresses the boundaries of nature and culture in useful ways for those seeking to challenge such divisions.[5] The OncoMouse[TM] is a liminal being whose ultimate effect is 'the pollution of natural kinds'—of 'natural' and distinct categories such as 'culture' and 'nature', or 'human'

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[4] Donna Haraway, 'Race: Universal Donors in a Vampire Culture. It's all in the family: Biological Kinship Categories' [henceforth 'Race'], *The Haraway Reader*, Routledge, 2004, pp. 273, 275

[5] Haraway, 'Race', p. 273

and 'animal'.[6] Rosi Braidotti echoes Haraway's enthusiasm in this regard: like Dolly the Sheep, Braidotti argues, the OncoMouse™ is 'the never dead that pollutes the natural order simply by being manufactured and not born'.[7] It thus offers a material instance of posthuman possibility, albeit one that must be understood in the context of the exploitative capitalist relations that gave birth to it.

In opposition to this nuanced take on the OncoMouse™ as a potential instance of transgressive revolt against the totalising nature of classical humanist discourse, social theorist Frederic Vandenberghe views it as one 'of the most monstrous creatures … fabricated and patented … for the sake of profit'.[8] It is, he argues, part of a horrifying drive in contemporary capitalism that seeks to 'invade … life itself to modify and commodify it'.[9] For Vandenberghe, posthumanism itself represents nothing less than an active menace to human life, threatening to subsume humanity within a rubric of genetic and technological systems that will eventually evacuate the very notion of the 'human' of any semblance of spirituality or sacredness. In the face of such 'monstrous' posthuman possibilities, Vandenberghe outlines the need to recapture some sense of the inviolable spirit of human nature—what Francis Fukuyama terms 'Factor X', an ambiguous quality, 'universally possessed' by humans, that comprises 'the human essence, the most basic meaning of what it is to be human'.[10] His proposed means to achieve this—the development of a new kind of 'gen-ethics' that 'conventionally and consensually defines the nature of the human and thereby sets normative limits to the human freedom to technologically alter human nature and change it beyond recognition'—is avowedly humanist.[11] It therefore runs counter to the trend among writers like Haraway, Braidotti and other posthumanist

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[6] Donna Haraway, *Modest_Witness@Second_Millenium.FemaleMan©_Meets_Onco Mouse™: feminism and technoscience*, Routledge, 1997, pp. 79-80

[7] Rosi Braidotti, *The Posthuman* [henceforth *TP*], Polity Press, 2013, p. 75

[8] Frederic Vandenberghe, 'Posthumanism, or the cultural logic of global neo-capitalism', *What's Critical About Critical Realism? Essays in reconstructive social theory*, Routledge, 2014, pp. 294

[9] Vandenberghe, p. 293

[10] Francis Fukuyama, *Our Posthuman Future: consequences of the biotechnology revolution*, Farrar, Straus and Giroux, 2002, p. 150

[11] Vandenberghe, p. 302

thinkers who, as we will see, seek to develop models of subjectivity that avoid fetishising certain qualities as universally or essentially 'human'.

These radically opposed interpretations of the OncoMouse[TM] underline its status as a liminal being, its very existence distorting established boundaries between nature and technology. Unquestionably a living nonhuman animal, and so part of the realm of what is traditionally considered 'nature', the OncoMouse[TM] is also a product of human culture, and inseparable from it. Even Vandenberghe's insistence on the need to recapture a viable form of 'human nature' in the wake of the OncoMouse[TM]—to restore a sense of what Elaine L. Graham has called 'ontological hygiene' to the concept of human nature—points to the socially constructed nature of both 'human' and 'non-human'.[12] The OncoMouse's very reason, not merely for living, but for being *brought to life* is to serve human ends. Yet, as Vandenberghe insists, such a creation can easily be turned against its master since, as a result of the genetic experimentation that led to the OncoMouse[TM], not only non-human animal but also human genomes are now susceptible to technological and economic exploitation and manipulation. For this reason, the creation of the OncoMouse[TM] represents a crucial moment in the history of thought regarding not only 'nature' but also the 'human'—the moment at which it becomes impossible to ignore the collapsing distinctions between 'human' and 'non-human', 'culture' and 'nature'. To borrow Braidotti's and Haraway's term, in the wake of the OncoMouse[TM] and its descendants, human nature itself has become irreversibly 'polluted'.

What is the connection between the OncoMouse[TM] and *The War of the Worlds* (1898), H.G. Wells's classic SF novel about the destruction of England by Martians? As we will see, both can be understood as key sites for investigating the nature of the 'human'. In different ways, Wells's novel and the OncoMouse[TM] reveal the extent to which our ideas about what it is to be—or not to be—human are informed by a complex web of historical beliefs, ideas, and attitudes centred on the categories of subjectivity, embodiment, technology, and nature. Over the course of this introduction, I will examine each of these terms in more detail. For now, however, I want to begin with two points that will be of crucial importance in understanding

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[12] Elaine Graham, *Representations of the Post/Human: monsters, aliens, and others in popular culture*, Manchester University Press, 2002, p. 13

the significance of the human in the SF tradition: firstly, *all* SF is posthuman, or, more accurately, all SF is engaged with recognisably posthumanist concerns; and secondly, and notwithstanding the first point, the classical figure of western humanism is, within SF texts, more difficult to escape than may be assumed.

With all this in mind, let us begin with a glance at Wells's *The War of the Worlds*. Wells's early scientific romances, beginning with *The Time Machine* in 1895, are widely regarded as a decisive innovation in the evolution of SF. Of these, perhaps the best known is *The War of the Worlds*, which depicts the sudden arrival of a Martian invasion force into the quiet English countryside and the havoc that is wreaked as, armed with superior technology, the Martians proceed to harvest humans for food. *The War of the Worlds* is most often read as a reverse colonial narrative that brings the ill effects of empire-building to bear on the centre of nineteenth-century imperialism. John Rieder, for example, notes the 'satirical reversal of hierarchies' used to confront Wells's British audience with the barbarism of colonial practice undertaken in its name.[13] By subjecting England to the tyranny and brutality of the alien Martians, Rieder argues, Wells projects his readers into the position of the helpless colonial natives, swept away by the superior technology of the invading force. Likewise, David Seed refers to *The War of the Worlds* as 'the supreme example of invasion fiction', arguing that Wells's novel 'skillfully reverses the normal opposition within imperial fiction between civilization and otherness. Now civilization, specifically British imperial civilization, is under attack'.[14] Given its candid, and at times remarkably explicit, commentary on the brutality inherent in colonial practices and the objective 'othering' of human subjects, this is a persuasive interpretation of the novel, particularly given Wells's direct invocation of the mass slaughter of Tasmanian Aborigines by British explorers early in the novel. As he suggests, the European dream of nineteenth-century utopian progress, and the technological might of imperial Britain,

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[13] John Rieder, *Colonialism and the Emergence of Science Fiction*, Wesleyan University Press, 2008, p. 4
[14] David Seed, 'The Course of Empire: a survey of the imperial theme in early Anglophone science fiction', *Science Fiction Studies*, vol. 37, no. 2, 2010, p. 233, 234

can only have appeared as nightmares to the Tasmanians 'entirely swept out of existence' by it.[15]

The reading that I want to propose here, however, begins from a different premise: I would suggest that we can usefully regard the novel as a commentary on ideas of human nature in nineteenth-century thought. As Michael R. Page argues, the novel evinces an anti-progressive sentiment that strives to alter 'the general mood of late Victorian thought … which complacently imagined man (particularly Western man) at the top of the evolutionary ladder'.[16] In attempting to account for the ruthless treatment of the English population by the Martians, Wells invokes not only the appalling experience of the Tasmanians, but also the inter-species 'destruction' which European civilisation 'wrought' on 'the vanished dodo and bison' as evidence of the violence inherent in the evolutionary process.[17] Accordingly, in the novel, humanity itself becomes just another species vulnerable to enslavement or elimination: with 'the arrival of the Martians', notes Peter Kemp, 'man is pushed back amongst his fellow terrestrials', across the 'dividing-line' that separates '*Homo sapiens*' from 'the rest of earth-life'.[18] Given that, as Kemp suggests, Wells's 'mission in life was to make man aware of his place in nature', the novel's depiction of the collapse of English society and the brief succession of a technologically superior race—one for whom humans signify little more than a conveniently abundant food source—rewrites the traditional division between culture and nature, with humanity firmly on the side of nature.[19]

Hence the narrator's speculations regarding the Martian attack can be taken as reflecting Wells's own pessimistic view of humanity's place in the world: humans, he writes, must be for the Martians 'at least as alien and lowly as are the lemurs and monkeys to us'.[20] Moreover, given their own barbaric treatment of the weak and defenceless—the 'dodo and

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[15] Wells, *WW*, p. 7

[16] Michael Page, *The Literary Imagination from Erasmus Darwin to H.G. Wells: science, evolution, and ecology*, Ashgate Publishing Company, 2012, p. 175

[17] Wells, *WW*, pp. 6-7

[18] Peter Kemp, *H.G. Wells and the Culminating Ape*, Macmillan, 1982, p. 22, emphasis in original

[19] Kemp, 23

[20] Wells, *WW*, p. 6

bison' as much as the slaughtered Tasmanians—the British victims of the Martians are poorly placed to offer a moral critique of their usurpers. Wells's earlier novel, *The Island of Doctor Moreau* (1896), emphasises this point to an even greater extent: focussing on the eponymous scientist in his bloody attempts to transform the animals of his island into human beings, the novel stresses the extent to which, beneath the veneer of civilisation, humanity remains essentially bestial. The long-standing asymmetries dividing western humanity from the rest of the biological world—what Haraway calls the 'comfortable old hierarchical dominations' that characterise western thought—thus appear in Wells's novel as tenuous partitions at best, holding good only so long as humanity retains its place as top species in the biological order.[21]

We can see, then, that there are certain key similarities between Wells's novel and the OncoMouse[TM], despite the ninety-year lapse between their appearances. Both belong squarely to the realm of SF: Wells's novel as a foundational text in the literary genre, and the OncoMouse[TM] as an example of science fiction become science fact, a demonstration of the extent to which ideas previously regarded as fantastical have become actualised in the contemporary world. Both, too, present a soritean challenge to established understandings of the human and non-human, posing in different ways the question of where exactly along the continuum between these realms the dividing line should be drawn. And both must be viewed in the context of a complex interplay between technology and nature, one which erodes any easy or absolute distinctions between the natural and the artificial by revealing the extent to which these categories intersect within one another. Both novel and mouse thus invite us, in a startling manner, to consider what it means to be human—to examine where the boundary should be drawn between human and non-human when, on the one hand, the traditionally distinct realms of 'human' and 'nature' become difficult or impossible to separate, and, on the other, even the codes governing the biological can readily be penetrated, manipulated and transformed through technological means.

Yet this similarity also masks an important distinction. Wells's novel offers an imaginative glimpse of a dystopian posthuman future—yet this vision is speedily withdrawn

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[21] Donna Haraway, 'A Manifesto for Cyborgs: science, technology, and socialist feminism in the 1980s' [henceforth 'Manifesto'], 1984, *The Haraway Reader*, Routledge, 2004, p. 20

and 'corrected' as English society re-establishes itself in the wake of the invasion. Throughout Wells's works, from the early scientific romances up to the later utopias such as *Men Like Gods* (1923) or *The Shape of Things to Come* (1933), the figure of the human remains central, and Wells cannot be said to undertake any serious or sustained examination of non-human subjectivity, or of non-human nature more generally, in these works. Hence, whatever criticisms they may advance of humanity's dominion over the rest of nature, the central concerns of Wells's scientific romances remain firmly centred on humanity and human society. The latent posthumanist potential of *The War of the Worlds* is thus limited by Wells's investment in what Braidotti calls '*bios*' (a term derived from Giorgio Agamben): 'the portion of life—both organic and discursive—that has traditionally been reserved for *anthropos*', that is, the figure of the human.[22] In other words, even as Wells launches his savage critique of the great nineteenth-century humanist enterprises—the hypocrisy of European imperialism, the dangers of blind scientific advancement, and (in other works) the brutal realities of capitalist industrialism—and in this sense gestures towards a potentially radical posthumanist outlook, the human in his works remains always ready to return, as in *The War of the Worlds*, to its position at the centre of life and discourse.

By contrast, the living organism created in the Harvard laboratory represents a step towards a different kind of posthuman future that cannot so easily be undone. Indeed, the OncoMouse[TM] testifies to the impossibility of such a return, since its very being, as highlighted above, is generated by the technological systems of which it is inescapably part. More than this, the OncoMouse[TM] indicates the extent to which the erasure of the classic dichotomy between human and non-human nature, far from leading (as many posthumanist thinkers suggest) to a more profound understanding of and sympathy with the natural world, may instead lead to its intensified colonisation, as nature becomes subject to the all-encompassing purview of a *homo technic* that no longer sees anything—natural or otherwise—as being outside its sphere of influence and control. Where Wells's novel demands a revision of the potential consequences of unthinking technological advancement through its haunting images of human slaughter by

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[22] Braidotti, *TP*, p. 60

the superior, coldly indifferent Martians, the OncoMouse^{TM} confronts us with one such consequence in the here-and-now: an organism whose very genetic ontology is a result of the unrestrained western impulse for knowledge and progress. Hence, while it is clearly insufficient to adopt, as Vandenberghe does, a reactionary position on the human, insisting on a return to some 'essential' yet clearly constructed human 'condition', it is equally clear that a posthumanist framework cannot be embraced uncritically as a straightforward antidote to the failings of humanism without further investigating what such a framework entails.

To return to my two key assertions regarding SF and posthumanism, we can now see that Wells's novel, through its deliberate destabilisation of the categories of 'human' and 'nature', points to the emergence of what we now recognise as a posthumanist standpoint—yet its preoccupation with *bios*, with re-establishing specifically *human* forms of life, means that, at the close of the novel, the human remains the central figure of concern. The OncoMouse^{TM}, meanwhile, for all of the radical posthumanist energy with which Haraway invests this subversive creature, also symbolises the point at which western colonisation and exploitation of nature reached the very level of DNA itself. As may be seen in both cases, it is clear that, for all the transformative or radical potential that may be generated by distorting the boundaries between 'human' and 'non-human', such an act can all too easily lead to the subjugation of the non-human in the service of a renewed and intensified humanism.

The pressing question that underlies our responses to both Wells's novel and the OncoMouse^{TM} is: what does it mean to be considered 'human' or 'nonhuman'? This thesis will take this question as its central focus, examining the concept of the human as it has become a matter of intense thematic concern in works of Anglo-American SF from the nineteenth century to the 1970s. As will be seen, the human that emerges from these works is, like the OncoMouse^{TM}, a liminal being: it is not quite the eternally fixed, transcendent, or rational 'Man' of the classical humanist tradition—yet neither is it fully the 'cyborg', the 'autopoietic' system, or the 'embodied, embedded' symbiotic subject of posthumanist thought. (I will outline these ideas in more detail in the next section.) Rather, the human in these works emerges most clearly as a discursive site on which a whole range of anxieties, beliefs and concerns centred on the nature

of subjectivity and embodiment—both humanist and posthumanist—come into play. The human of the SF tradition is a fluid category, capable of transforming, like the shapeshifting natives of the red planet in Ray Bradbury's *The Martian Chronicles* (1950), to reflect the assumptions, beliefs, fears, and ambitions of a diverse range of authors and contexts. To insist that SF is fundamentally humanist or posthumanist in its approach towards questions of subjectivity, agency, rationality, embodiment, and any other of a host of traditional or 'essential' human characteristics is, I will argue, a null point. Rather, it is more appropriate and useful to view the category of the human in SF, as in Wells's novel, as invoking a range of humanist and posthumanist positions. Taken together, these positions comprise a complex and ever-changing image of the place and significance of the human and the non-human in modern thought.

The examination will thus focus on a number of specific and related questions: What role has technology played in defining what it means to be—or not to be—human in these SF texts? How do these writers conceive of the relationship between humanity and the rest of non-human nature? Is the human construed by these writers as something separate or distinct from the technological systems and natural worlds that surround it—as something that transcends or rises above the material world? Or are these systems and worlds viewed as vital to understanding the human, in ways not commonly recognised or acknowledged? And, finally, how can we use these texts to re-examine our ethical position towards those things—other living beings, or the wider environment—that, like the OncoMouse™, have suffered from ingrained and unexamined attitudes about the meaning, nature, and significance of the very ideas of 'human' and 'non-human'?

Through close engagement with a number of key authors from the history of the genre, I will trace how SF has negotiated the question of the human, drawing and redrawing the discursive and ideological boundaries that separate it from the non-human world. Following a brief examination of two major nineteenth-century SF writers, Mary Shelley and Jules Verne, the discussion will begin in earnest with Jack London's *The Iron Heel* (1907) and Arthur Conan Doyle's *The Lost World* (1912). The discussion of these works will centre on humanity's 'animal' nature, and the ways in which evolution is deployed by both of these authors as a way to salvage a humanist conception of western civilisation as the 'end of evolution'—contiguous

with, but not identical to, 'lesser' or more 'primitive' forms of the human. In Aldous Huxley's *Brave New World* (1932) and E.E. 'Doc' Smith's *Skylark* series (1928-34), the discussion will focus on technology and rationalism. We will see how Huxley's novel, so often interpreted as a work of merely pessimistic technophobia, and therefore unlikely to be of compelling interest to posthumanist thinkers, in fact gestures towards a relatively constructive form of humanism—one which, while it insists on the existence of a human 'essence' that must be preserved from the influence of decadent technologies, also attempts to move past Cartesian dualism to recognise humanity's fundamental materiality. This contrasts with the imperialist technocratic stance of Smith's space operatic works, in which 'human' becomes a byword for material and biological transcendence. In Isaac Asimov's *Foundation* (1942-49) and Arthur C. Clarke's *The City and the Stars* (1956), the steady growth of mass society and bureaucratic regimes leads to a greater focus in SF works on mass populations, rather than single individuals. The concerns of mid-century works centre on the continued viability of human society in an age of atomic weapons and mass biopolitical regimes, and we will see how Asimov and Clarke offer contrasting conceptualisations of the future of the human species in this new context. And in J.G. Ballard's *The Crystal World* (1966) and Ursula K. Le Guin's *The Dispossessed* (1974), we will turn to questions of utopia and western humanity's relationship to the natural world. Whereas Ballard's novel demonstrates a submission to the forces of technological rationalism that threaten to swallow nature, stressing instead the utopian yet insular qualities associated with transcendent individualism, Le Guin insists on the need for a more holistic relationship with the nonhuman world, constructing an embedded and anti-universalist form of human subjectivity that comes closest of all these works to a truly posthumanist subjectivity.

The thesis can therefore be thought of as a critical history of the human as it has been configured in the SF tradition. As the above examples of both colonial brutality in Wells's novel and ecological exploitation in the OncoMouse™ demonstrate, these are not trivial considerations. Ideas about the nature and meaning of the human have formed the basis for everything from systems of morality to political and economic praxis, from habits of eating to the drafting of environmental legislation, and from religious discourse to cultural and aesthetic production. Above all, our understanding of what it is to be human has been crucial in

determining our cultural and ethical orientation towards beings perceived as being different from ourselves, and towards natural entities whose exploitation for human ends we have taken for granted. Indeed, our relationship with the natural world may accurately be said to have reached a point of crisis in recent years. There is no need here to rehearse the familiar and diverse forms of human mistreatment of the natural world: instead I follow Derrida in simply noting that our relationship with the non-human world has, in recent years, undergone an 'unprecedented transformation', almost entirely for the worse.[23] At the same time, the ongoing refugee crisis in Europe and the Middle East, and the recent resurfacing of undisguised racist sentiment within western political discourse, offer chilling displays of exactly where the limits of western humanist and ethical consideration have often been drawn. For this reason, an examination of the fundamental concept underpinning our notions of progress, history, development, and society, and which informs our understanding of and orientation towards the natural world and other humans, is an urgent priority. In order to account for both the mass conscription of the natural world 'in the service of a certain being and the so-called human well-being of man', as well as the collapse of the global 'Family of Man' (to borrow Barthes' term) in a wave of racism and economic and cultural isolationism, it is necessary to more fully understand the ideas, beliefs, and notions that have historically surrounded this entity called the 'human'.[24]

The rest of this introduction will be concerned with establishing the framework within which these questions will be explored in this thesis. I will begin with a discussion of posthumanism, outlining the ways in which a variety of thinkers in the field have conceptualised the figure of the human, before moving on to more comprehensive definitions of what I mean by 'technology' and 'nature'. I will then go on to explain in more detail my particular interest in SF, and my conception of SF as a posthumanist mode of literature. Finally, I will provide a more detailed overview of the structure of the thesis, describing the model of

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[23] Jacques Derrida, 'The Animal that Therefore I Am (More to Follow)', translated by David Wills, *Critical Enquiry*, vol. 28, no. 1, 2002, pp. 392-393

[24] Derrida, p. 394; see also Roland Barthes, 'The Great Family of Man', *Mythologies*, 1957, translated by Jonathan Cape, 1972, Noonday Press, 1991, pp. 100-102

posthumanism that will inform my readings of SF texts, and outlining the various human 'archetypes' that will be examined in the four chapters that make up the rest of this study.

Posthumanism, nature, and technology

Posthumanism has become a key site of critical enquiry in recent years: Sherryl Vint, for example, lists posthumanism alongside biopower and biopolitics as one of the 'terms of critical currency for the late twentieth and early twenty-first centuries'.[25] In a recent volume, Bruce Clarke and Manuela Rossini offer a summary of some key trends highlighting the emergence of posthumanism as a vibrant academic field:

> The past decade has witnessed growing numbers of seminars and conferences dedicated to topics such as "The Nonhuman," "Radical Methodologies for the Posthumanities," and "Approaching Posthumanism and the Posthuman." Special issues on posthumanist topics have appeared in journals such as *Biography*, *Cultural Critique*, the *European Journal of English Studies*, *Postmedieval*, *Subjectivity*, and *Subject Matters*. Moreover, curricula in academic departments across the world testify to the development of posthumanism into a substantial and vibrant topic crossing many fields.[26]

Although it cannot be easily defined in any succinct or generally accepted way, a central tenet of posthumanist thought is that there is no universal human essence: human beings are fundamentally material beings, embedded within and shaped by material processes and practices that preclude the possibility of a universal or transcendent human nature. Our conception of the human is shaped by our understanding of the natural world and of the technology deployed to subdue or control objects and forces in nature. I will outline these ideas in more detail here, and will also draw on the works of Heidegger in order to develop a theoretical framework for conceptualising the relationship between nature and technology, and the ways that they intersect both with each other and with the human.

In 1984 (a prophetic year for SF readers), Donna Haraway published 'A Manifesto for Cyborgs'. In this influential essay, Haraway argues that the cyborg should be thought of as the characteristic being of the late twentieth century, a being capable of transcending the

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[25] Sherryl Vint, 'Animal Studies in an Era of Biopower', *Science Fiction Studies*, vol. 37, no. 3, 2010, p. 444
[26] Bruce Clarke and Manuela Rossini, 'Introduction', *The Cambridge Companion to Literature and the Posthuman*, edited by same, Cambridge University Press, 2017, p. viii

ontological limits that have traditionally dominated and demarcated western discourse. The boundaries separating the human, the animal, and the machine, Haraway argues, although never fully stable, have been entirely erased as a result of the rapid technological advancement of the late twentieth century. In their place, she calls instead for a kind of ontological freeplay, in which the machine penetrates the organic body and the animal 'speaks' from a position of moral equivalence with humanity—the latter now forced to recognise its various biological and technological embodiments as fundamental to its being. For Haraway, the cyborg encapsulates this state of being: it is 'a hybrid of machine and organism, a creature of social reality as well as a creature of fiction'.[27] Importantly, the cyborg is not a *synthesis* of the organic and the technological: synthesis implies unity, while the very point of Haraway's argument is precisely to get away from the need for unities, since these can so easily be changed into the urge 'to be autonomous, to be powerful, to be God'.[28] As Judith Halberstam and Ira Livingston put it, the aim in posthumanist thought is 'not to replace a stuck mindbody [*sic*] dualism with a heterogeneous monism, but to insist on the "someness" of every assemblage'—that is, on the partiality of identities which can never be comfortably resolved into either unity or duality.[29] In place of such totalising narratives, the emphasis instead moves to a partial and shifting conception of identity, 'without clear boundary, frayed, insubstantial'.[30] Haraway's cyborg is an example of such an identity: neither fully organic nor fully technological, it holds its disparate elements in tension, without allowing one to resolve into the other, and so offers 'a way out of the maze of dualisms in which we have explained our bodies and our tools to ourselves'.[31]

'A Manifesto for Cyborgs' encapsulates the kind of deconstructive and transgressive energy that has marked a certain strain of cultural theory, centred on the figure of the human, in recent years, summarised under the heading of posthumanism. The characteristics of the

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[27] Haraway, 'Manifesto', p. 7
[28] Haraway, 'Manifesto', p. 35
[29] Judith Halberstam and Ira Livingstone (eds), 'Introduction: Posthuman Bodies', *Posthuman Bodies*, Indiana University Press, 1995, p. 8
[30] Haraway, 'Manifesto', p. 35
[31] Haraway, 'Manifesto', p. 39

classical model of the human are described by Neil Badmington in his pioneering anthology, *Posthumanism* (2000), in which he offers a summary of the kind of thinking about human nature that, as he sees it, has dominated western discourse since the time of Descartes:

> There is an absolute difference between the human and the inhuman: only the former has the capacity for rational thought. Reason belongs solely to the human and, as such, serves to unite the human race. 'We' may have different types of bodies, but because reason is a property of the mind (which, for Descartes, is distinguishable from the body), deep down 'we' are all the same.[32]

Classical humanism, it is argued, appeals to a kind of universal and 'basic human essence' centred on the notion of reason, assumed to be inherent in all 'true' human subjects, who are in turn assumed to be all fundamentally the same (a notion evident in recent cultural discourses concerning our presumed arrival at 'post-race' and 'post-gender' societies).[33] The issue with such thinking, of course, is the manner in which it glosses over the necessary contingency of this understanding of human nature, transforming a specifically European set of beliefs into what Tony Davies calls 'the myth of essential and universal Man: essential, because humanity—human-ness—is the inseparable and central essence, the defining quality, of human beings; universal, because that essential humanity is shared by all human beings, of whatever time or place'.[34] It thus erases essential differences between different kinds of people, assuming that what is true for a certain kind of educated European subject will hold true for all.

Posthumanism attempts to decenter this model of the human subject by emphasising the dependence of this apparently universal, autonomous, self-contained human subject on forces and phenomena external to the subject itself. Badmington applies the term retrospectively to a wide array of classical and contemporary thinkers whose works support the kind of anthropological decentering characteristic of posthumanism. Foucault, for instance, in *The Order of Things* (1966), asserts that humanity 'is an invention of recent date', being 'constituted' by 'Western cultures' and arising alongside the 'human sciences' ostensibly developed to study it in the early nineteenth century.[35] Foucault destabilises the notion of a

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[32] Neil Badmington, 'Introduction', *Posthumanism*, Palgrave, 2000, p. 4
[33] Badmington, 'Introduction', p. 4
[34] Tony Davies, *Humanism*, Routledge, 1997, p. 24
[35] Michel Foucault, *The Order of Things: an archaeology of the human sciences* [henceforth

universal and autonomous human subject by revealing its historical and social origins—with any 'change in the fundamental arrangements of knowledge', he goes on, 'man would be erased, like a face drawn in sand at the edge of the sea'.[36] This, for Badmington, demonstrates a fundamentally posthumanist dynamic, one present also, he argues, in the writings of Foucault's contemporaries, such as Althusser, Baudrillard and Fanon (each of whom are included in the anthology), as well as earlier thinkers such as Marx and Freud. Badmington's definition of posthumanism thus encompasses not just the work of those like Haraway, whose explicit project has been to upset the accepted boundaries between 'human', 'animal', and 'machine', but all thinkers who have advocated, often implicitly, a critique of the classical European human subject.

In this way, Badmington takes a broad view of posthumanism: for him, *any* attack against the classical humanist model of the autonomous, rational subject, comprised of equal parts 'certainty, security, and mastery', can be considered posthumanist.[37] Such a broad view is not uncommon: Cary Wolfe, for example, describes posthumanism as 'nam[ing] a historical moment in which the decentering of the human by its imbrication in technical, medical, informatic, and economic networks is increasingly impossible to ignore'.[38] For Wolfe, as for Badmington, the posthumanist project is aimed at calling into question the 'ideals of human perfectibility, rationality, and agency' that have come to broadly define western humanity since the Enlightenment.[39] By elevating such traits to the status of 'universal human qualities', Wolfe argues, humanism has implicitly excluded those who do not exhibit them from full moral consideration, a fact that has been used to justify everything from factory farming to slavery.

It has also disguised the extent to which the human subject is equally determined by its biological and technological instantiations, factors which necessarily shape the ways in which individuals and societies interact with the material non-human world around them. If traditional

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OT], 1966, translated by Tavistock/Routledge, Routledge, 2002, p. 422, 400

[36] Foucault, *OT*, p. 422

[37] Neil Badmington, 'Theorizing Posthumanism', *Cultural Critique*, 53, 2003, p. 16

[38] Cary Wolfe, *What Is Posthumanism?* [henceforth *WIP*], University of Minnesota Press, 2010, p. xv

[39] Wolfe, *WIP*, p. xiii

humanism has emphasised a limited understanding of the human as a singular, coherent, and autonomous subject—the Cartesian and transcendent 'man who says "I"', as Derrida puts it, at the centre of narratives of history, theology, metaphysics, politics, language, nature, ethics, and so on [40] —then posthumanism is concerned with challenging these limitations by acknowledging the technological and biological roots of the human. This need not, as Wolfe argues, be viewed negatively: posthumanism does not simply advocate a misanthropic rejection of the human either as a textual fiction or as helplessly determined by external biological or technological forces (a position better described as anti-humanist). Rather, it is an acceptance of the need for more egalitarian understandings of subjectivity that make space for alternative kinds of beings not traditionally recognised as being of ethical or political value. The broad understanding of posthumanism adopted by Badmington and Wolfe in reality reflects a long-standing and deeply felt need by many thinkers, over many years, to question traditional western narratives of human reason and universalism.

Hence posthumanism, as Wolfe notes, 'comes both before and after humanism'—it emphasises 'the embodiment and embeddedness of the human being in not just its biological but also its technological world'.[41] One of the primary aims of Wolfe's posthumanist thought has been to deconstruct the boundaries drawn between human and other forms of non-human biological life, shifting the emphasis, as Braidotti conceptualises it, from *bios*—the sphere of human life—to '*zoe*', 'the dynamic, self-organizing structure of life itself' that includes both the human and non-human.[42] At the same time, it is clear from contemporary concerns regarding climate change, habitat destruction, the loss of landscapes, and so on, that the 'natural world' comprises more than simply other kinds of biological being. This recognition extends the terms 'nature' or 'natural world' to include various kinds of material but non-biological phenomena, from landscapes and oceans to weather patterns and the very atmosphere itself. As ecocritic Harold Fromm points out, there is no escaping the dependency of biological life on the material world, since 'steps taken to preserve the environment', and with it such physical

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[40] Derrida, p. 400
[41] Wolfe, *WIP*, p. xv
[42] Braidotti, *TP*, p. 60

phenomena as 'clean air', also work to preserve the essential grounds for 'biological existence' itself. [43] Indeed, such mass nonbiological trends offer perhaps the most dramatic demonstrations of Haraway's cyborg model, since, as Bruno Latour argues, phenomena such as the 'ozone hole story, global warming or deforestation' are highly difficult to conceptualise according to any traditional binary schema: 'Where are we to put these hybrids? Are they human? Human because they are our work. Are they natural? Natural because they are not our doing. Are they local or global? Both'.[44] In any case, the fundamental contingency of all biological being, including humanity, on material nature insists on an expansive understanding of posthumanism, in which the human is seen not simply as one biological being among many, but as part of and dependent on a natural-material world put at risk by the anthropocentrism of classical humanism.

This 'materialist turn' has come to be increasingly explored in recent philosophical discourse. One example can be found in Braidotti's 'vital materialism', a variation of Spinozist monism which rejects idealist or transcendent notions of 'human exceptionalism'—that is, of human subjectivity as somehow removed from or unaffected by the material world—in favour of an embedded subject that evolves in kinship with material forces and with other life-forms.[45] Such theories oppose the 'linguistic paradigm' of poststructuralist thought, as well as any other theoretical construct that does not take proper account of 'the concrete yet complex materiality of bodies immersed in social relations of power'.[46] As Pramod K. Nayar puts it, the human must be understood as a material as much as intellectual entity, enmeshed in localised processes of 'becoming, but a becoming-with other life forms'—that is, as an embedded and systemic component of a mutually constitutive material environment.[47] This model of the human—as

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[43] Harold Fromm, 'From Obsolescence to Transcendence', *The Ecocriticism Reader: landmarks in literary ecology* [henceforth *TER*], edited by Cheryll Glotfelty and Harold Fromm, The University of Georgia Press, 1996, p. 37

[44] Bruno Latour, *We Have Never Been Modern*, 1991, translated and published by Harvester Wheatsheaf, 1993, p. 50

[45] Braidotti, *TP*, p. 86

[46] Rosi Braidotti, 'Interview with Rosi Braidotti', *New Materialism: interviews and cartographies*, edited by Rick Dolphijn and Iris van der Tuin, Open Humanities Press, 2012, p. 21

[47] Pramod K. Nayar, *Posthumanism*, Polity Press, 2014, p. 47

existing in organic symbiosis with its material locality—wholly precludes the possibility of a transcendent, 'universal' human subject. Robert Pepperell perhaps expresses this position most straightforwardly: 'In the posthuman schema', he writes, 'it is a mistake to separate the thing that thinks and the thing that is thought about'—in other words, to separate mind from matter.[48] Nor is this a particularly new or original position: as John Bellamy Foster points out, materialism as a philosophical position originates in Ancient Greece with Epicurus, and crests in the nineteenth century with Darwin and Marx, the latter of whom insisted that the 'nature of individuals … depends on the material conditions determining their production'.[49] Much later, Lyotard, in his well-known essay, 'Can Thought Go On Without a Body?' (1988), remarks that the 'life of the mind' comprises a 'form of life that [is] spiritual because it [is] human, human because earthly—coming from the earth of the most living of living things. … With the disappearance of the earth, thought will have stopped'.[50] Vital materialism, and posthumanism more generally, thus takes this well-worn materialist position and imbues it with renewed ethical import derived from feminist and environmentalist discursive practice.

The terms 'nature' and 'natural world', then, must be understood as referring to both biological life *and* the natural-material world—categories which, it will be noted, include humanity itself. As Cheryll Glotfelty notes, whereas in traditional understanding '"the world" is synonymous with society', it is necessary, if we are to move to a more profound relationship with nature, to 'expand … the notion of "the world" to include the entire ecosphere', of which humanity is only part.[51] Correspondingly, the tension between materialism and transcendence within conceptions of the human subject comprises one of the major theoretical concerns of posthumanism. N. Katherine Hayles, for example, in her critical examination of the history of cybernetics, *How We Became Posthuman* (1999), criticises a trend in western thought which

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[48] Robert Pepperell, *The Posthuman Condition: consciousness beyond the brain*, 1995, Intellect Books, 2003, p. 33
[49] Karl Marx, *Essential Writings of Karl Marx*, edited by David Caute, Panther Books, 1967, p. 40; see also John Bellamy Foster, *Marx's Ecology: materialism and nature*, Monthly Review Press, 2000, pp. 1-9
[50] Jean-François Lyotard, 'Can Thought Go On Without a Body?', *The Inhuman: reflections on time*, 1988, translated by Geoffrey Bennington and Rachel Bowdly, Polity Press, 1991, p. 9
[51] Cheryll Glotfelty, 'Introduction', *TER*, p. xix

prioritises information over materiality, as a result of which information has come to be seen as 'in some sense more essential, more important, and more fundamental than materiality'.[52] Hayles agrees with Wolfe and Haraway that we must acknowledge the fundamental material basis of even the most abstracted theorisations and informational patterns, given the simple fact that 'for information to exist, it must always be *instantiated* in a medium'.[53] In opposition to Platonic doxa that postulate information as 'the Real' in contrast to the messy complexities of material reality, Hayles instead insists on the need to oppose the 'teleology of disembodiment' in contemporary discourse, and return to an understanding of humanity that accounts for its material embodiment, a meeting of natural organism and technological organisation encapsulated in the figure of Haraway's cyborg.[54]

Like Braidotti and Nayar, then, Hayles stresses that human beings are inescapably *material* beings, and criticises any line of cultural or philosophical thought (such as 'transhumanism') that would promote mind or consciousness as being in some sense more fundamental to the human than the material body. In fact, one of the major late twentieth-century developments highlighted by Hayles in her work is the intimate co-evolution of cybernetic with biological theory. One of the most influential concepts to emerge during the 'second wave' of cybernetics from the 1960s to the 1980s, 'autopoiesis', for example, was originally developed by Chilean neurophysiologists Humberto Maturana and Francisco Varela in an effort to account for material organisation of organisms and their interactions with their environments.[55] I will pause over this theory for a moment, since it offers a route into the model of posthumanism that will ultimately inform my discussion of SF works.

In brief, autopoiesis, which roughly translates as 'self-making', characterises biological organisms as self-reproducing systems, closed off from the environment around them but also responsive to stimuli, or 'perturbations', from that environment. Such environmental stimuli 'trigger' the sense organs—whether eyes, nerves, antennae, and so on—of those organisms,

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[52] N. Katherine Hayles, *How We Became Posthuman: virtual bodies in cybernetics, literature, and informatics*, University of Chicago Press, 1999, p. 18
[53] Hayles, p. 13, emphasis in original
[54] Hayles, p. 22. For Hayles' own commentary on Haraway, see pp. 84-85.
[55] See Hayles, pp. 131-159

who then interpret such stimuli according to the organisational structures that comprise their physical being. The upshot of this is that different organisms will respond to different environmental stimuli in different ways, according to the 'internal rules and requirements' that constitute their biological apparatus and internal organisation. These can vary wildly from organism to organism, from eyes that interpret light patterns to antennae sensitive to pollen density. This in turn implies that each organism will *experience* the same environment in very different ways. In Maturana and Varela's terms, each organism 'defines through its organization the domain of all interactions into which it can possibly enter without losing its identity', with this 'domain of interactions' shaped by its capacity to interpret environmental stimuli.[56] Thus, by responding in distinctive ways to the flow of stimuli coming from the environment, each organism will in turn 'create' a distinct internal image of this environment that is both unique to itself—since it is shaped by the organism's subjective capacity to sense and respond to stimuli—and also fundamentally constructed, as there is no 'reality' for the organism 'outside' of this image generated by its systemic components.

This radical notion—that beings can be thought of as autopoietic, self-constituting material systems, closed off from the environment around them yet both constituted by and constitutive of it—has since become highly influential within cultural studies, particularly in posthumanism and the systems theory of Niklas Luhmann. Both Hayles and Wolfe, for example, draw on it to emphasise the extent to which any human mind, far from being distinct from matter, is inextricably shaped and sculpted by both its biological embodiment and the material environment in which it finds itself. For Hayles, autopoiesis is important insofar as it demonstrates the extent to which (as she quotes from Varela) 'information, *sensu strictu*, does not exist', at least not in any form that can be abstracted from materiality.[57] Wolfe, meanwhile, states that autopoiesis 'forces us to rethink our taken-for-granted modes of human experience … by recontextualizing them in terms of the entire sensorium of other living beings and their own autopoietic ways of "bringing forth a world"'.[58] Within this framework, the

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[56] Humberto R. Maturana and Francisco J. Varela, *Autopoiesis and Cognition: the realization of the living*, 1972, D. Reidel Publishing Company, 1980, p. 9
[57] Hayles, p. 155
[58] Wolfe, *WIP*, p. xxv

celebrated Cartesian consciousness of humanity is thus reintroduced directly into the field of the natural, that is, the biological and the material, since our interaction with the world, and consequently the experience and understanding of that world traditionally associated with 'mind', are fundamentally dependent on our physical 'sensorium'—literally, the biological apparatus with which we are equipped.

It is not solely our biological senses, however, with which we interact with the world: in addition, and of equal importance in moulding our experiences of the world, is our technological apparatus. Humanity, as Wolfe remarks, is 'fundamentally a prosthetic creature that has coevolved with various forms of technicity and materiality, forms that are radically "not-human" and yet have made the human what it is'.[59] Humanity, in sum, is not only a natural but also a technological being—*homo faber*, as Tom Shippey has neatly termed it[60]—and so the co-evolution of humanity with its technological 'prostheses' forms a crucial element in the posthumanist narrative of human ontology and epistemology. Fundamental to posthumanism, then, is the assertion that to fully grasp what it is to be human we must look beyond the traditional tenets of humanism, to the realms of both the technological and the natural. A full understanding of both autopoiesis and posthumanism therefore requires an understanding of the complex relationship between technology and nature as these combine to form the human. Whether one understands the terms 'technology' and 'nature' to be mutually constitutive or mutually exclusive, ontologically absolute or culturally relative, there can now be little doubt that the two concepts are inextricably intertwined with one another. The common-sense approach might situate the terms as opposing ends of a dichotomy: technology as that which is artificial, made-with-intent, purposely organised or machinic, and nature as that which is non-intentional and arbitrary, bucolic or rural, organic, non-human or (to be tautological) simply 'naturally' occurring. Indeed, this is the manner in which Ian McNeill understands these terms in *An Encyclopedia of the History of Technology* (1990), remarking that 'we live in a world in which everything that exists can be classified as either a work of nature or a work of man'.[61]

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[59] Wolfe, *WIP*, p. xxv
[60] See Tom Shippey, 'Literary Gatekeepers and the Fabril Tradition', 1994, *Hard Reading: learning from science fiction*, Liverpool University Press, 2016, p. 42
[61] Ian McNeill, *An Encyclopedia of the History of Technology*, 1990, Routledge, 2002, p. 1

Even if such a rigid separation of the worlds of 'manmade' and 'natural' artefacts is in reality a western cultural fantasy, nevertheless, as Kate Soper suggests, this fantasy underpins our usual modes of interacting with the world.[62]

Disrupting this neat dichotomy, and therefore exposing its fantastical nature, is the OncoMouse^{TM}. A potent demonstration of Haraway's cyborg in practice, the OncoMouse^{TM} is a natural being inseparable from, yet not reducible to, the technological system that created it. On the one hand, it is a direct product of the scientific progress, technological innovation, and rationalist appropriation of nature as human resource that have been the hallmarks of western civilisation since the scientific revolution of the sixteenth and seventeenth centuries. Yet, on the other hand, it is also unquestionably a living nonhuman animal, a mouse (without the trademark) whose very biological nature is fundamental to its role in the social system that surrounds and created it. It is therefore also an irreducible element of what is traditionally called 'nature'. Indeed, it is only in that context that it can take part in the technological system at all, since if it was anything other than a non-human 'natural' being its role in medical research would be regarded as ethically unacceptable.

As we saw above, however, neither of the two orthodox views of the OncoMouse^{TM} examined so far—as a Frankensteinian threat to the sanctity of human life, or as a locus of subversive resistance to the very techno-industries that created it—is entirely satisfactory. What is needed is a more nuanced approach to the question of the relationship between technology and nature, one which can mediate the relationship between these realms without allowing one to subsume or negate the other.

Such an understanding may be found in the later works of Heidegger. Heidegger's works, and particularly his later works, suggest a greater appreciation of the need for western humanity to act with responsibility towards nature. In 'Building Dwelling Thinking' (1954), for example, he argues for an orientation towards nature that 'does not master the earth and does not subjugate it, which is merely one step from spoilation', but rather 'safeguards' it, and

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[62] Kate Soper, 'The Discourses of Nature', 1995, *Ecocriticism: the essential reader*, edited by Ken Hilner, Routledge, 2015, p. 267

'return[s] it specifically to its being'.[63] Humanity's role towards nature, he suggests, is not one of exploitation but of protection and nurturing, and indeed the naturalist holism evident in such analyses has led to an embrace of Heidegger's work within such diverse areas as ecocriticism and Taoist philosophy.[64] The very concept of 'poiesis', meanwhile, as John Mingers indicates, is central to Heidegger's understanding of technology—indeed, Heidegger, according to Mingers, 'all but produced' the term 'autopoiesis'.[65]

Heidegger's influence can arguably be felt throughout posthumanism, albeit in ways not always acknowledged: it is evident, for example, in the works of Derrida, a number of which have proven highly influential in posthumanist thought.[66] There is also a distinctly Heideggerian ring to both the language and concept of 'autopoiesis': the notion that individuals are shaped by the environments that they inhabit echoes Heidegger's own argument, in *Being and Time*, that the individual is fundamentally conditioned by the 'fore-structures' of their historical and cultural 'horizons', such that any idealised objectivity that can strip away all fundamental preconceptions and values is never truly possible. The 'past' of any individual, Heidegger argues, 'already goes ahead of it', such that 'the possibilities of its Being are disclosed and regulated' before the individual is even aware of them.[67] The social environment of the individual, in other words, conditions and shapes their individual consciousness so as to preclude the possibility for objectivity or universality as these have been applied to the human.

I am particularly interested here in Heidegger's understanding of technology, since this offers a potentially useful way of mediating between the contrasting utopian and dystopian attitudes towards the interpenetration of nature and technology displayed by Haraway and

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[63] Martin Heidegger, 'Building Dwelling Thinking' [henceforth 'BDT'], *Poetry, Language, Thought*, 1971, translated by Alfred Hofstadter, Harper Perennial, 2001, pp. 147-148
[64] Greg Garrard, for example, includes a discussion of 'Heideggerian ecophilosophy' in *Ecocriticism: the new critical idiom*, second edition, Routledge, 2012, pp. 34-36, while *The Oxford Handbook of Ecocriticism* (Oxford University Press, 2014), also edited by Garrard, includes an essay on 'Phenomenology'. Michael Watts discusses 'Tao, Zen, and Heidegger' in *The Philosophy of Heidegger*, 2011, Routledge, 2014, pp. 230-244
[65] John Mingers, *Self-Producing Systems: implications and applications of autopoiesis*, Springer, 1995, p. 109
[66] Most of Wolfe's posthumanist writings, for example, are deeply indebted to Derrida.
[67] Martin Heidegger, *Being and Time*, 1927, translated by John Macquarrie and Edward Robinson, Blackwell, 2001, p. 41

Vandenberghe respectively. For this, we will turn to his influential 1954 essay, 'The Question Concerning Technology', in which he explores the essence of technology as a mode of 'enframing' the world, and at the same time calls for a more holistic human understanding of nature that neither romanticises it nor reduces it to a stock of resources for human use. This essay thus offers a highly useful way of thinking about humanity's relationship to both categories, one that aligns with the posthumanist aim of augmenting our understanding of the human to account for its fundamentally natural and technological character.

Heidegger's aim in this essay is to uncover not a mere definition but a deeper and more elusive 'truth' about technology and its impact on human relations to the material world—the fundamental understanding of technology that is required if we are to enter into a 'free relationship' towards it. [68] Feeling his way through a maze of Greek etymology and philosophical history in search of the 'essence' of technology, Heidegger eventually arrives at the concept of '*Gestell*', a German word meaning 'skeleton' or 'framework', from which he obtains the more abstract concept of 'enframing' as this elusive truth or 'essence'. [69] Enframing, as the essence of technology, is far removed from the Platonic notion of Ideals: it is not, Heidegger tells us, something inherent in any particular instance of technology, nor is it a 'mythological abstraction' along the lines of the Platonic forms. [70] Rather, it simply describes the mindset through which humanity approaches the natural world. Enframing, according to Heidegger, is 'neither only a human activity nor a mere means within such activity' but a 'rule ... which demands that nature be orderable as standing-reserve'. [71] The human relationship to nature, he argues, has increasingly demanded that the natural world remain on standby as an ordered surplus of resources for human use. The examples that he gives are the human constructions that have spanned the Rhine river: whereas, in the past, the 'old wooden bridge' that spanned the river made no demands on its natural surroundings, instead becoming, like the

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[68] Martin Heidegger, 'The Question Concerning Technology' [henceforth 'QCT'], *The Question Concerning Technology and Other Essays*, translated by William Lovitt, Garland, 1977, p. 6

[69] Heidegger, 'QCT', pp. 19-20

[70] Heidegger, 'QCT', p. 31

[71] Heidegger, 'QCT', p. 23

shore itself, an organic part of river and countryside, the contemporary 'hydroelectric plant' instead compels the river to act as a source of human energy, transfiguring it into 'something at our command' that is compelled to 'report itself' to human needs.[72] It is this same mindset, Heidegger argues, that also drives modern science to insist that 'nature reports itself in some way or other that is identifiable through calculation and that it remains orderable as a system of information'.[73] Science, in other words, moulds nature into systematised packets of information, whether these be the laws of mathematics, biological genera, the periodic table, and so on. This scientific mindset paves the way for enframing: since 'science's way of representing pursues and entraps nature as a calculable coherence of forces', it thus 'prepares the way first not simply for technology but for the essence of modern technology'.[74] The essence of such technology, Heidegger argues, is thus to 'challenge' nature, in an 'unreasonable' way, to become subservient to the human desire to store up energy and resources.[75]

Enframing, then, in Heidegger's use of the term, can be understood literally: it is a mode of 'framing' the world in human terms, in order to make it capable of being systematised, calculated, and exploited by western humanity, with modern technology emerging as an eventual material means to achieve this. Heidegger then outlines two possibilities for humanity in its relationship to technology. On the one hand, humanity may 'push blindly on with technology or, what comes to the same thing ... rebel against it and curse it as the work of the devil'.[76] In either case, the role of technology in the world remains unchanged, its progression unchecked, and humanity will continue to 'exalt' itself 'to the posture of lord of the earth', with all of nature at its disposal, and with predictably devastating consequences.[77] Conversely, Heidegger argues, humanity may acknowledge this destructive mindset of enframing, which is essentially a mode of orientation towards the world, and instead attempt to reconfigure its relationship to nature in a more organic way. Modern technology, he argues, which challenges

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[72] Heidegger, 'QCT', p. 16
[73] Heidegger, 'QCT', p. 23
[74] Heidegger, 'QCT', pp. 21-22
[75] Heidegger, 'QCT', p. 14
[76] Heidegger, 'QCT', pp. 25-26
[77] Heidegger, 'QCT', p. 27

nature, stands in sharp contrast to more traditional modes of creation and construction, which are instead defined by a sense of responsibility towards nature. This older mode of technology, which Heidegger terms 'poiesis', 'brings forth' things that lie concealed within nature, including, crucially, things that are in and of themselves natural. Hence both the old wooden bridge spanning the Rhine and the 'bursting of a blossom into bloom' are forms of poiesis, although this latter example is not directed by humanity but comes from nature alone.[78] Heidegger is even more explicit on this point in 'Building Dwelling Thinking': the term 'building', as he understands it, is imbued with qualities of both construction *and* cultivation of nature, while 'dwelling', properly understood, is a mode of safeguarding the natural world and humanity's place within it.[79]

Notwithstanding the paternalistic nature of Heidegger's orientation towards nature, the positive aspects of his framework of human/non-human relations are clear. By reconnecting with these qualities of safeguarding and cultivation, Heidegger argues, humanity can reconfigure its relationship to technology so as to 'be admitted more and sooner and ever more primally to the essence of that which is unconcealed ... in order that [the human individual] might experience as his essence his needed belonging to revealing'.[80] What this rather enigmatic statement is alluding to is the possibility that humanity—rather than 'everywhere and always encounter[ing] only himself' in nature, which leads inevitably to humanity itself becoming merely another 'standing-reserve'—may conceive of nature in its own terms, as a separate ontological realm with its own inherent value.[81] The means by which to accomplish this is to consciously recognise the process of enframing as it takes place, since 'through our catching sight of what comes to presence in technology' we may become aware of the hazards to both human and natural life inherent in the processes of technologisation. By paying attention to what is produced in our relationship to technology, and of the dangers attendant to an enframing mindset, humanity may 'catch sight' of its technological hubris, and instigate a

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[78] Heidegger, 'QCT', p. 10
[79] See Heidegger, 'BDT', pp. 143-149
[80] Heidegger, 'QCT', p. 26
[81] Heidegger, 'QCT', p. 27

shift to more sustainable forms of revealing that take better account of the need to respect and safeguard material non-human nature.

Heidegger's formulation of technology thus anticipates (and, indeed, informed) Maturana and Varela's theoretical model for understanding the relationship between organisms and environments. Both autopoiesis and enframing have in common the notion that the world as it is experienced by the individual is fundamentally constructed—that the 'reality' with which we interact is not the world as it really is, but only as we, consciously or unconsciously, shape it. This is particularly significant given that the authority of scientific discourse—that authority which, as Heidegger argues, looms so often as a threat to the natural world—rests upon its claims to represent reality *as it really is*. Such a claim masks the constructed nature of such knowledge beneath a veneer of objectivity and impartiality, and so fails to consider both the ideological nature of such knowledge and the extent to which sociocultural preconceptions about the world shape scientific understanding and investigation. The constructed nature of scientific knowledge has been well-noted[82]—yet Heidegger's emphasis on the shared roots of both scientific *and* technological phenomena in 'enframing' is helpful in directing us towards an understanding of technology that extends beyond its usual limited meaning of machine, tool, or apparatus. Heidegger's understanding of the 'essence' of technology is more akin to a shaping principle that informs the kinds of systems, technological or scientific, that may arise in human society. These systems are determined by rationality and order, dictated by 'man's ordering attitude and behaviour'.[83]

In this sense, Heidegger's analysis forms part of a broader philosophical tradition that has approached technology as a principle or system (or, more accurately, as a principle that gives rise to a system) rather than as a collection of material artefacts. One of the roots of this tradition can be found in Nietzsche, who offered a powerful criticism of the obsessive compulsion within modern science not '"to know" but to schematize—to impose upon chaos

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[82] See, as a few notable examples among many, Ludwik Fleck's *Genesis and Development of a Scientific Fact* (1935), Thomas Kuhn's *The Structure of Scientific Revolutions* (1962), and Bruno Latour and Steve Woolgar's *Laboratory Life: the construction of scientific facts* (1979).
[83] Heidegger, 'QCT', p. 21

as much regularity and form as our practical needs require'.[84] For Nietzsche, the knowing subject is not a concrete entity but 'a fiction', while Being, having 'nothing to do with metaphysical truths', is a mere consequence of 'the will to logical truth' which 'can be carried through only after a fundamental *falsification* of all events is assumed'.[85] In other words, it is only by imposing human order on the fundamental chaos of nature that knowledge is generated: as Nietzsche writes, 'It is the powerful who made the names of things into law, and among the powerful it is the greatest artists in abstraction who created the categories'.[86] In this formulation, Becoming, not Being, is the true state of all things: the apparent existence of Being in the world is merely an expression of the 'will to power', which is 'founded upon the premise of a belief in enduring and regularly recurring things … Logicizing, rationalizing, systematizing as expedients of life'.[87] In this way, Nietzsche's thought also anticipates Braidotti's 'vital materialism', with its rejection of universal rationalist epistemologies and its turn towards 'becoming-with' as a more accurate conceptualisation of the phenomenological experience of the human subject.

Later, in the twentieth century, French philosopher Jacques Ellul defined the technological principle as 'technique', 'the consciousness of the mechanized world'.[88] Technique, according to Ellul, is 'the translation into action of man's concern to master things by means of reason, to account for what is subconscious, make quantitative what is qualitative, make clear and precise the outlines of nature, take hold of chaos and put order to it'.[89] Ellul's technique resembles Heidegger's principle of enframing in a number of ways: it represents a threat to nature, which it 'destroys, eliminates, or subordinates'; it is centred on rationality, which it 'brings to bear on all that is spontaneous or irrational', even time and space; it is universal, since everything in western civilisation comes to be 'constructed *by* technique [and]

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[84] Friedrich Nietzsche, *The Will to Power*, 1901, translated by Walter Kaufmann and R.J. Hollingdale, edited by Walter Kaufmann, Vintage Books, 1968, n. 515
[85] Nietzsche, n. 512, emphasis in original
[86] Nietzsche, n. 513
[87] Nietzsche, n. 552
[88] Jacques Ellul, *The Technological Society*, 1954, translated by John Wilkinson, Vintage Books, 1964, p. 6
[89] Ellul, p. 43

for technique'; and finally it subsumes humanity itself, since 'the life of man is now technicized'.[90] Technique is a machinic impulse pervading western civilisation, subjecting all it encounters to the technological principles of order, efficiency, and control.

A similar account of the western technological impulse is put forward by the influential American historian and philosopher Lewis Mumford in *Technics and Civilisation* (1934). Mumford identifies monasteries as the 'first machines', places wherein 'the erratic fluctuations and pulsations of all the worldly life' were first tempered and regulated by 'the iron discipline of the rule', while even earlier the Roman Empire 'helped to give human enterprise the regular collective beat and rhythm of the machine'.[91] They did this not by means of actual technological apparatus, but through the systematic and rationalist organisation of social life. For Mumford, the clock is the archetypal machine of western civilisation, the tool which first 'disassociated time from human events and helped to create the belief in an independent world of mathematically measurable sequences: the special world of science'.[92] Elsewhere, in a passage that echoes both Ellul and Heidegger's descriptions of the 'technicization' of the human, he describes how 'the concepts of science, hitherto associated largely with the cosmic, the inorganic, the "mechanical", were now applied to every phase of human experience and every manifestation of life', as the machinic rhythms of technology came to dominate the social organisation of life in technologically advanced countries.[93]

Ellul and Mumford thus argue alongside Heidegger for an explicit understanding of technology as a principle of technicising rationalisation that has guided—and continues to guide—the social, political, economic, and environmental formations of western humanity. This notion of rationality as one of the defining qualities of western civilisation has been widespread within wider cultural and political theory. Max Weber's 'iron cage' of capitalist modernity, for example, follows along similar lines. In *The Protestant Ethic* (1930), Weber describes the 'technical and economic conditions of machine production which today determine the lives of all the individuals who are born into this mechanism … with irresistible

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[90] Ellul, p. 79, 78-79, 128
[91] Lewis Mumford, *Technics and Civilisation*, 1934, Harbringer Books, 1963, pp. 13-14
[92] Mumford, p. 15
[93] Mumford, p. 217

force'—a system which, lacking all inherent value, risks one day being reduced to mere 'mechanized petrification'.[94] Similarly, Adorno and Horkheimer, in their outline of the 'culture industry' in *Dialectic of Enlightenment* (1944), state that 'Technical rationality today is the rationality of domination', the rationality which drives the standardisation and commodification of culture and art.[95] Elsewhere, they describe the 'conscious task of science' within Enlightenment thought as 'the establishing of a unified, scientific order' and 'the subsumption under principles' of all the world, a unity which is then 'imprinted' on the external world 'as an objective quality'.[96] The same anxiety regarding oppressive rationalisation and technicisation can also be detected in the work of Hannah Arendt, who, in a passage from *The Human Condition* (1958), states that mathematics after Descartes 'succeeded in reducing and translating all that man is not into patterns which are identical with human, mental structures'.[97] At the same time, the very function of the labouring human in contemporary techno-capitalist societies, she argues, is simply to 'care for the upkeep of the various gigantic bureaucratic machines whose processes consume their services and devour their products as quickly and mercilessly as the biological life process itself'.[98] And, finally, Foucault's concept of 'biopower' emphasises a similar image of the individual becoming submerged within a rationalist socio-scientific system that operates on the level of the human species as a totality.[99] Indeed, the concept of 'power/knowledge' that is at the heart of Foucault's examinations of western civilisation could be viewed as an invasive system of knowledge acquisition which steadily assumes social authority within western society, such that 'discipline' and 'biopower' become characterised more than anything else by the erection of vast and impersonal systems of knowledge.

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[94] Max Weber, *The Protestant Ethic and the Spirit of Capitalism*, 1930, Routledge Classics, 2001, pp. 123-124

[95] Theodor W. Adorno and Max Horkheimer, *Dialectic of Enlightenment: philosophical fragments*, 1944, Stanford University Press, 2002, p. 95

[96] Adorno and Horkheimer, pp. 63-64

[97] Hannah Arendt, *The Human Condition*, 1958, second edition, University of Chicago Press, 1998, p. 266

[98] Arendt, p. 93

[99] See Michel Foucault, *Society Must Be Defended: lectures at the Collége de France 1975-79*, 1997, translated by David Macey, Picador, 2003, pp. 239-264

I do not want to overstress the links between the works of these various thinkers. The essential point is that Heidegger's understanding of technology—as a principle of enframing that encircles the world within a systematised human grid of rationalisation and order—forms part of a much broader trend within contemporary social, cultural and political thought that scrutinises the advancement of technological rationalisation in contemporary western society. If intellectual rationality has been the defining quality of the human being within classical humanism since the time of Descartes, then technological rationalisation has emerged, within this strand of philosophical thinking, as its nightmare inverse: rationality taken to such an extreme that it threatens to devour both human society and the natural world on which it is founded. Crucially, each of these thinkers emphasises the extent to which such processes of technological rationalisation threaten not only human society but also the natural world, everywhere scarred by human technological exploration.

To briefly summarise, then: the traditional western model of the human that has emphasised the mind over and above the matter that comprises the physical and natural world (including, crucially, the body) is lacking. To expand this restrictive understanding of subjectivity, it is necessary to look at the extent to which humanity is imbricated in both nature and technology. By 'nature', I mean the natural-material as well as the biological beings— Braidotti's *zoe*—that inhabit such a world. By 'technology', I mean the principle of technological rationalisation and systematisation which informs the development of both physical instances of technological apparatus and rationalist systems of scientific and technical thought. This principle leads the natural world to be represented as nothing more than an indifferent object of study, or as a ready supply of resources for human use. This latter, furthermore, should not be understood as an abstract principle removed from the material world, a formulation which would amount to nothing more than replacing one transcendental category ('mind') with another ('technology'). Rather, it is a hermeneutical principle that determines the ways in which humans shape and are shaped by their material environments.

The importance of these issues cannot be overstated. If the OncoMouse^{TM} can be said to represent anything other than the unfortunate beings manipulated to advance cancer research, it is the extent to which humanity's rationalist mindset can be pushed—the manner in which

nature can be vacated of all inherent value or meaning and made instead to serve exclusively human purposes. Heidegger's account of enframing, as outlined above, is particularly useful in this regard. His primary concern in his essay on technology is with the natural world and the ways in which it is threatened by technological developments—yet, in contrast to the dystopian tone that accompanies much writing on modern technology, Heidegger suggests that we can indeed alter our technological-rationalist mode of orientation towards the world. This may be achieved not by escaping from our 'fore-structures' of knowledge and history (which, at any rate, cannot be achieved), nor through any overturning of the principle of enframing itself, but rather by altering our perceptions of the world to better accommodate the wider world of nature within them. What is needed is a means by which we may stem this encroaching rationalisation and appropriation of the natural world, and the human world along with it.

The way to achieve this, Heidegger argues, is through art. Like technology, art 'reveals' the world—it, too, is a form of poiesis, but one that allows for 'essential reflection on technology and decisive confrontation with it'.[100] Such reflection and confrontation, Heidegger argues, 'must happen in a realm that is, on the one hand, akin to the essence of technology and, on the other, fundamentally different from it'.[101] This is the realm of the aesthetic: art can shed light on the processes of enframing in ways which may well positively influence our principles and actions. I will now look more closely at the value of one specific art form—SF—as a site whereupon the intersections of technological rationalisation, the natural world, and the human may be powerfully articulated and critiqued.

Posthumanism and science fiction

SF has a rich history of far-reaching debate concerning the significance of the human in the face of technological change and ecological upheaval. This extends from the 'Beast Folk' of Wells's *The Island of Doctor Moreau* (1896) to the 'cosmic consciousness' of Olaf Stapledon's *Star Maker* (1937), the robots of Asimov's *I, Robot* (1950) to the androids of Philip K. Dick's

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[100] Heidegger, 'QCT', p. 35
[101] Heidegger, 'QCT', p. 35

Do Androids Dream of Electric Sheep? (1968), and the ambisexual Gethenians of *The Left Hand of Darkness* (1969) to the virtual cyberspace of William Gibson's *Neuromancer* (1984).

Before we begin to investigate the form of the human in SF, however, it is necessary to offer some preliminary comments on the nature of the genre. Even a cursory glance at some of the key critical texts of SF scholarship will reveal a preoccupation with two recurring and interrelated questions: what exactly is SF, and when did it begin? Darko Suvin, for example, wrestles for a full four chapters of his pioneering study, *Metamorphoses of Science Fiction* (1979), with a definition of the genre before diving into an account of its history that stretches back to Plato's *Republic*.[102] The contributors to *The Routledge Companion to Science Fiction* (2009), meanwhile, examine multiple possible starting points for the genre, from the Copernican Revolution in the sixteenth century up to the birth of the pulps in the 1920s.[103] Brian Aldiss, in his popular history of SF, *Billion Year Spree: the true history of science fiction* (1973), locates the roots of the genre in the Gothic mode, and proposes *Frankenstein* (1818), the first 'mad scientist' novel, as the originator of SF.[104] And Adam Roberts, finally, devotes the first chapter of *Science Fiction* (2000) to sifting through various definitions of the genre, eventually arriving at the surprising conclusion that 'SF is a *historiographic* mode, a means of writing symbolically about history', before going on to propose the even more surprising *Paradise Lost* as the source of the 'SF germ'.[105]

I will not here add to the already extensive corpus of discussions of 'what SF is'. Rather, I follow the example of Jack Fennell who, in his study of Irish SF, settles on a definition of 'Irishness' as something 'instinctive and emotive rather than logical'.[106] In a similar vein, Paul

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[102] See Darko Suvin, 'Poetics', *Metamorphoses of Science Fiction*, Yale University Press, 1979, pp. 3-86

[103] Mark Bould, et al. (eds), *The Routledge Companion to Science Fiction*, Routledge, 2009, pp. 3-31, 52-61. The editors of *The Routledge Companion* state that the 'dozen main contenders identified by Clute and Nicholls (1993) and the 30 listed by Wikipedia represent a mere fraction of the attempts to delineate what SF is and to prescribe what it should be' (p. xix). At the time of writing, this had increased to 38.

[104] See Brian Aldiss, 'The Origin of the Species: Mary Shelley', *Billion Year Spree: the history of science fiction*, 1975, Corgi Books, 1973, pp. 7-44

[105] Adam Roberts, *Science Fiction: the new critical idiom*, Routledge, 2000, p. 36, 55, emphasis in original

[106] Quoted in Conor Reid, 'The Heretofore Lost World of (Irish) Science Fiction', *Science*

Kincaid convincingly argues for an understanding of SF that draws on Wittgenstein's concept of 'family resemblance', defining the genre not as a specific set of characteristics but as a 'web of resemblances … braided together in an endless variety of combinations', such that 'the more familiar we are with the genre, the more readily we can accept their variety, the more subtly we might interpret their combinations'.[107] Thus SF for Kincaid, as with Irishness for Fennell, becomes something felt, rather than strictly defined. This is the understanding of the genre that I will be working with here.

I will focus on one generic family trait of SF in particular in my examination of the human in SF: its habitual preoccupation with the human relationship to technology. Nearly every work traditionally understood as SF centrally features some kind of technological thematic: Fredric Jameson highlights the 'continuing technological bias of Science Fiction', as well as the 'virtual abolition of … nature' in many SF texts, while Tom Shippey goes further in arguing for an understanding of SF as 'fabril literature', that is, literature centred on 'the *faber*, the maker: often the blacksmith, the metal-beater, but also the Moreau, the manipulator of biology and even of society'.[108] From the electric nodes of Shelley's *Frankenstein* (1818), the Nautilus of Verne's *Twenty Thousand Leagues Under the Sea* (1870), and the tripod Martians of Wells's *The War of the Worlds* to the 'scientifiction' of Gernsback, the super-weapons of the 'Golden Age', and the singularities[109] and artificial intelligences of cyberpunk and beyond, technological innovation and experiment has formed one of the key recurring tropes of SF. In this sense, Robert Heinlein's famously nonchalant description of dilating doors

Fiction Studies, vol. 43, no. 1, 2016, p. 155

[107] Paul Kincaid, 'On the Origins of Genre', *What It Is We Do When We Read Science Fiction*, Beccon Publications, 2008, p. 20

[108] Shippey, p. 42; Fredric Jameson, *Archaeologies of the Future: the desire called utopia and other science fictions*, Verso, 2005, p. 64

[109] The 'singularity' refers to an anticipated future moment in which technology will become intelligent enough to shape its own evolution, at which point humans will be superseded as the dominant beings on earth. As Istvan Csicsery-Ronay Jr. notes, this moment comprises 'an entirely material leap over an evolutionary divide, from the biosphere to the technosphere' (p. 263). The term was popularised by Vernor Vinge in his well-known 1993 essay, 'The Coming Technological Singularity'. See Vernor Vinge, 'The Coming Technological Singularity: how to survive in the post-human era', 1993, web, *Acceleration Studies Foundation*, accelerating.org/articles/comingtechsingularity.html, accessed April 2017.

in *Beyond This Horizon* (1948), highlighted by Samuel Delany as a characteristic demonstration of SF style, can also be used to demonstrate the genre's relationship to technological development.[110] The sentence in question states simply 'The doors dilated', and was originally singled out by Harlan Ellison as an example of Heinlein's ability to generate entire worlds in his SF texts by simply alluding to incidental future technologies. As this example illustrates, even where technology does not comprise the central theme of an SF work, it is often deployed to give some passing intimation of possible future developments, and to signal the deviation of the 'reality' presented in the work from the world familiar to the reader. Furthermore, any representation of technology created by humans also inevitably involves some broader account of humanity's relationship with the natural world. This, too, can be seen throughout the history of SF: in *Frankenstein*, where the Creature comes to represent the moral consequences of human interference with natural law; in Wells's romances, where evolutionary theory forces readers to rethink humanity's relationship to the rest of the natural world; in the pulps and the works of the 'Golden Age', where nature so often figures as a barrier to be overcome or a resource to be put to use in humanity's technological evolution; and in cyberpunk, wherein the possibilities of virtuality raise a new set of problematics centred on the experience of embodiment and disembodiment.

Hence, SF seems to offer the ideal genre in which to examine the figure of the human and its construction in relation to technological and natural systems. This has been particularly the case with late twentieth-century SF works: at the same time that the OncoMouse™ was being 'born' in a Harvard research lab, SF was undergoing its own apparent posthumanist turn with the emergence of cyberpunk, a subgenre highly preoccupied with questions of human-machine interface, corporeal transcendence, cybernetics, and virtuality. Bruce Sterling, in his well-known preface to *Mirrorshades* (1986), a key cyberpunk anthology, outlines a list of thematic concerns in which the terms 'cyberpunk' and 'posthumanism' could easily be viewed as interchangeable:

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[110] Delany discusses Heinlein's sentence as a prime example of a 'science-fictional sentence', in which language that, in realist works, would function metaphorically must in SF be understood literally. See Samuel R. Delany, 'About 5,750 Words', *The Jewel Hinged Jaw: notes on the language of science fiction*, 1978, Wesleyan University Press, 2008, p. 35

> Certain central themes spring up repeatedly in cyberpunk. The theme of body invasion: prosthetic limbs, implanted circuitry, cosmetic surgery, genetic alteration. The even more powerful theme of mind invasion: brain-computer interfaces, artificial intelligence, neurochemistry—techniques radically redefining the nature of humanity, the nature of the self.[111]

Such themes are prevalent throughout late twentieth-century SF, a fact that has led many thinkers to draw on SF literature from this period in their examinations of what Robert Pepperell has called the 'posthuman condition'. Haraway, for example, in her 'Cyborg Manifesto', refers to the novels of Joanna Russ and Octavia Butler; Wolfe analyses a novel by Michael Crichton in one of his essays; and Hayles makes use of the works of Philip K. Dick and Greg Bear to illustrate various points in her examination of the history of cybernetics. This tendency also reflects the nature of posthumanist theory itself which, as we have seen, has often defined itself specifically in relation to the technological developments of the latter half of the twentieth century.

Within SF studies itself, the many affinities between SF and posthumanism have been well noted. Veronica Hollinger's entry on 'Posthumanism and Cyborg Theory' in *The Routledge Companion to Science Fiction*, for example, supports its discussion of posthumanism using examples drawn from late twentieth-century cyberpunk and postmodernist works by writers such as William Gibson, Greg Egan, Marge Piercy, Octavia Butler, Bruce Sterling, and so on. Hollinger, like Haraway and Braidotti, invokes the spectre of the OncoMouse™ in her discussion of the intersections of SF and posthumanism, noting that this being 'occupies the space where imagination and materiality intersect, the space of SF in the posthuman era'.[112] Sherryl Vint's study of technology, subjectivity and the body in SF, *Bodies of Tomorrow* (2007), too, focusses on fiction from the late twentieth and early twenty-first centuries. *Bodies of Tomorrow* is centrally concerned with the relationship between subjectivity and embodiment. Like Hayles, Vint is critical of the western trend that views subjectivity as in some way disconnected from the experience of embodiment: as she argues,

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[111] Bruce Sterling, 'Preface', *Mirrorshades: the cyberpunk anthology*, edited by Bruce Sterling, Arbor House, 1986, p. xiii

[112] Veronica Hollinger, 'Posthumanism and Cyborg Theory', *The Routledge Companion to Science Fiction*, edited by Mark Bould et al., Routledge, 2009, p. 277

'The ability to construct the body as passé is a position only available to those privileged to think of their (white, male, straight, non-working-class) bodies as the norm'.[113] Vint thus attempts to 'return to a notion of embodied subjectivity' that has come increasingly under threat from twenty-first-century fantasies of a post-embodiment future, by examining a number of SF works in which technology acts to modify the experience of embodiment and, correspondingly, the nature of human subjectivity.[114] And Thomas Foster, in *The Souls of Cyberfolk* (2005), examines cyberpunk as a form of posthumanist literature, yet in such a way as to expand on received notions of cyberpunk as simply advocating 'an escape from either the human or embodiment entirely into a fancied realm of pure mind'.[115] Although his study focuses primarily on more recent works, Foster also argues that cyberpunk's posthumanist explorations respond to and elaborate on a whole set of previously existing concerns regarding embodiment and subjectivity, evident in SF as far back as Wells.[116] Cyberpunk, he goes on, should therefore be read not as the 'vanguard' of posthumanism in American popular culture, but rather as 'an attempt to intervene in and diversify what posthumanism can mean', a debate with its roots in the history of SF literature.[117] Foster then undertakes a detailed examination of cyberpunk and its various literary descendants as locus points at which questions of embodiment, subjectivity, technological and biological ontology, gender, and particularly race can be powerfully articulated, this latter category revealing one of the fault-lines of a posthumanist tradition that often 'ignore[s] and seem[s] to eliminate the problem of the colour line'.[118]

Although its thematic overlap with posthumanism has naturally led to cyberpunk and postmodern SF drawing the bulk of posthumanist critical attention, older works have not been wholly neglected: as Colin Milburn remarks, 'The history of SF … offers a map of the posthuman imagination', and numerous critics have examined classical SF texts from a

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[113] Sherryl Vint, *Bodies of Tomorrow: technology, subjectivity, science fiction* [henceforth *BT*], University of Toronto Press, 2007 p. 8
[114] Vint, *BT*, p. 8
[115] Thomas Foster, *The Souls of Cyberfolk: posthumanism as vernacular theory*, University of Minnesota Press, 2005, p. xii
[116] See Foster, pp. 6-7
[117] Foster, p. xiii
[118] Foster, p. xxiii

posthumanist perspective.[119] Elaine L. Graham, for example, in *Representations of the Post/Human* (2002), is interested in 'how understandings of what it means to be human are contested and negotiated', particularly in relation to non-human 'monstrous' beings, taking some of her key examples from classical works of SF, including Shelley's *Frankenstein* and Fritz Lang's *Metropolis* (1927).[120] Beings such as Shelley's famous Creature, Graham argues, 'destabilize evolutionary, technological and biological hierarchies that serve to privilege the rational male subject'.[121] In doing so, they 'bear witness to the power of the marginal, the Other, to demarcate the known and the unknown, the acceptable and deviant', and thereby to function as 'keepers of the boundaries between human and Other'.[122] Such transgressive creatures serve, like Haraway's cyborg, to pollute the neat ontological categories of traditional thought. Bruce Clarke takes this argument even further in *Posthuman Metamorphoses* (2008). Clarke draws on the systems theory of Niklas Luhmann, which extends the implications of biological autopoiesis to encompass social systems and structures, conceived as '*nonliving autopoietic systems*'.[123] Given that humans are inextricably caught up in social systems that precede and encompass them, Clarke argues that the ontological sanctity of the human is always-already 'polluted' by its imbrication in such external, pre-existing systems. As a result, '"the human" is both living and nonliving': a biological self-referential autopoietic system that is nevertheless bound up in nonhuman and nonliving systems. The implications of this for SF arise from Clarke's interest in narrative focalisation as a mode of postulating a subjective position unavailable to the human. By imagining the subjectivities of posthuman beings beyond human cognitive experience—Clarke uses the example of Wells's Martians in *The War of the Worlds*—SF allegorises the actual operations of human subjectivity in which subjective experience captures merely one of a number of possible 'realities'.

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[119] Colin Milburn, 'Posthumanism', *The Oxford Handbook of Science Fiction*, edited by Rob Latham, Oxford University Press, 2014, p. 524
[120] Graham, p. 61
[121] Graham, p. 60
[122] Graham, p. 60
[123] Bruce Clarke, *Posthuman Metamorphoses: narrative and systems*, Fordham University Press, 2008, p. 17

These examples serve to demonstrate the rich thematic overlap that exists between SF and posthumanism. My study forms part of this critical lineage of posthumanist studies of SF texts—albeit one that, like Graham's study, attempts to balance the dominant critical focus on late twentieth-century works. Where Graham focuses specifically on images of inhuman monstrosity in SF literature, I argue that a work need not feature such explicitly inhuman beings as aliens, robots, cyborgs, and monsters to be read as engaging with posthumanist problematics. The central assertion of posthumanism is that humanity must be understood in material terms, as technological and biological beings—not mind over matter, but mind *as* matter. Since all SF is concerned with humanity's complex imbrication within technological and natural systems, this thesis will assume that *all* SF, even the most seemingly humanist in its ideological stance, in fact raises posthumanist concerns. In making this assertion, I am not merely attempting to go against the grain of contemporary scholarship—rather, I am taking seriously Neil Badmington's insistence that posthumanism must 'take the form of a critical practice that occurs *inside* humanism, consisting not of the wake but the working-through of humanist discourse'.[124] The 'post-' in 'posthumanism', as Badmington argues, does not imply that it comes 'after' humanism, but rather emphasises the constant presence of the posthuman *within* the human—the extent to which even the most avowedly humanist accounts of history, technology, biology, and so on cannot but admit the constructed nature of human experiences of the world. If we are 'after' humanism, it is only because we increasingly recognise that the human as formulated within this humanist tradition never actually existed—as Halberstam and Livingston remark, in this respect we 'were never human'.[125] Humanity, in other words, has never transcended its roots in the material world, but has been shaped through its relationship to nature and technology. By examining the intersections between nature, technology, and the human in SF, I will show that it is possible to come to a better understanding of the ramifications of this—fundamentally posthuman—fact. In doing so, we will see that SF, in whatever era it has been written, is in fact always engaged with posthumanist thematics.

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[124] Badmington, 'Theorizing Posthumanism', p. 22
[125] Halberstam and Livingston, p. 8

At the same time, however, I will also argue that we must not prematurely commend SF's apparent embrace of posthumanist modes of being. The emergence of posthumanism as a specific site of enquiry in the late twentieth century marks also a specific crisis point—what Derrida calls a 'crisis of *versus*', wherein the tensions always inherent in the worn dualisms of western thought come under ever-increasing strain, intensified by such symbolic 'monsters' (in Graham's terms) as the OncoMouse^{TM}. Yet, if the posthuman has always acted to subvert the traditional figure of the human, then it stands to reason that this conventional human figure also remains lurking within the posthuman, ready to resurface at any moment. We can view this dynamic at work in SF. Milburn remarks that, 'at the root of the posthuman condition (whether biological, technological, or cultural), there lies science fiction'.[126] Such a remark is accurate up to a point—SF has indeed depicted a whole range of posthuman beings and subjectivities—and yet it is also disingenuous. So often, at the furthest reaches of a seemingly posthumanist SF tale, what is encountered there is in fact a relatively conventional 'human' figure—humbled perhaps (as in Wells's romances), biologically transformed, or even disembodied, but still inscribed in terms of the scientific rationalism that has characterised much western thought concerning the human, with mind emphasised over and above matter, and nature viewed in purely instrumentalist terms. In this way, SF may, and indeed does, imagine a whole variety of posthuman beings and conditions, but often in merely superficial ways that ultimately reinscribe the ethical and ontological supremacy of the human itself. Badmington puts this point succinctly in his study of aliens and humanism in Hollywood cinema: the attempts of writers and directors to imagine the alien Other, he argues, are often merely tokenistic, with the result that 'the extraterrestrial', in these works, 'is always overwhelmingly terrestrial'.[127] SF thus offers a *potential* mode of exploring a range of posthumanist concerns, but this exploration is itself often ambiguous or problematic—SF betrays both a simultaneous desire for and fear of the dissimulation of the human, an equivocation which, I will argue, suggests a contradictory sense within Anglo-American SF of the posthuman as something both feared *and* earnestly wished for.

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[126] Milburn, p. 527

[127] Neil Badmington, *Alien Chic: posthumanism and the other within*, Routledge, 2004, p. 37

We can more clearly conceptualise this facet of SF by distinguishing between 'transformative' and 'assimilative' narratives of the human: whereas the former is open to encountering the radically nonhuman, and thereby transforming the humanist framework that has underpinned western thought, the latter attempts to assimilate such radically Other encounters or beings into pre-existing—and human-centred—cognitive frameworks, thereby neutralising their subversive or transformative potential. The speculative mechanisms of SF, its ability to allegorise cultural narratives of difference and identity, mean that SF works are continuously confronted with this choice between transformation and assimilation—between questioning the fundamental grounds on which the 'human' has been founded, and neutralising the radically nonhuman in the service of preserving those grounds. The majority of works, as we will see, lie somewhere in between these two poles, generating a tension between assimilative human and transformative posthuman modes of subjective being as these are narrativised within the text.

Given this tension between humanist and posthumanist embodiments and subjectivities, or between assimilative and transformative narratives of the human, we can perhaps more usefully regard posthumanism not as a specific state of being, but rather as a hermeneutical principle along the lines of Bloch's utopian 'function'. According to Bloch, utopia need not necessarily take the shape of a formalised outline of a sociopolitical community, but can be conceived more broadly as 'anticipation', defined as the human impulse to look forward and envision some alternative to present reality, however obscure or veiled a form this looking-forward may take.[128] Hence Bloch argues that any kind of human endeavour—the 'appeal of dressing up, … the *world of fairytale*, brightened distance in *travel*, the *dance*, the dream-factory of *film*, the example of *theatre*', the more familiar *'planned or outlined utopias'*, or indeed any instance of future-oriented imagining carried out by human minds—can be viewed in terms of a utopian hermeneutic to the extent that such endeavour implies or denies the possibility for a more positive future.[129] Such 'utopian functions', Bloch argues, are 'first

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[128] See Ernst Bloch, *The Principle of Hope*, 1959, translated by Neville Plaice, Stephen Plaice, and Paul Knight, The MIT Press, 1995, pp. 3-18

[129] Bloch, p. 13, emphasis in original

represented in ideas', which 'extend, in an anticipating way, existing material into the future possibilities of being different and better'.[130] As Carl Freedman argues in his well-known essay, 'Science Fiction and Utopia', for Bloch 'all genuine art—virtually by definition—finds its true significance in utopian construing'.[131] Freedman goes on to argue for the value of Bloch's model of the utopian hermeneutic for analysing SF, placing Blochean utopianism alongside 'Bakhtinian stylistics and Lukácsian genre analysis' as a key component of the 'critical-theoretical project'.[132]

A similar construction can be employed in relation to posthumanism: rather than collecting an entire work or body of works under the heading of 'posthumanist' or 'humanist' (or, indeed, 'anti-humanist', which typifies several of the works we will examine here), it is more constructive to conceive of posthumanism as a hermeneutical principle aimed at broadly assessing the ideas, values and notions that surround the human or non-human in these works. Using such a model, any SF text may thus be read as a complex admixture of humanist and posthumanist 'functions'. A critical framework analogous to such an understanding of posthumanism may be found in Moylan's notion of the 'critical utopia' (discussed in more detail in Chapter Four): just as the critical utopia occupies a liminal space between the originary world of the author and an idealised 'perfect' society, so the human in SF occupies a liminal space between assimilative humanist and transformative posthumanist models of subjectivity and embodiment. With this recognition, our discussion of posthumanism has returned finally to the two points with which I began: all SF is engaged in posthumanist concerns, but, as we will see, the attachment to the traditional human is more robust or enduring than it may at first appear. Or—as we may now express it in more explicitly critical terms—SF works are neither straightforwardly humanist nor posthumanist, but can be more fruitfully read as heterogeneous composites of conflicting humanist and posthumanist functions.

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[130] Bloch, p. 144

[131] Carl Freedman, 'Science Fiction and Utopia: a historico-philosophical overview', *Learning from Other Worlds: estrangement, cognition and the politics of science fiction and utopia*, edited by Patrick Parrinder, Liverpool University Press, 2000, p. 77

[132] Freedman, p. 78

The remainder of this thesis is divided into four chapters, each of which addresses a different era from the Anglo-American tradition of SF. These four chapters are linked by a thematic concern centred on this question of the human and its interplay with technology and nature, and will take us from the nineteenth century up to the 1970s. As mentioned above, posthumanist examinations of SF works have tended to focus on the period from the 1970s and 1980s onwards, in which themes of virtuality, cybernetics, A.I., and so on began to proliferate more widely within the genre. By selecting a number of key works from before this period, I aim to extend this critical focus by applying posthumanist analysis to SF texts from throughout the history of the genre.

Each chapter will focus on two major SF works, and will examine these in relation to a specific human 'archetype' that, I will argue, embodies some of the key humanist and posthumanist concerns of the period in question. These archetypes—the 'pre-human', the 'trans-human', the 'supra-human', and the 'post-human'—are deployed in order to illustrate the necessity for more fluid understandings of the terms 'human', 'nonhuman', and 'posthuman' as ontological categories, and to illustrate the point outlined above that SF cannot be uncritically regarded as simply the 'literature of posthumanism'. Clarke and Rossini, in their recent volume on posthumanism and literature, provide a 'Chronology' of the 'Posthuman', situating a number of SF authors within a timeline of posthumanist explorations of the subject.[133] The issue with such a framework of the posthuman is the risk of promoting a homogenous figure—the 'Posthuman'—as a straightforward contrast to the 'Human', and thereby diminishing the diversity and complexity of posthumanist and humanist functions as these are expressed within literary works. The archetypes outlined here attempt to complicate this model by demonstrating the extent to which the posthumans depicted in the works of (to list some of the writers featured in the Chronology above) Shelley, Wells, Huxley, Smith, Asimov or Clarke differ from each other in key ways.

Each archetype therefore comprises a distinct symbolic paradigm of the human found in different periods of twentieth-century SF—a corollary of Damien Broderick's 'narrative

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[133] Clarke and Rossini, pp. xxv-xxix

archetypes' that together comprise the SF 'megatext'. Broderick, drawing on Gary K. Wolfe, argues for the existence of a number of SF narrative 'icons'—'the spaceship, the robot and the monster' being three key examples—whose propagation within SF texts has generated a set of flexible 'narrative vectors' and reader expectations concerning how the icon in question is to be deployed and understood.[134] Broderick argues further that such icons lack a truly fixed consensual significance—'None of the candidates (alien, robot, spaceship, etc.) has a single, univocal conventional weight or meaning even within a given generic time-frame or publishing regime'—but are rather characterised (in an image reminiscent of Kincaid's definition of SF above) by a set of 'family resemblances'.[135] The human archetypes can be interpreted in a similar manner: each comprises a flexible human icon whose significance centres around a set of family resemblances that nevertheless remain stable in diverse narrative contexts.[136] Like Broderick, I do not argue that these paradigmatic human archetypes hold true only in the specific periods in which I situate them here—on the contrary, a glance through any given period of SF will reveal a complex and contradictory range of ideas, values, and anxieties centred on the question of humanity and human nature. My chronology here represents just one possible history of the human in SF, albeit one that, I believe, reflects some of the dominant trends of each given period.

For practical reasons, I have limited my consideration to Anglo-American authors. In doing so, I acknowledge the loss of some key SF traditions within 'world SF' which would undoubtedly prove fruitful in such a discussion. In the last couple of decades, new developments in the genre, including the advent of Afrofuturism and the emergence of various national SF literatures, including Indian, Chinese, and Latin American SF, have greatly expanded the scope and diversity of SF, deploying the tropes of SF literature to generate a wide variety of global responses to expanding techno-scientific regimes. Of course, even invoking the existence of an entity called 'world SF' that is distinct from 'Anglophone SF' returns us inevitably to questions concerning the precise nature of SF—is it an intrinsically 'western' or

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[134] See Damien Broderick, *Reading by Starlight: postmodern science fiction*, 1995, Routledge, 2005, pp. 57-63
[135] Broderick, p. 59
[136] Broderick, p. 60

more transcultural or global literary mode? While this is an important and interesting question, it unfortunately lies outside the scope of this thesis. As it stands, British and American SF authors have in general been among the most prolific and widely-disseminated throughout the twentieth century, and the two countries have also shared a common language that has allowed for a continuous interplay of ideas, stories, and influences.

Chapter One, 'Worlds Lost and Gained', examines the figure of the 'pre-human' in Arthur Conan Doyle's *The Lost World* and Jack London's *The Iron Heel*. The pre-human is configured as a debased form of humanity—an allegedly degenerate human who fails to exhibit the kind of moral and intellectual qualities required to qualify for 'full' personhood. In *The Lost World*, this pre-human takes the form of the 'ape-men', a race of violent humanoids encountered by a group of imperial adventurers during a trip to the Amazon jungle. In *The Iron Heel*, by contrast, the pre-human can be seen in the 'People of the Abyss', London's term for the oppressed workers of industrial capitalism. In each case, the pre-human is treated as an evolutionary aberration: a regressive throwback to an earlier form of humanity, deployed to emphasise the contrasting moral and intellectual rectitude of the novel's protagonists. We will also see how both Conan Doyle and London employ evolution as a way of reconceptualising their preferred social form—for Conan Doyle, his own European imperialist civilisation, for London, a future socialist utopia—as the outcome of evolutionary dynamics and, therefore, the most 'natural' human social form. Before we explore these works, however, we will first begin with a brief examination of two major writers from nineteenth-century SF: Mary Shelley and Jules Verne. Shelley and Verne, I argue, serve as paradigmatic figures for two distinct lines of nineteenth-century humanist thought: the first characterised by scientific scepticism and a wary attitude towards technological development, the second by a triumphalist humanism in which technology serves as a means to further human progress. These two lines of humanist thought, we will see, remain central to SF until at least the mid-century period.

Chapter Two, 'Soma and Skylarks', moves on to examine the figure of the 'trans-human' in two key works from the interwar period, Aldous Huxley's *Brave New World* and E.E. 'Doc' Smith's *Skylark* series. We begin with an examination of the SF of this period, focussing particularly on the impacts of the First World War on cultural perceptions of humanity and its

relationship to technology. The two lines of thought traced out in nineteenth-century SF persist into the early decades of the twentieth century, taking the form of 'technophobic' and 'technophilic' strains of SF. These two contrasting attitudes towards technology decisively shape how the trans-human is accommodated within our two major works. The trans-human is a technological figure, wholly defined and determined by technological systems that lie beyond the traditional limits of the human itself. Both Huxley's and Smith's works, as we will see, deploy the figure of the trans-human—but to very different ends. Huxley's famous dystopian work depicts the subversion of traditional human nature brought about as a result of external technological systems. For Huxley, these systems—Fordism, the 'culture industry', the mass media—deprive western humanity of the capacity to think and act for itself, and result in a population of mechanised beings lacking true agency or creativity. Against this sterile existence, Huxley instead advocates a kind of 'life-worshipping': a recognition of both the 'animal' and 'spiritual' aspects of the human. In contrast, Smith promotes an extension of the human intellect to encompass the whole galaxy within a technological network. *Skylark* is typical of the pulp SF that emerged in the United States in the interwar years: triumphantly imperialist and humanist, and deeply concerned with extending the capacities of the human mind beyond their traditional limits. In both *Brave New World* and *Skylark*, we can detect a form of the trans-human—but where Huxley seeks to turn away from this technological being to recapture a more traditional form of human, Smith instead pushes his human figures ever further beyond their material limits, towards a technological embrace of the entire galaxy itself.

Chapter Three, 'Homo Gestalt', moves on to the mid-century period, examining the figure of the 'supra-human' in Isaac Asimov's *Foundation* and Arthur C. Clarke's *The City and the Stars*. We begin, as before, with a discussion of the broader context of mid-century SF. The technophilic and technophobic strains of SF identified in the works of the interwar period are also evident here: the former in the works of the 'Golden Age', which demonstrate a technocratic attitude inherited from earlier pulp SF; and the latter in the more pensive, and often pessimistic, works that came increasingly to dominate SF in the post-Hiroshima period. The continued growth of mass society and bureaucratic regimes, coupled with the cultural impacts of Second World War, led to an increasing sense of a loss of individual agency and

autonomy in the works of the mid-century. Each of our two authors turn instead to a vision of a technocratic galactic 'empire', and to the figure of the supra-human, as a means of dealing with this loss of agency. The supra-human comprises a mass of individuals forming a composite social body—as a result, it is no longer the fate of the individual, but rather that of the mass that is the primary concern of these SF works. In Asimov's *Foundation*, the population of the galaxy becomes subject to mass biopolitical control by anonymous scientific institutions. These institutions function as paternalistic guardians, ensuring the continuity and safety of dynamic human civilisation—but at the cost of the human capacity for meaningful action. Clarke's *The City and the Stars*, conversely, advocates a holistic union of technocracy and pastoralism, and ends with a totalising vision of the human species as part of a transcendent 'cosmic consciousness'.

Finally, Chapter Four, 'Disaster and Redemption', takes us to the SF of the 1960s and 1970s, and the figure of the 'post-human'. The post-war decades were a period of radical social change, marked by accelerated rates of technological innovation, the growth of mass bureaucratic structures and the resulting atomisation of the individual, and the pervasive influence of mass media and corporate-driven advertising which increasingly blurred the divide between the public and the private, or the 'real' and the 'unreal'. In addition, the massive upsurge in post-war capitalist production also contributed to environmental concerns that brought the relationship between western humanity and the natural world to the fore of the public consciousness. These concerns fed into the SF produced during this period, including the two primary works under consideration. Ballard's *The Crystal World*, the final volume in his acclaimed 'disaster trilogy', responds to the altered conditions of post-war society by retreating into 'inner space', replacing hard SF thematics with a greater preoccupation with the psychological landscapes of the human mind. Such inner-directed narratives, however, come at the cost of meaningful engagement with the external world: Ballard's novel, although stressing the utopian aspects of the natural catastrophe that it depicts, also ends by sacrificing the natural world to its vision of human individual transcendence. Le Guin's *The Dispossessed*, conversely, engages directly with humanity's relationship to the natural-material world. Le Guin's fiction explicitly repudiates the universalism, imperialism, and rationalism of earlier SF

narratives, emphasising instead the relativity of such terms as 'human' and 'non-human'. In place of the totalising humanist narratives of earlier SF, *The Dispossessed* instead depicts an organic, ethical society in which the human exists in a state of ontological parity with the non-human. Each work thus offers a vision of the post-human, but whereas for Ballard this 'post' is meant literally—in his work, humanity confronts its literal (albeit utopian) extinction—in Le Guin this 'post' gestures to 'beyond' the human, as her novel overcomes some of the humanist limitations that have marked earlier SF.

Throughout these four chapters, this critical history of the human in SF will both affirm and challenge the view of SF as a genre of what Elena Gomel calls an '"as if" ontology'—that is, as a genre of radical ontological possibilities.[137] Earlier in this introduction, I outlined the pressing need for a better understanding of the ideas, values, and attributes that surround the figure of the human, in order to better account for—and challenge—the increasingly fragmented and destructive western modes of interaction with the natural world, and with those humans perceived as being different from 'us'. I repeat these assertions here: to understand where we are going, we need first to examine where we have come from. The speculative frameworks of SF establish it as a vital site of enquiry for assessing and critiquing the legacy of humanist thought, and for exploring possible alternatives to traditional ways of thinking. We will now begin to examine this proposition in more detail in our first chapter, with the figure of the 'pre-human'.

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[137] Elana Gomel, *Science Fiction, Alien Encounters, and the Ethics of Posthumanism: beyond the golden rule*, Palgrave Macmillan, 2014, p. 3

Chapter One

Worlds Lost and Gained: Evolution, animality, and the pre-human in Arthur Conan Doyle's *The Lost World* and Jack London's *The Iron Heel*

> Progress … is not an accident, but a necessity. Instead of civilization being artificial, it is part of nature; all of a piece with the development of the embryo or the unfolding of a flower. The modifications mankind have undergone, and are still undergoing, result from a law underlying the whole of organic creation; and provided the human race continues, and the constitution of things remains the same, those modifications must end in completeness. As surely as a tree becomes bulky when it stands alone, and slender if one of a group … —so surely must the human faculties be moulded into complete fitness for the social state; so surely must evil and immorality disappear; so surely must man become perfect.[1]

In this passage, Herbert Spencer summarises some of the ideas that will inform our discussion of the human in early twentieth-century SF. Spencer was an enthusiastic exponent of evolutionary thought, and he here offers what can clearly be read as an evolutionary model of social development—a vision of civilisation moving organically, by way of 'modifications', towards a state of culminative 'completeness'. Exactly what such completeness might look like was, of course, a matter of much debate. In this chapter, we will examine two opposing views of the 'perfect' civilisation from the early twentieth century—one imperialist, the other utopian-socialist—as well as of the precise nature of the 'mankind' that would inhabit it. In doing so, we will uncover some of the ways that European imperialism and capitalist modernisation impacted on contemporary ideas surrounding the human in this period.

The *fin de siècle* period was a time of dynamic social, political, cultural, and economic change. The rapid pace of this change, and its rising human cost, were increasingly apparent in every area of life: the industrial revolution rewrought the economic and political landscapes of the western world; evolutionary theory upturned traditional ideas regarding humanity's

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[1] Herbert Spencer, *Social Statics: or, The conditions essential to human happiness specified and the first of them developed*, 1851, quoted in Maurice Mandelbaum, *History, Man, & Reason: a study in nineteenth-century thought*, 1971, The Johns Hopkins Press, 1974, p. 234

relationship with the natural world; the intensification of European, and later US, imperialism, brought 'developed' and 'primitive' peoples into closer—and more violent—contact than ever before; and the acceleration of scientific and technological development utterly transformed the manner in which humans interacted with each other and the world around them. Central to these dynamic processes, as David Harvey notes, was the notion of 'creative destruction': the recognition that, in order to progress towards the new and more enlightened world, one must destroy the old irrational one.[2] Such destruction runs the risk, however, of revealing the inherent violence and irrationalism of human nature that the very process of Enlightenment rational progress had attempted to negate.

Each of these diverse phenomena contributed to contemporary ideas concerning the human in the late nineteenth and early twentieth centuries. We will examine two key SF works from the early twentieth century, Arthur Conan Doyle's *The Lost World* (1912) and Jack London's *The Iron Heel* (1907). Both of these novels emphasise the presence of repressed 'animal' characteristics within the rational human—a set of qualities gathered by Bradley Deane under the heading 'primitive masculinity', defined as a propensity towards 'raw strength, courage, instinctive violence, bodily size, and homosocial commitment to other men'.[3] As will be seen, these characteristics become articulated in both texts as expressions of 'primitive' qualities that re-emerge in response to the volatile conditions of both European imperialism and capitalist industrialisation. In my discussion of these works, I will employ the concept of the 'pre-human', which I define as a regressive human figure whose ostensible barbarity and primitivism functions within the text as a foil to the moral correctness and intellectual sophistication of the 'fully' human protagonists. The pre-human is specifically figured as a degenerate or unevolved form of humanity, its presence in these works registering the extent to which their narrative and thematic structures are informed by evolutionary thought. The end to which such thought is directed, however, differs markedly between the two works: in *The Lost World*, and indeed in much lost-world fiction, evolution is deployed to underpin a

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[2] David Harvey, *The Conditions of Postmodernity: an enquiry into the origins of cultural change*, 1990, Blackwell, 1992, pp. 15-18

[3] Bradley Deane, 'Imperial Barbarians: primitive masculinity in lost-world fiction', *Victorian Literature and Culture*, vol. 36, no. 1, 2008, p. 206

hierarchy of human evolutionary development, with imperial Europe at its summit, while in *The Iron Heel* it is conversely employed in the service of London's convictions regarding the inevitability of a future socialist utopia. In either case, as we will see, the 'perfect' civilisation is achieved only at the cost of denying moral consideration to certain kinds of human.

Before examining these two novels, I will first attempt to trace the ways in which these texts emerge from and respond to the earlier tradition of speculative fiction, by examining their relationship to the works of two earlier authors: Mary Shelley and Jules Verne. After a brief discussion of Shelley's *Frankenstein* (1818), which will be read as a kind of 'urtext' that prefigures many of the posthumanist concerns of SF, I will go on to argue that the influence of Verne and Shelley can be traced in different ways within the works of later authors. In this way, we will identify two distinct lineages of the 'human' that, as we will see, can be traced in SF up until the Second World War.

Two lineages of the human in nineteenth-century SF:
Shelley's *Frankenstein* and Verne's *voyages extraordinaire*

'This manuscript will doubtless afford you the greatest pleasure', writes Marlow Saville to his sister in *Frankenstein*, referring to the pages he has accumulated documenting the strange story of Victor and his long-suffering Creature, 'but to me, who know him, and who hear it from his own lips, with what interest and sympathy I shall read it in some future day!'[4]

The story of Mary Shelley's classic novel is framed as a series of letters written by a young English adventurer who, during an expedition to the North Pole, encounters Frankenstein in pursuit of his Creature across the Arctic wastes, and records the story told to him by this unexpected shipmate. This framing narrative serves two distinct purposes. On the one hand, it presents the narrative to the reader in a vivid fashion, straight from the source as it were, by allowing Frankenstein to record his own tragic descent into obsession and ruin. In this way, it also emphasises the seeming proximity of the bizarre events: the novel's atmosphere of unease and eeriness relies partly on the fact that, like Stoker's Dracula, Frankenstein's uncanny

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[4] Mary Shelley, *Frankenstein, or The Modern Prometheus* [henceforth *FR*], 1818, The Great Writers Library, 1987, p. 20

Creature transgresses, and thereby threatens, the very space of European civility and culture. Hence, although the clashes between Frankenstein and his Creature are staged primarily at the remote reaches of civilisation—at the North Pole, on a glacier in Switzerland, even at one point in a rainy coastal town in Ireland—nevertheless the repercussions generated by the Creature's hostile presence simultaneously extend to the heart of the European justice system, to the courts in which the gentle Justine, wrongly accused of his brutal deeds, is sentenced to death. On the other hand, however, this epistolary form also shields the reader from the story, reassuring them that, though grotesque and horrifying, the recorded events are by now merely historical. By the time word of them reaches civilisation, the bizarre occurrences have already concluded, with the key players dead and the secret of creating life forever lost as a result.

In this way, the structure of *Frankenstein* reflects one of the key early modes of shaping SF—as a tale already ended, or occurring in a remote location, or both—while also anticipating the future preoccupation, given its first sustained expression in Wells's romances, with the technological upheaval of contemporary society. The extent to which Shelley sets the stage for later SF is, of course, widely acknowledged: her classic account of radical scientific possibilities in *Frankenstein* anticipates those of the two most important figures of late nineteenth-century SF, Verne and Wells. More significantly for this study, however, Shelley's foundational text also prefigures the major SF anxiety about how the advance of human scientific understanding might change the very nature of 'nature' itself. This concern is explicitly elucidated by Shelley herself, who writes in the 1818 preface to the novel that the 'event on which this fiction is founded has been supposed … as not of impossible occurrence'.[5] In contrast to the fantastic voyages of her predecessors Swift, Voltaire or Cyrano, Shelley makes it clear that she is not 'merely weaving a series of supernatural terrors', but dealing instead with the real world and some very real possibilities within it.[6]

Darko Suvin has suggested that Shelley's novel can be read as a reaction against the uprooting of traditional political authority as a result of the French Revolution: Frankenstein's horror at his revolting creation reflects the horror of the instigators of the Revolution towards

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[5] Shelley, *FR*, p. 1
[6] Shelley, *FR*, p. 1

the violent and ugly outcomes of their revolutionary zeal.[7] Yet it was not merely in politics that old systems of belief were being overturned in eighteenth- and nineteenth-century European thought. Just as the revolutionaries stripped away what Edmund Burke called the 'decent drapery' of tradition from figures of political authority, so Enlightenment science was slowly demystifying and laying bare the natural world in a hitherto unprecedented way. The new epistemologies and empirical methods that had arisen with the advent of the scientific revolution in the seventeenth century led philosophers to anticipate the ultimate liberation of humankind from the vagaries of unpredictable nature—they sought, as Francis Bacon writes in *The New Atlantis* (1627), not only 'the knowledge of causes, and secret motions of things', but also 'the enlarging of the bounds of human empire, to the effecting of all things possible'.[8] No longer, it seemed, would nature act as an impediment to the progress of humanity. Instead, the natural world would fall into step as a set of objects to be examined and catalogued, or as a resource to be utilised in the realisation of an earthly technological utopia.

In this regard, Frankenstein's dismissal of 'the wild fancies [of] Paracelsus and Albertus Magnus', with their treatises on 'the search for the philosopher's stone and the elixir of life', suggests also a dismissal of outmoded forms of irrational, superstitious, or metaphysical knowledge, and a simultaneous embrace of the positivist worldview slowly taking shape within European thought.[9] Yet, at the same time, Shelley's novel also recoils from the 'sacred duties of humanity' to dissect and comprehend the natural world as these were being propagated by the thinkers of the Enlightenment.[10] *Frankenstein* betrays an uneasiness with the methodical and rationalist mindset championed by Bacon, Kant, and Newton, which, as Shelley writes, 'might dissect, anatomise, and give names', but to which, 'not to speak of a final cause, causes in their secondary and tertiary grades were unknown'.[11] These higher causes could be said to

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[7] Darko Suvin, *Metamorphoses of Science Fiction: on the history and poetics of a genre*, Wesleyan University Press, 1979, pp. 133-134

[8] Francis Bacon, *The New Atlantis*, 1687, par. 54, web, *Project Gutenberg*, www.gutenberg.org/files/2434/2434-h/2434-h.htm, accessed April 2017

[9] Shelley, *FR*, p. 31, 30

[10] Immanuel Kant, 'An Answer to the Question: What Is "Enlightening"?' 1784, *The Age of Enlightenment: an anthology of eighteenth-century texts*, vol. 2, edited by Simon Eliot and Beverley Stern, The Open University Press, 1979, p. 253

[11] Shelley, *FR*, p. 31

include moral and ethical imperatives—categories ignored by Frankenstein to his ultimate doom, but which, the novel suggests, are neglected at the risk of one's physical and spiritual well-being. Even as Frankenstein disrupts natural law to uncover the secret to creating life, there is an abiding sense throughout the novel that, to use the old SF cliché, there are things humanity was never meant, or equipped, to know.

Shelley's own stance towards scientific knowledge thus appears ambiguous. On the one hand, it is clear that the tragedy of Frankenstein's life springs from the unnatural Creature that he fashions, and the violation of natural law that the Creature embodies. This maligned being not only slays the family of his creator, but also strips Frankenstein of his intellectual idealism, leaving him with nothing but a burning desire to destroy the 'wretch whom with such infinite pains [he] had endeavoured to form'.[12] Frankenstein affronts the laws of nature by moulding a living being with his own hands, and pays a fitting price as this unnatural and 'demoniacal corpse' turns on his creator.[13] Such anxieties surrounding the uncanny 'inhuman' being pervade nineteenth-century speculative fiction, from the automaton of E.T.A. Hoffman's 'The Sandman' (1816) and the 'living livid corse' of Polidori's 'The Vampyre' (1819) to the petrified corpse of Poe's 'The Facts in the Case of M. Valdemar' (1845) and the invisible humanoid 'Thing' of Fitz-James O'Brien's 'What Was It? A Mystery' (1859). Such beings, in part like 'us', but also representing our monstrous 'Other', threaten to destabilise the boundaries of the human— 'Distorted, uncouth, and horrible', as O'Brien writes of the invisible creature of his tale, 'but still a man'.[14]

On the other hand, however, it is also clear that the Creature need not have turned out to be as dreadful as he eventually becomes. After all, the rage that drives him is not that of the blundering monster familiar from James Whale's cinematic adaptations of the novel in the 1930s. On the contrary, the Creature of the novel is an eloquent and sensitive being whose initial nature, shaped by his clandestine study of a loving rural family and of classic works of literature, emanates goodwill towards all humanity. It is the malice of those humans who fail

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[12] Shelley, *FR*, p. 51
[13] Shelley, *FR*, p. 52
[14] Fitz-James O'Brien, 'What Was It? A Mystery', 1859, *The Diamond Lens and Other Stories*, Hesperus Press, 2012, p. 97

to penetrate past the Creature's grotesque appearance that fuels his rage, and so the real significance of the being is, paradoxically, to demonstrate the fundamental *in*humanity of ostensibly enlightened thought, which so alienated humanity from the rest of nature as to blind itself to the moral value of anything not recognisably 'human'. As Elaine L. Graham argues, 'the text invites the reader to question the ontological hygiene that might forbid Victor's creature even an adoptive humanity'.[15] The mistreatment of the physically repulsive Creature suggests the symbolic blindness of the 'all-seeing' human, whose 'fatal prejudice' so 'clouds their eyes' that 'where they ought to see a feeling and kind friend, they behold only a detestable monster'.[16]

The Creature, Anne K. Mellor notes, may thus be viewed as 'the sign of the unknown', the Other denied subjectivity whose 'outer appearance' is considered 'a valid index to his inner nature'.[17] Frankenstein's Creature is undeniably a 'monstrous' being, if that term signifies an aberration from the natural order: simultaneously technological and biological, the Creature seems more posthuman than human, wholly unnatural and yet a product of the 'natural' laws of vitality. Yet, measured by the standards of ethics or fellowship, the Creature begins his tragic life as the most 'human' being of all. Like Shelley herself, the Creature is even vegetarian—in opposition to his human counterparts, he does 'not destroy the lamb and the kid to glut [his] appetite'.[18] Both author and Creature reject such 'unnatural habits of life', as the other famous Shelley, in his essay 'A Vindication of Natural Diet' (1813), describes the eating of animal flesh.[19] The real purpose of the Creature, it seems, is to act as a mirror for the rest of humanity, in which they may see reflected the true measure of their orthodox humanist values.

This latter essay is couched partially in evolutionary terms, as Shelley (the poet) attempts to situate the 'origin of man' within 'that of the universe of which he is part'.[20] Indeed,

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[15] Elaine Graham, *Representations of the Post/Human: monsters, aliens, and others in popular culture*, Manchester University Press, 2002, p. 83
[16] Shelley, *FR*, p. 140
[17] Anne K. Mellor, 'Making a "monster": an introduction to *Frankenstein*', *The Cambridge Companion to Mary Shelley*, edited by Esther Schor, Cambridge University Press, 2006, p. 20
[18] Shelley, *FR*, p. 155
[19] Percy Bysshe Shelley, 'A Vindication of Natural Diet', 1813, *The Prose Works of Percy Bysshe Shelley: volume 1*, Clarendon Press, 1993, p. 75
[20] P. Shelley, p. 75

the various permutations of nineteenth-century evolutionary thought—from Erasmus Darwin's (grandfather of Charles) proto-evolutionary *Zoonomia, orThe Laws of Organic Life* (1794-1796), through Jean-Baptiste Lamarck's theory of 'transmutation', outlined in his 1809 work, *Philosophie Zoologique*, to the more famous outlines of 'natural selection' described by Darwin in the mid-nineteenth century[21]—constituted perhaps the greatest assault yet on conventional appraisals of the natural world and humanity's dominion over it. No longer, it seemed, was humanity to be understood as the foremost product of a benevolent deity—instead, evolutionary theory reconstituted human existence as merely another random outcome of a natural process. It is a lesson that Shelley took to heart in her fiction: *Frankenstein*, as Brian Aldiss has argued, is indebted to such an evolutionary worldview, since the 'concept of *Frankenstein* rests on the quasi-evolutionary idea that God is remote or absent from creation: man is therefore free to create his own sub-life'.[22] In her later novel, *The Last Man* (1826), Shelley further condemns the 'arrogance' of humanity that 'we call ourselves lords of the creation, wielders of the elements, masters of life and death' at the same time as 'the visible mechanism of our being is subject to the slightest accident' and humanity may become 'the victim of the destructive powers of exterior [non-human] agents'.[23] Cautioning that humanity should be mindful of its position as just one element within the broader scheme of nature, *The Last Man* resituates life on earth within an expansive universal ontology, invoking an image of a 'beauteous and imperishable universe' filled with 'other spirits, other minds, other perceptive beings', and thus heralding a cosmical mode later developed more fully in the works of Olaf Stapledon, Camille Flammarion, and others.[24] This image is simultaneously tragic and celebratory, and may even be said to constitute a truly posthumanist moment—a shift from *bios* to *zoe*, as it is revealed that the extinction of humanity is not, after all, the extinction of all life, beauty, and meaning.

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[21] For an overview of the history of evolution, see Garland E. Allen, 'The History of Evolutionary Thought', *The Princeton Guide to Evolution*, edited by Jonathan B. Losos et al., Princeton University Press, 2017, pp. 10-23.
[22] Aldiss, p. 29
[23] Mary Shelley, *The Last Man* [henceforth *TLM*], 1826, Wordsworth Classics, 2004, p. 184
[24] Shelley, *TLM*, p. 172

The influence of evolutionary theory is thus evident from the very outset of SF. The reason for this fruitful interplay between theory and literary genre lies perhaps in the shared emphasis on materialism. SF, as Adam Roberts argues, is the literature of materialism: the mode of cognitive extrapolation characteristic of SF 'requires material, physical rationalisation, rather than a supernatural or arbitrary one'.[25] 'This grounding of SF in the material rather than the supernatural', Roberts continues, thus 'becomes one of its key features'—SF is 'a particular coding of the very materiality of science's practices', one which cuts it off from other non-realist genres such as fantasy and folk tales.[26] It is due in part to this commitment to a materialist ontology that SF has lent itself so well to the examination and exploration of ecological, environmentalist and posthumanist problematics, all of which stem from a recognition of humanity's fundamental rootedness in the material-physical world. As we have seen, Shelley's preface asserts that hers was no mere 'supernatural terror', but a realistic extension of scientific possibilities as then understood. Wells expounds a similar materialist position, insisting, in his preface to the 1933 republication of his 'fantasies', that whenever a writer employs an 'impossible hypothesis', she must extract from the reader 'an unwary concession to some plausible assumption', which may be obtained by means of 'an ingenious use of scientific', rather than mystical, 'patter'.[27] By rooting deviations from conventional reality within the material world of science, rather than the transcendent world of mysticism, religion, myth, fairy tale and so on, the author is able also to ground the story in a socially-realistic, rather than fantastical, setting.

Moreover, it is possible to connect the plethora of inhuman 'Others' that populated nineteenth-century fiction to the contemporary emergence of scientific positivism. Istvan Csicsery-Ronay Jr. links 'modern forms of the grotesque'—the undead, vampires, monsters, and other inhuman beings that populated nineteenth-century fiction—to the rise of scientific materialism in Europe. As he argues, since 'technoscience is the guardian of the rational categorization of matter, the grotesque attacks the very rationality that made its apprehension

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[25] Adam Roberts, *Science Fiction: the new critical idiom*, Routledge, 2000, p. 5
[26] Roberts, p. 5, 19
[27] H.G. Wells, 'Preface', 1933, *Seven Famous Novels*, Heinemann/Octopus, 1977, par. 3

possible'.[28] In other words, the aberrant nature of the grotesque—its rejection of 'the abstract divisions and intellectual puritanism' of scientific thought—subverted and thereby threatened the rationalist basis of scientific materialism itself.[29] In this view, Shelley's Creature is not only a product of scientific materialism, but also a repudiation of the abstract categorisation on which such thought rested: neither fully human nor inhuman, the Creature cannot be easily accommodated within the cognitive frameworks and rationalist 'systems of intermeshing laws' of European scientific thought.[30]

Evolutionary theory, too, posits materialism as a necessary precondition for the rationalisation of biological phenomena, rejecting transcendental or idealist causes, and so lends itself to easy incorporation within the ideological frameworks of SF texts. It is no coincidence that, at the historical moment in which evolutionary thought was gaining traction within western scientific thought, the works of Shelley, Poe and Hawthorne were defining an agnostic narrative mode preoccupied with exploring the material and psychological boundaries of human epistemological and ontological experience. The emergence of evolutionary thought also helps to account for the growing preoccupation with travel through time, rather than space, in the speculative fiction of this period. This development has been widely-noted: Jameson, for example, describes a 'well-known shift' in utopian literature of this time, 'from the accounts of exotic travellers to the experiences of visitors to the future', while Suvin describes a similar change in the relative dominance of space and time in SF as a result of the rapid growth of 'capitalism, technology, and the reacting expectations of a radically better or at any rate different future' within eighteenth-century Europe.[31] In part, Suvin argues, this was a result of the growing awareness of the potential for science and technology to radicalise society, to the extent that, if a writer wished to generate a vision of radical social difference, they had only to imagine their own society after a sufficient lapse of time. As such, SF in this period was marked

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[28] Istvan Csicsery-Ronay Jr., *The Seven Beauties of Science Fiction*, Wesleyan University Press, 2008, p. 7
[29] Csicsery-Ronay, pp. 183-4
[30] Csicsery-Ronay, p. 184
[31] Fredric Jameson, *Archaeologies of the Future: the desire called utopia and other science fictions*, Verso, 2005, p. 2; Suvin, p. 117

by a shift from spatial themes—which envisaged alternate societies existing in 'an as yet unknown island', 'a valley behind the mountain ranges', 'a subterranean enclosure', or 'an extrapolated planetary island in the ocean of ether'—to temporal concerns, which imagined *when*, rather than *where*, alternate social structures might exist.[32]

This account of a shift from spatial to temporal SF at first appears inadequate to address the travelogues of the 'Great Frenchman', Jules Verne.[33] Verne's central motif throughout the *voyages extraordinaires* is, as the name suggests, journeys through space. Yet Suvin suggests that time can be 'read' in Verne's works by traversing space, which is treated like a text through which natural history can be deciphered. This is evident, for example, in *Journey to the Centre of the Earth* (1864, henceforth *Journey*), in which Professor Lidenbrock and his nephew Axel literally read the geological history of the earth on the walls of a subterranean Icelandic tunnel. As Suvin argues, the protagonists of Verne's novels experience time not as a forward march of progress, but as circular: the typical Vernian text depicts a journey through space which ends with the protagonist back where he started—more knowledgeable perhaps, but with himself and the world around him basically unchanged. Such a format is evident in *Journey*, but also in *Five Weeks in a Balloon* (1863), *20,000 Leagues Under the Sea* (1870), *Around the World in Eighty Days* (1873), *Off on a Comet* (1877), and the twinned novels *From the Earth to the Moon* (1865) and *Around the Moon* (1870). Hence Marc Angenot describes Verne's works as 'narratives of circulation', with the entire globe laid bare to the pioneering technological subject.[34]

In this light, the failure of Lidenbrock and Axel to actually reach the centre of the world in *Journey* is beside the point, since the circular shape described by the narrative serves to reinforce its ideological foundations. As will be discussed in more detail in relation to *The Lost World*, the need among certain writers to witness or chronicle real progress—that is, fundamental change, development, or discovery—had been diminished by the technical and social accomplishments of nineteenth-century European bourgeois civilisation. This is evident

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[32] Suvin, p. 116
[33] Wells, 'Preface', par. 1
[34] Qtd. in Mark Bould, 'Introduction', *Red Planets: Marxism and science fiction*, edited by Mark Bould and China Miéville, Wesleyan University Press, 2009, p. 5

in the temporal structure of *Journey*: by descending into an extinct volcanic crater in Iceland, only to be regurgitated by an active volcano somewhere in Italy, the two Europeans instead merely describe a circular, rather than progressive, narrative—from descent to ascent, death to life, and wintry bleakness to balmy warmth—that may be safely and endlessly repeated. This structure is underpinned by the mode of scientific mastery that informs Verne's voyages. Verne's exclusively middle-class protagonists project a sense of technical and scientific assurance that enables them to view everything in nature as in some way knowable, obtainable, traversable, or edible. Scientific knowledge, which for Shelley denotes a threat to traditional authority, for Verne instead represents a form of power, specifically a kind of mastery over nature which, as Pierre Macherey notes, comprises 'the *subject* of all Verne's work … Verne's *elementary* obsession'.[35] The desire to name nature, to divide it into segments and place these into a rational and ordered schema, constitutes one of the driving principles in Verne's *voyages extraordinaires*: as he states, he sought to 'survey … the whole world … My object has been to depict the earth, and not the earth alone, but the universe'.[36]

But depictions are never wholly neutral: the space traversed by Verne's characters is marked by geological history, and the voyagers themselves are deeply engaged with the history of human attempts to make sense of the remote past and of life itself. These human attempts to decode and categorise the history of nature consistently take priority over the actual lived reality of nature itself: each new rock strata that is encountered by Lidenbrock and Axel is instantly assimilated into a pre-existing cognitive framework, with the end result that the explorers' journey into the unknown is more appropriately understood as a journey into an always-already-familiar set of scientific preconceptions. While it is true that the encounter with the *truly* unknown—the humanoid creatures found to inhabit the centre of the world, for instance—necessitates the adaptation of these preconceptions to account for previously unrecorded phenomena, the emphasis nevertheless remains the same: whether precedence is

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[35] Pierre Macherey, 'Jules Verne: the faulty narrative', *A Theory of Literary Production*, 1966, Routledge & Kegan Paul, translated by Geoffrey Wall, 1978, p. 166, emphasis in original
[36] R.H. Sherard, 'Jules Verne at Home', *McClure's Magazine*, January 1894, sec. 4, web, *Zvi Har'El's Jules Verne Collection*, edited by Zvi Har'El, jv.gilead.org.il/sherard.html, accessed April 2017

given to rational or empirical epistemologies, the subjugation of the natural-material world to the products of human intellectual endeavour nevertheless remains a consistent feature of Verne's *voyages*.

Hence, for example, on their descent into the Icelandic crater, Lidenbrock and Axel pass through a specifically European account of geological history, which takes them 'through rocks of the transitional period, the Silurian Period', through the 'whole history of the coal period … which preceded the Secondary Period'. [37] Indeed, the very course of their trek into the planet allows Lidenbrock and Axel to weigh the merits of two rival theories regarding the formation of the earth. As the days pass, their journey eventually takes the form of a literal chronicle of progress, culminating in humanity, as they trace the very history of the earth on the walls of their tunnel:

> Creation had obviously made considerable progress since the previous day. Instead of the more rudimentary trilobites, I noticed remains of a more advanced order of creatures, including ganoid fishes and some of those saurians in which palaeontologists have detected the earliest reptile forms. … It was becoming obvious that we were climbing the ladder of animal life on which man occupies the highest rung.[38]

Axel's implied mastery of scientific discourse here suggests the ability not only to name nature, but also to impose meaning on historical time—in Heideggerian terms, Axel 'enframes' natural time such that, perceived through the lens of European scientific thought, the history of nature takes the form not of infinite progression into the future, but of ascension with a definite endpoint, the 'highest rung' of which has already been attained by European humanity.

Thus geological time itself is deployed in the service of a narrative of European teleology, while space is reconceptualised as a temporal category that allows privileged subjects to chart a course through natural history. This applies even where space appears to be the more vital category: Phileas Fogg's journey around the world, for example, can only meaningfully be quantified, not in miles, but in days, hours, and minutes. Fogg takes careful note not of the distance clocked up, but of the time elapsed as the journey goes on. This journey takes him through a series of homogenous and interchangeable spaces—the 'hospitals, wharves

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[37] Verne, *Journey*, p. 117, 122
[38] Verne, *Journey*, pp. 120-1

[and] macadamized streets'—which give even so distant a place as Hong Kong 'the appearance of a town in Kent or Surrey'.[39] The tangible experience of material space is thus nullified—Fogg's circumnavigation of the globe is even undertaken, for the most part, in relative luxury, by means of global British railway and shipping networks. In *Twenty Thousand Leagues Under the Sea*, too, as Mark Bould argues, Nemo's Nautilus enables the reduction of 'all materiality to a space of undifferentiated flow'.[40] As a result, the tangible experience of space may, through technological means, be annulled. Following his eighty-day voyage, Fogg returns, as do many Vernian protagonists, to the same world he left behind, his journey complete and ready to be repeated at will. Time in the novel, then, for all the characters' preoccupations with it, is not chronological but cyclical—not a meaningful marker of change but merely a convenient and rational means of marking empty duration—while the human in Verne's works is descended directly from the figures of Enlightenment humanism, whose motto is supplied by Kant: '*Sapere aude!* [Dare to know!]'[41]

We can thus see the emergence of two distinct lineages of the human in the SF of the nineteenth century—two lines of descent that, as we will see, can be usefully deployed to conceptualise the human in SF right up to the Second World War. The first originates with Shelley, whose scepticism regarding the perceived benefits of the Enlightenment project of scientific rationalism and the legitimacy of a human-centred view of the universe can also be detected, as we saw in the previous chapter, in Wells's scientific romances. The second is seen in the *voyages* of Verne, which substitute positivist scientific imperialism for existential doubt, and champion an Enlightenment conception of reason as the site and source of all knowledge and progress. Of the two, it is the former that offers the greater potential for the emergence and development of posthumanist functions. Indeed, we have seen that Shelley's *The Last Man* ends by invoking a transformative image of extra-terrestrial life that gestures towards a radically nonhuman epistemological and ontological cosmic framework, although the very title of her work indicates that Shelley's anxieties ultimately remain tied to the fate of earthly

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[39] Jules Verne, *Around the World in Eighty Days*, 1873, Penguin Popular Classics, 1994, p. 115
[40] Bould, p. 10
[41] Kant, p. 250

humanity. Nevertheless, the poignant image of human extinction that closes Shelley's novel clearly registers a very different set of humanist preoccupations than those evoked by Verne's assimilative vision of humanity as the 'highest rung' of evolution, wherein the epistemological and empirical capacities of humanity come to subsume all of the nonhuman world within pre-existing systems of objective thought. In the rest of this chapter, we will begin the task of tracing out these two lineages of the human in twentieth-century SF, beginning first with Conan Doyle's *The Lost World*.

Three forms of humanity in Conan Doyle's *The Lost World*

Conan Doyle is in many ways a spiritual successor to Verne, incorporating the same blend of imaginative science and adventure into unknown lands that characterises Verne's *voyages*. This influence of the Frenchman—whom Conan Doyle had eagerly read in his youth[42]—and the literary model that he handed down is crucial to understanding the temporal and spatial structures of *The Lost World*, and its corresponding conception of human nature. Conan Doyle's novel is a key example, like Verne's *Journey*, of the 'lost world' or 'lost race' genre of speculative fiction, which came to prominence in European literature from roughly the mid-nineteenth century onwards. Lost-world fiction provided an important narrative framework for early SF, and was a key testing ground for ideas and motifs that would later become central to the genre.

As Everett F. Bailer notes, however, although *The Lost World* can thus be considered 'one of the patterning works of science fiction', it has not received much critical attention, particularly when compared to the voluminous scholarly output on Conan Doyle's most famous literary creation, Sherlock Holmes.[43] This may be due partially to what Randy Hayman has described as the 'hideous political incorrectness of the work—its racism, sexism, and imperialism'.[44] It is indeed difficult to counter such accusations: the novel, as with much

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[42] See Arthur Conan Doyle, *A Life in Letters* [henceforth *LL*], edited by Jon Lellenberg, Daniel Stashower, and Charles Foley, Harper Perennial, 2008, pp. 53-54

[43] Everett F. Bailer, 'Review: Lost Worlds and Lost Opportunities: *The Annotated Lost World. The classic adventure novel* by Arthur Conan Doyle', *Science Fiction Studies*, vol. 23, no. 3, 1996, p. 358

[44] Randy Hayman, 'Review: Tips for Lost Students: *The Lost World* by Arthur Conan Doyle',

popular fiction produced in Europe at the turn of the twentieth century, incorporates a comprehensive range of crude racial stereotypes. 'Among the book's dramatis personae', as Michael Dirda remarks, 'one finds easily spooked native bearers, traitorous half-breeds, and even a gigantic negro named Zambo, ever loyal to his "Massa"', all of which contribute to an unattractive air of imperial arrogance typical of much of Conan Doyle's fiction.[45] Despite these dated colonial characterisations and the dearth of critical writing on the novel, however, Conan Doyle remains an important figure within a line of speculative authors—including Poe, Verne, Edward Bulwer-Lytton, Samuel Butler, H. Rider Haggard, Wells, Charlotte Perkins Gilman, Edgar Rice Burroughs, and A. Merritt, to name only the most familiar examples—whose works of lost world fiction explore nineteenth- and early twentieth-century ideas of humanity, nature, and technology in far-reaching and complex ways.

The Lost World centres on the character of Professor Challenger, a brilliant yet bullish English scientist who appears in several of Conan Doyle's speculative works. Alongside three companions—the gentleman adventurer John Roxton, irritable Professor Summerlee, and Anglo-Irish journalist Edward Malone, whose journals and letters to his editor form the bulk of the novel—Challenger embarks on a journey from London to the rainforests of Brazil in search of a hidden plateau rumoured to be home to a range of biological and geological marvels. After a series of trials and setbacks, the four adventurers eventually succeed in locating and scaling the plateau, where they encounter a collection of archaic creatures, among them carnivorous bipeds, pterodactyls, and iguanodons. They also quickly find themselves swept up into an ongoing war between a race of 'ape-men' and a tribe of native 'Indians' over control of the plateau. The Englishmen take it on themselves to aid the losing Indians in their fight for survival, assisting their new-found allies to defeat the ape-men before escaping from the plateau by means of a secret tunnel leading to the base of the structure. Arriving back in London to great acclaim, Malone and Roxton begin making immediate plans to return, this time with their eyes fixed on the plateau's rich supply of diamonds.

Science Fiction Studies, vol. 32, no. 3, 2005, p. 516

[45] Michael Dirda, On Conan Doyle: Or, The Whole Art of Storytelling, Princeton University Press, 2011, p. 36

As we will see, *The Lost World* demonstrates a clear preoccupation with evolutionary themes, which may be linked to the discourses of social Darwinism proliferating within European thought in the latter half of the nineteenth century. Such discourses, as R.J. Halliday notes, provided a useful intellectual justification for imperialist practices, since the eugenicist, and often genocidal, results of such practices could be re-articulated as the 'natural' outcomes of racial competition, and as expressions of hereditary qualities of evolutionary 'fitness' and 'unfitness' in relation to different human 'types'.[46] Indeed, in a later Challenger story, *The Poison Belt* (1913), Conan Doyle provides a positive cartographic hierarchy of world races. As the extra-terrestrial poison gas 'daturon' spreads across the globe, 'the less developed races', he writes, are 'the first to respond to its influence'.[47] While 'India and Persia … Africa, and the Australian aborigines' succumb instantly, the 'Northern races', conversely, demonstrate 'greater resisting power'.[48]

Yet the principle of Darwinism also introduces conceptual problems of its own to a European cultural framework founded on an ontological division of humanity from nature: by revising human history in biological terms, evolution resituates humanity within a broader framework of *natural*, as opposed to strictly *human*, history. This recontextualisation of human history has, I argue, an ambiguous impact on the conceptual relationship between humanity and nature that informs Conan Doyle's novel, and indeed much nineteenth- and early twentieth-century lost-world fiction. Specifically, it generates a tension between, on the one hand, an ideological view of the rational human as the 'natural' endpoint of evolutionary history and, on the other, a desire to maintain moral and ontological distinctions between what is 'human' and what is not. These are distinctions that underpinned contemporary cultural production and imperialist practices.

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[46] See R.J. Halliday, 'Social Darwinism: a definition', *Victorian Studies*, vol. 14, no. 4, 1971, pp. 389-405; see also Kenneth Wilson, 'Fiction and Empire: the case of Sir Arthur Conan Doyle', *Victorian Review*, vol. 19, no.1, 1993, pp. 31-32

[47] Arthur Conan Doyle, *The Poison Belt* [henceforth *PB*], 1913, *The Lost World and Other Stories* [henceforth *LWOS*], Wordsworth Classics, 2010, p. 187

[48] Doyle, *PB*, p. 187

This tension is evident in *The Lost World* in the interactions between the three 'kinds' of humanity that populate the novel: the adventurers, the Indians, and the ape-men. Pramod K. Nayar argues that, 'armed with biological theories about the inferiority of the black races, European colonials relegated … Africans to the domain of the non-human and the animal'.[49] I will make a slightly different argument with regard to *The Lost World*. The latter two kinds of human figure in the novel not as non-human, but as *pre*-humans—that is, as ostensibly 'primitive' humans who lack the technological and intellectual sophistication of their 'superior' European counterparts, and are thus not afforded the same level of moral consideration, but who are also not conceived of as utterly alien or 'Other' to the European adventurers. The imperial trope of construing native populations as remnants of the human past results in a conceptual division of humanity into more and less advanced 'types', with the pre-human figuring as ontologically 'closer' to nature than the 'fully' human Europeans. At the same time, the novel does acknowledge an essential kinship between Europeans and natives: they form part of the same evolutionary line, a recognition which situates them somewhere inside the opposition of 'the self and the Other' identified by Patricia Kerslake as a central icon of imperial SF.[50] The novel, I argue, deploys the pre-human in an attempt to regulate natural history so as to account for European imperial civilisation as the product of a 'natural' process—since it has its 'roots' in evolutionary processes—while also salvaging a universalist conception of human nature as morally 'higher' than the rest of nature. The annihilation of the ape-men can thus be understood as a symbolic purging of the 'bad' pre-human from human history—a purging that, as we will see, also mirrors Conan Doyle's distinction between the 'good' and 'bad' practices of European imperialism.

We begin this analysis by examining the temporal structure of the novel, which, like those of Verne's *voyages*, is indebted to an evolutionary framework. Indeed, even from the brief description given above, the resemblances to Verne's works are evident. Like the *voyages*, *The Lost World* is a narrative of circulation, taking the reader from the society of upper-class

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[49] Pramod K. Nayar, *Posthumanism*, Polity Press, 2014, p. 42
[50] Patricia Kerslake, *Science Fiction and Empire*, 2007, Liverpool University Press, 2010, pp. 8-24

London to the rainforests of South America and back again. Like the *voyages*, space in the novel becomes, to some extent, intangible: though the trek through the Amazon rainforest is long and fraught with difficulty, nevertheless the efficiency of the globalised shipping network, and the willing aid of the obsequious Brazilian natives, ensure that Malone's letters to London always arrive in time for publication. And like the *voyages*, this spatial expedition takes on temporal significance, as the quartet travel not only to the opposite side of the world but also back in time through natural history, in a manner even more explicit than Verne's *Journey*.

This temporal framework, Kenneth Wilson argues, is in part a consequence of the continued expansion of European imperialist practice, which by the time of Conan Doyle's novel had in effect entirely colonised the physical space of the non-European world and, apparently, left no room for narratives of infinite discovery. Conan Doyle's adventurers, Wilson remarks, are simply 'a generation too late': as Malone's editor puts it, the 'big blank spaces on the map are all being filled in, and there's no room for romance anywhere'.[51] Conan Doyle himself, echoing Conrad's Marlow, even laments that the 'romance writer' no longer knew where to turn 'when he wants to draw any vague and not too clearly defined region', given the reduction of those tantalising 'blank spaces' to a set of rigidly defined colonial territories.[52]

The solution to the problems generated by this dwindling of space were to be found in the Darwinian past, which provided an inexhaustible imaginative resource for imperialist adventure and speculation. As Wilson remarks, by transposing temporal qualities onto space, the 'journey from metropolis to frontier' is thus changed into 'a journey into the distant past'.[53] In this way, John Rieder argues, *The Lost World* 'makes explicit the paradigmatic basis of colonial expeditionary science … by viewing the plateau primarily as a living record of "our" own past'.[54] The journey of the adventurers takes the form of an adventure not *in* time, but

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[51] Wilson, p. 30; Arthur Conan Doyle, *The Lost World* [henceforth *LW*], 1912, *LWOS*, p. 8
[52] Quoted in Philip Gooden, 'Introduction', Arthur Conan Doyle, *The Lost World and Other Thrilling Tales*, Penguin Books, 2001, p. vii
[53] Wilson, p. 31
[54] John Rieder, *Colonialism and the Emergence of Science Fiction*, Wesleyan University Press, 2008, p. 58

literally *into* time, which is read through space: from the modern urbanity of London to the Jurassic period of the plateau, time in *The Lost World*, as in Verne's *voyages*, is explored as a dimension of space.

This preoccupation with the Darwinian past is most clearly evident in the novel's treatment of the scientific discourse. The two quarrelling professors, Challenger and Summerlee, call to mind the learned protagonists of Verne's travelogues, and indeed Conan Doyle's work occasionally surrenders plot in favour of the kind of scientific cataloguing that comprises much of Verne's *oeuvre*. Much of the comic relief in the novel, for example, derives from the abstruse and ill-timed quarrels between Challenger and Summerlee as they debate some classificatory minutiae, 'as comprehensible' to Malone and Roxton, and presumably to the reader, 'as Chinese to the layman'.[55] This scientific angle, however, also reflects Conan Doyle's own preoccupations with natural history. *The Lost World* arose in part from Conan Doyle's interest in paleontological exploration, and from his fascination with discovering clues to the remote past within the very soil of his native Britain.[56] A trained medical doctor, Conan Doyle had a lifelong interest in scientific affairs, and in the years leading up to 1912 had become involved, albeit without much success, in numerous archaeological excavations in the countryside of south-east England in search of dinosaur fossils. This preoccupation influences much of his fiction: 'The Terror of Blue John Gap' (1910), for example, centres on a convalescent doctor 'of a sober and scientific turn of mind' who encounters a prehistoric 'old cave-bear' in the unlikely locality of South Kensington.[57] This interest in turn fed into the meticulous attention to detail paid by Conan Doyle to matters of scientific accuracy, even within the speculative frameworks of his romantic adventure fiction. Indeed, biographer Andrew Lycett defends Conan Doyle from charges of involvement in the famous 'Piltdown Man' scandal of 1912 precisely on the basis that his own spirit of scientific integrity would not

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[55] Conan Doyle, *LW*, p. 74

[56] The original germ of the novel can in fact be traced further back than this, to the influence on Conan Doyle of the adventure novels of H. Rider Haggard. See Doyle, *LL*, p. 577

[57] Arthur Conan Doyle, 'The Terror of Blue John Gap', 1910, *Tales of Unease*, edited by David Stuart Davies, Wordsworth Editions, 2000, p. 99, 113

allow him to become involved in such an unscientific practice as forgery.[58] After publication of *The Lost World*, as Lycett notes, Conan Doyle was even contacted by 'the former head of the Natural History section of the British Museum', who congratulated him on the accuracy and plausibility of his story.[59] Given these efforts at scientific verisimilitude—as well as journalistic authenticity, as suggested by the staged photographs originally published alongside the story in *The Strand Magazine*, with a heavily bearded Conan Doyle in the role of Challenger [60]—*The Lost World* may thus be read as Conan Doyle's own imaginative contribution to paleontological history.[61]

This reading is given particular significance by the fact that scientific knowledge in *The Lost World* represents more than a reserve of objective facts to be debated by eccentric academics. Rather, it is a means to classify, categorise and, most importantly, hierarchise the human and non-human worlds, and to impose an ideological pattern on the form of the natural past. Even before leaving London, Challenger exercises his scientific authority over the plateau by accounting for its very existence in terms of European geological discourse: it is, he declares, 'basaltic, and therefore plutonic', the result of 'a great, sudden volcanic upheaval'.[62] Later, he takes it on himself to christen it 'Maple White Land' after its original British discoverer, thereby reimagining the plateau in terms more familiar to the British spatial imagination.[63] The scientific tradition thus supplies a lens through which Conan Doyle's characters may view

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[58] The 'Piltdown Man' is the name given to a paleontological incident in 1912 in which a skull fragment, found in Piltdown in Sussex, was alleged to belong to a previously unknown hominid species, thought to be the fabled 'missing link' between apes and humans. The sensational findings were immediately questioned, and in 1953 the Piltdown Man was exposed as a hoax. Conan Doyle was, for various reasons, one of a number of individuals suspected as possible perpetrators of the forgery. For a discussion of the merits of this accusation, and of Conan Doyle's experiences in palaeontology and archaeology, see Andrew Lycett, *Arthur Conan Doyle: the man who created Sherlock Holmes*, Kindle edition, Phoenix, 2008, ch. 18
[59] See Lycett, ch. 18
[60] For an example of these photographs, see Conan Doyle, *LL*, p. 583. Some contemporary editions of the novel also include these—see Arthur Conan Doyle, *The Lost World and Other Thrilling Tales*, Penguin Books, 2001.
[61] Amy R. Wong has recently made a similar argument concerning the journalistic pretensions of *The Lost World*—see Amy R. Wong, 'Arthur Conan Doyle's "Great New Adventure Story": journalism in *The Lost World*', *Studies in the Novel*, vol. 47, no. 1, 2015, pp. 60-79
[62] Conan Doyle, *LW*, p. 29
[63] Conan Doyle, *LW*, p. 84

natural history and the natural world within specifically European terms. Indeed, the ideological end to which Darwinian science is put in Conan Doyle's novel is, as Bradley Deane indicates, even more explicit than in Verne's works:

> The primitive in Doyle's adventure is more expressly Darwinian than those of his predecessors, since the lost world in this case is a plateau stalked by dinosaurs and malevolent ape-men who approximate the fabled 'missing link'. ... The British men also discover a tribe of Indians on the plateau, and they identify with these men as representatives of the human struggle against the beasts in evolutionary history. With these 'savage allies' ... the British conduct a war of extermination against the ape-men, decisively establishing the supremacy of man on the plateau.[64]

The power of the European mind to determine the shape of natural history is thus given literal dramatisation, as Conan Doyle's adventurers, rifles in hand, aid the Indians in securing evolutionary control over the plateau by exterminating the ape-men.

The ideological bent of the novel in this respect could hardly be more obvious: as Wilson notes, 'if the text leaves no doubt that the world is a better place without the ape-men, neither does it leave any doubt that the Indians needed European help'.[65] 'The adventurers', he goes on, 'thus represent both faces of the colonial project: the civilizing mission and the conquering force'.[66] The role of the contemporary Englishmen in liberating the Indians—their symbolic ancestors—from the oppression of nature is useful in understanding Conan Doyle's humanist attitudes. The adventurers, in this view, are not intruders in a foreign land but heroes, while the South American natives are depicted as only too willing to accept imperial aid in order to better their own lives, an example of what Edward Said has termed the 'imagined history of Western endowments and free hand-outs' evident in much imperialist fiction.[67] Following the vanquishing of the ape-men, Malone even describes the Indians as 'our devoted slaves … they looked on us as supermen'.[68] This depiction of grateful natives lying down before the British explorers allows Conan Doyle—an unabashed 'Imperialist'[69]—to re-imagine

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[64] Deane, p. 211
[65] Wilson, p. 32
[66] Wilson, p. 32
[67] Edward Said, *Culture and Imperialism*, 1993, Vintage Books, 1994, p. 24
[68] Conan Doyle, *LW*, p. 142
[69] Conan Doyle, *LL*, p. 579n

the role of the British empire within non-European space as a positive force for good, while also naturalising the unequal power exchange between coloniser and colonised by sketching it in specifically evolutionary terms.

Of particular interest in this regard is the novel's complex attitude towards violence and barbarism. In one sense, *The Lost World* revels in the gory side of nature, an enthusiasm evident in the heady depictions both of the carnivorous dinosaurs with whom the Indians share the plateau and the ape-men who seek ultimately to conquer them. Both dinosaurs and ape-men symbolise in different ways the bloody underbelly of natural evolution, in which being turns on living being in a grisly struggle for existence. Significantly, however, these violent characteristics are not limited to the purely 'natural' beings of the work. As Deane notes, Conan Doyle's novel forms part of a cultural trend in the late nineteenth century in which 'middle-class masculinity began to drift away from the domestic values that had anchored it for decades'.[70] In place of these traditional values, there developed instead a trend towards a more 'primitive masculinity' that valued physical strength, ruggedness, and adventure.[71] Within such discourses:

> atavism becomes a sign of strength rather than of weakness or criminality; impulse and irrationality can be taken for passionate masculine authenticity; and regression—even the relapse into barbarism—offers an empowering fantasy rather than a paralyzing anxiety … lost world novels generally depict modern men discovering that barbarians of any number of races may be as manly as themselves (or even more so), and that Victorians can only express their potential manhood by converging with the primitive.[72]

Conan Doyle was a strong proponent of such physicality. A large and physically imposing man, he was also an enthusiastic cricketer and hunter throughout his life, and prided himself on having, as he put it, 'perhaps the strongest influence over young men, especially young athletic men, of anyone in England (bar Kipling)'.[73] It was partly this perceived influence over the young manhood of Britain that influenced his decision, at the age of forty, to enlist in the Boer War as part of the medical corps. His fiction in turn routinely focusses on themes of physical

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[70] Deane, p. 212
[71] Deane, p. 213
[72] Deane, p. 207
[73] Conan Doyle, *LL*, p. 434

prowess and bloody endeavour. In the historical novels *The White Company* (1891) and *Sir Nigel* (1906), for example, Conan Doyle paints an openly nostalgic picture of patriotic violence and soldierly conquest in fourteenth-century England, while even the cerebral Holmes was not above the occasional fistfight, being 'an expert singlestick player, boxer, and swordsman'.[74]

In *The Lost World*, this trend is evident in the characters of Malone, a prepossessing figure who plays rugby for Ireland, and Roxton, a keen hunter and adventurer ostensibly modelled on the Irish diplomat and revolutionary republican Roger Casement.[75] Yet such primitive masculinity finds perhaps its most sustained expression in the character of Professor Challenger. In part inspired by one of Conan Doyle's own professors in Edinburgh University, Challenger is at once 'famous zoologist' and physical behemoth[76]—equally capable of imparting 'mental' and 'physical shocks' to those unfortunate enough to cross him, and equally at home in the laboratory or the jungle trail, classroom or rainforest.[77] Variously described as 'an Assyrian bull', a 'bull-dog', and even a 'bull-frog', the professor boasts a 'huge spread of shoulders and a chest like a barrel', 'two enormous hands covered with long black hair', and 'a bellowing, roaring, rumbling voice'.[78] His actions, furthermore, accord with his animalistic appearance: Challenger's first meeting with Malone results in a physical scuffle between the two, while his response to the subsequent complaints of his wife regarding his boorish behaviour is to physically restrain her, picking her up as one would a child and depositing her on a high stool.[79]

The character of Challenger is thus inseparable from his sheer physical exuberance: as Malone puts it in a late story, 'When the World Screamed' (1928), Challenger is, at heart, simply 'a primitive caveman in a lounge suit'.[80] This description takes on greater significance when set alongside Challenger's resemblance to the king of the ape-men in *The Lost World*:

[74] Arthur Conan Doyle, *A Study in Scarlet*, 1887, *Sherlock Holmes: the complete stories*, Wordsworth Editions, 2006, p. 21

[75] See Conan Doyle, *LL*, p. 578, and Catherine Wynne, *The Colonial Conan Doyle: British imperialism, Irish nationalism, and the gothic*, Greenwood Press, 2002, pp. 91

[76] Conan Doyle, *LW*, p. 8

[77] Conan Doyle, *LW*, p. 30

[78] Conan Doyle, *LW*, p. 15

[79] Conan Doyle, *LW*, p. 19

[80] Arthur Conan Doyle, 'When the World Screamed', 1928, *LWOS*, p. 424

their likeness, as Malone writes, is one of 'absurd parody', with the two differing physically only in the shape of their respective skulls.[81] These latter descriptions are significant insofar as they frame Challenger as an example of human atavism—a relic whose physical characteristics and turbulent personality belong more properly to an earlier stage in natural history. Nor is he alone in this quality: in their climactic battle with the ape-men on the plateau, each of the adventurers discovers within himself the 'strange red depths' to be found 'in the soul of the most commonplace man'.[82] During the course of the battle, Malone describes the 'blood lust' that wells up inside the adventurers, who consequently find themselves 'cheering and yelling with pure ferocity and joy of slaughter' as they systematically exterminate the ape-men.[83]

This atavistic regression of the warring adventurers, and the physical likeness between Challenger and the king of the ape-men, could be understood in one sense as reflecting the same anxiety expressed in such works as Stevenson's *Strange Case of Dr. Jekyll and Mr. Hyde* (1886) and Stoker's *Dracula* (1897). All of these narratives are to some extent concerned with the alarming possibility that human rationality is merely a veneer concealing a suppressed 'animal' nature. Certainly, as Malone writes, 'It needed a robust faith in the end'—the liberation of the Indians—'to justify such tragic means': the wholesale slaughter or enslavement of the population of ape-men.[84]

Yet the novel *does* find the means to justify this violence, in two distinct ways. Firstly, it is significant that the atavistic resurgence of animal tendencies within humanity unfolds not within the cultured space of London, but in the wilderness of South America. Indeed, whenever this impulse towards physical violence emerges within civilised society, as it frequently does where Challenger is concerned, it is severely censured. Within ostensibly *un*civilised space, however, violence becomes an appropriate moral response to a wide variety of events. As Lewis Mumford remarks, imperialism provided 'a great safety valve for the aboriginal human impulses' denied expression in the 'new urban environment' and 'methodical urban routine' of the metropolis, whose populations turned instead to 'the raw, unexplored, and relatively

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[81] Conan Doyle, *LW*, p. 123
[82] Conan Doyle, *LW*, p. 124
[83] Conan Doyle, *LW*, p. 124
[84] Conan Doyle, *LW*, p. 137

uncultivated regions of America and Africa' in order to act out fantasies of primitivism.[85] In the case of *The Lost World*, this suggests that the spatial schema of the novel can be understood as expressing a kind of normative cartography, in which codes of behaviour governing characters' actions become contingent on their physical location. This connection is perhaps best viewed in the character of Roxton. In contrast to the undisciplined outbursts of Challenger, Roxton's violent propensities are governed by a set of strict protocols dictated, significantly, by the space in which he happens to be. While in Britain, only the controlled violence of such a sport as rugby—'the manliest game we have left'—or hunting, of which Conan Doyle himself was a practitioner, are permissible.[86] In contrast, 'the great waste lands and the wide spaces' at the frontiers of imperialist expansion offer suitable arenas in which the imperial adventurer, with 'a gun in my fist and somethin' to look for that's worth findin', may exercise a propensity for barbaric action denied him in the 'soft and dull and comfy' centres of civilisation.[87]

Hence Roxton, years before the expedition, had single-handedly slain a group of 'slave-drivers' in Peru, in a war '[d]eclared … waged … and ended' by him alone in the name of 'human right and justice'.[88] Such vigilante justice—punishable by law when attempted in Britain, as Jefferson Hope in *A Study in Scarlet* (1888) discovers to his detriment—is conversely applauded when conducted at the outskirts of empire. Roxton's initial interest in the expedition to the plateau is sparked by the promise of the 'huntin' of beasts that look like a lobster-supper dream', and it is also he who is most eager to slaughter the ape-men in the climactic battle of the plateau. South America here functions not merely as a blank and uncivilised space in which a writer may situate their fantastic fictions, but specifically as a *de-civilising* space in which a repressed European impulse towards irrational violence may be given free rein and, furthermore, reinvested with a moral purpose. This is a schema often repeated in Conan Doyle's fiction: in the structure of the Sherlock Holmes stories, for example, in which the most brutal or grotesque episodes of the narratives are often relocated to the outskirts of empire or, in a number of works, to the gothic landscapes of the American West.

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[85] Lewis Mumford, *Technics and Civilization*, 1934, Harbringer Books, 1963, p. 295
[86] Conan Doyle, *LW*, p. 43
[87] Conan Doyle, *LW*, p. 45
[88] Conan Doyle, *LW*, p. 44

Secondly, and at the same time, the novel also makes clear that acts of violence are not to be undertaken for their own sake, but must instead be directed and shaped by a European moral framework—'that great wall of individual responsibility', as Haggard writes in *She* (1887), 'that marks off mankind from the beasts'.[89] In this, Conan Doyle drew on a nineteenth-century tradition of humanist thought that saw morality as a direct outcome of the processes of evolution. As Maurice Mandelbaum argues, thinkers such as Spencer, T.H. Huxley and Darwin stressed the possibility of the natural cultivation of morality among humans, a process 'which involved a transformation of men from a condition in which they were dominated by appetite and instinct, to a condition in which knowledge, taste, and a feeling of being at one with others, were the sources of their fullest enjoyment'.[90] Darwin, for example, saw morality as the result of the development of social instincts among the 'higher' animals, with such instincts leading to a higher chance of survival, and even coming to be more powerful than carnal drives—a notion which leads naturally to a conception of morality centred on 'the general good of the group'.[91]

This perception of morality as a 'higher' natural principle helps to account for Conan Doyle's inconsistent response to violent acts within *The Lost World*. Although, as Malone writes, it was 'a staggering and fearsome thought' that the dinosaurs of the plateau should 'deliberately track and hunt down the predominant human', he recognises that these beings cannot be blamed for their transgressions: they are, after all, 'practically brainless', and so cannot be punished for lacking the higher sentiment of moral feeling.[92] In contrast to the reptiles, the ape-men are simply violent without reason, routinely flinging their captured Indian prisoners from the edge of the plateau onto a forest of sharp bamboos, not for natural or social benefit, but merely for the sake of cruel sport. The adventurers ostensibly refuse to tolerate such violence—just as Conan Doyle himself refused to tolerate 'unrestrained' violence when employed by Europeans in the furtherance of imperial aims. It is significant that, in the years preceding the publication of *The Lost World*, Conan Doyle had become involved in an energetic

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[89] H. Rider Haggard, *She*, 1887, Penguin Popular Classics, 1994, p. 197
[90] Mandelbaum, p. 214
[91] Mandelbaum, p. 227
[92] Conan Doyle, *LW*, p. 110, 112

campaign against the genocidal practices of the Congo Free State. Like Conrad, Conan Doyle was a frequent and vocal critic of the actions of King Leopold II in Africa, even going so far as to publish a widely circulated pamphlet on the topic in 1909 entitled *The Crime of the Congo*.[93] In contrast to the perceived civilising mission of the British Empire, under which 'great nations' may flourish 'under the same flag with the same language and destinies', the genocide and slavery presided over by Leopold constituted the 'greatest crime ever committed in the history of the world'.[94] And what is worse, Conan Doyle goes on, is that 'all this has been tolerated in an age of progress'.[95]

Hence, although *The Lost World*, as he wrote to Roger Casement in 1911, was 'frankly Jules Verney and fantastic so that no sober cause could be the better for it', it is nevertheless difficult not to read the novel as a symbolic act of imperialist moral redemption.[96] The 'chief thing' to be considered by any empire, Conan Doyle remarks, is its 'moral responsibility' to native populations—thus *The Lost World* ennobles its British protagonists while rebuking the ape-men for their lack of moral consideration towards the Indians. It is in this light that the slaughter of the ape-men can most fruitfully be read: not as technological genocide of a weaker people by a stronger, but as an evolutionary cleansing of a 'bad' imperialist civilisation that failed to develop the 'correct' moral sentiments. Like Haggard's Ayesha, 'unshackled by a moral sense of right and wrong', the ape-men thus find their amorality visited back on them in a disturbing and violent manner.[97]

Here again we can see Conan Doyle's vision of imperialism as a fundamental force for good, and of the normative construction of human nature in his works. Even in their slaughter of the ape-men, the adventurers ultimately remain above the level of the nature surrounding them, since their actions are driven, in the final analysis, by *moral* concerns. As Roxton states,

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[93] Conan Doyle, *LL*, p. 562-563

[94] Arthur Conan Doyle, *Memories and Adventures*, 1924, Cambridge University Press, 2012, p. 310; Conan Doyle, *LL*, p. 562

[95] Arthur Conan Doyle, *The Crime of the Congo*, 1909, ch. 8, web, *The Arthur Conan Doyle Encyclopedia*, http://www.arthur-conan-doyle.com/index.php?title=The_Crime_of_the_Congo, accessed May 2017

[96] Quoted in Wynne, p. 109

[97] Haggard, p. 197

by 'clear[ing] out the whole infernal gang' of the ape-men, the Englishmen were simply leaving the plateau 'a bit cleaner than [they] found it'.[98] Their massacre of the ape-men is thus conceived as a fundamentally moral act—motivated not simply by the violent actions of the ape-men, but rather by the fact that the violence interrupted and eliminated by the explorers is apparently lacking in any ethical or natural purpose.

In contrast to the amoral barbarism of the ape-men, the immediate affinity established between the explorers and the Indians—their physical resemblance, as well as their improbable ability to 'converse' through gestures and facial expressions—suggests a submerged kinship between these two groups. As Deane notes, the text here demonstrates a common trope of lost-world fiction: 'the notion of a forgotten shared identity' between colonisers and colonised, 'so that differences between peoples can be regarded as circumstantial rather than ontological'.[99] At heart, the novel seems to suggest, we are all—'primitive' and 'civilised' alike—one and the same human species with the same desires and fears. This is a trope traceable throughout lost-world fiction, from the Amahagger of Haggard's *She* to the Martians of Burroughs' *A Princess of Mars* (1912) and the *ladala* of A. Merritt's *The Moon Pool* (1919).

The Indians' aversion to useless violence, furthermore, suggests that the moral impulse that runs through the adventurers, guiding and shaping their violent tendencies, is rooted in evolutionary biology—a shared trait that has survived through the ages. In fact, it appears that the only difference separating the adventurers from the primitive Indians is the fledgling condition of the latter's technology: they do not lack the will to defeat the ape-men, but merely the means, which arrive in the form of sturdy European rifles. The destruction of the ape-men can even be understood, in this light, as an extreme example of modernist creative destruction at work: in order for the Indians to 'escape' from the natural world of the plateau, the old irrational order of nature must be destroyed, and they themselves advanced to the top of the natural hierarchy as a result. The Indians are thus figured as merely needing, in Said's term, 'a European presence' to jumpstart their evolutionary development.[100]

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[98] Conan Doyle, *LW*, p. 130
[99] Deane, p. 216
[100] Said, p. 202

The trope of shared identity, then, reinforces the notion of the pre-human as sharing an ontological kinship, if not a level of technical or social sophistication, with the 'true' human, such that their behaviour becomes subject to moral regulation. Yet the temporal discrepancy that exists between the adventurers and the pre-human Indians and ape-men also serves another purpose, offering a clue to the model of the 'ideal' human society that underpins the novel. As mentioned in relation to Verne above, the form of Conan Doyle's novel, and of much lost-world fiction, is that of a departure from and return to what Suvin terms 'bourgeois normality'—consequently, there can be no extraordinary revelations during the course of the journey that would radically disrupt that normality.[101] As in Verne's *voyages*, the circularity of the lost-world narrative is underpinned by the permanency and stability of the 'bourgeois normality' of European civilisation—the assumed immunity of Doyle's London, in the case of *The Lost World*, to any substantial historical change.

Yet Conan Doyle's novel *does* acknowledge temporal change of a different order, in the various forms of geological, biological, astronomical, and other kinds of 'natural time' not experienced directly by the individual. Consider, for example, Challenger's description of the plateau, which characterises the space in specifically temporal terms:

> An area, as large perhaps as Sussex, has been lifted up *en bloc* with all its living contents, and cut off by perpendicular precipices of a hardness which defies erosion … What is the result? Why, the ordinary laws of Nature are suspended. The various checks which influence the struggle for existence in the world at large are all neutralized or altered. Creatures survive which would otherwise disappear … They have been artificially conserved by those strange accidental conditions.[102]

Significantly, the language used in this extract is explicitly Darwinian: the phrase 'checks which influence the struggle for existence' could have been lifted verbatim from the pages of *On the Origin of Species* (1859).[103] The plateau, like the subterranean world of Verne's *Journey*,

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[101] Suvin, p. 151
[102] Conan Doyle, *LW*, p. 29
[103] Certainly these were the terms that Darwin employed to describe natural selection: 'A struggle for existence inevitably follows from the high rate at which organic beings tend to increase. Every being ... must suffer destruction during some period of its life. ... Lighten any check, mitigate the destruction ever so little, and the number of the species will almost instantaneously increase to any amount'. See Charles Darwin, *On the Origin of Species*, 1859, Oxford University Press, 2008, pp. 50-54

serves as a metonymic snapshot of a past still caught up in a Darwinian dynamic, into which arrive the three variations of hominid: the ape-men who arrived in 'past ages', the native Indians, 'more recent immigrants from below', and finally the explorers themselves.[104]

Given this temporal schema, it is apparent that any potentially radical discoveries encountered during the fantastic sojourns of lost-world fiction must be viewed as always-already enfolded within, and therefore neutralised by, the evolutionary terminus of advanced European civilisation. In other words, such works of lost-world fiction are premised on the assumption that the inevitable endpoint of all evolutionary history is the society—whether it be London, or Paris, or Hamburg (the home city of Verne's travellers in *Journey*), or any other imperial capital—from which its adventurers initially depart. Challenger himself makes this temporal framework explicit:

> 'We have been privileged,' he cried, strutting about like a gamecock, 'to be present at one of the typical decisive battles of history—the battles which have decided the fate of the world. What, my friends, is the conquest of one nation by another? It is meaningless. Each produces the same result. But those fierce fights, when in the dawn of the ages the cave-dwellers held their own against the tiger folk, or the elephants first found that they had a master, those were the real conquests—the victories that count. By this strange turn of fate we have seen and helped to decide even such a conquest. Now on this plateau the future must forever be man.[105]

Those 'meaningless' wars between developed imperial nations are, according to Challenger, redundant in evolutionary terms—the real developments in the course of human progress are, for those nations, now relegated to the past. History, in other words, in the sense of radical change and development, is at an end for technologically developed nations, since, whatever twists and turns may arise in the course of 'ages', the 'fate' of such nations is now and 'must forever be man'. This temporal structure in *The Lost World* is imbued with particular significance given its own historical context: written on the eve of a war that was to shatter all notions of social or cultural stability (and Conan Doyle was well aware that such a war was a

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[104] Conan Doyle, *LW*, p. 129
[105] Conan Doyle, *LW*, p. 136

possibility),[106] the idea of social immunity to sudden ruptures must indeed have been a comforting one.

The adoption of circular narratives within the lost-world fiction of Verne and Conan Doyle, then, is not accidental: rather, it is a means of resolving the tension between evolutionary and teleological frameworks of European historical development. We can perhaps follow the example of Brian Aldiss in terming such novels 'jolly journeys', insofar as the conflicting temporal frameworks of centre and periphery—the opposition between a state of cultural 'Being' in the capitals of Europe and of primitive Darwinian 'Becoming' at the peripheries of empire—are reworked into a 'safe' circular framework that both acknowledges and neutralises the dynamics of Darwinian time.[107] The adventurers, assured in their techno-evolutionary advancement, are thus free to venture into the space of Darwinian 'Becoming', safe in the knowledge that return is guaranteed. The Indians, conversely, lacking the technical sophistication of European society, remain locked in an evolutionary battle with natural forces. If, however, the Indians can be thought of as 'good' pre-humans—as 'representatives of the human struggle against the beasts in evolutionary history', as Deane puts it—then the near-complete destruction of their most significant evolutionary barrier, the ape-men, represents a turning point that will eventually and inevitably thrust the Indians to the top of the plateau's hierarchical ladder.[108]

So it may be seen that the different types of human on the plateau form part of an ascending scale of human evolution—different stages in a timeline of evolutionary

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[106] See, for example, his short story 'Danger' (1914), one of the many 'future war' stories to appear in the years prior to the First World War. Depicting a naval siege of Britain by an unidentified European country, it was written, as I.F. Clarke notes, as 'propaganda in aid of the Channel Tunnel project', and 'won the interest of all Europe and the scorn of most naval experts'. See I.F. Clarke, *Voices Prophesying War 1763-1984*, 1966, Panther Arts, 1970, pp. 103-105.

[107] I refer here to Aldiss' description of the post-apocalyptic works of John Wyndham as 'cosy catastrophes'. The phrase draws attention to the fact that, following the apocalyptic event, Wyndham's protagonists often find themselves in a position of remarkable physical and psychological well-being, able to enjoy the material comforts of the pre-apocalyptic world (usually in the company of a young woman) without any of the restraints associated with modern life. See Brian Aldiss, *Billion Year Spree: the history of science fiction*, 1975, Corgi Books, 1973, pp. 335-336.

[108] Deane, 211

development that culminates in the rational European human. Beginning with the ape-men, atavistic relics of an amoral and thus outmoded stage of evolution, it moves through the evolving Indians up to the dominant British adventurers. The Indians, caught between civilisation and savagery, thus resemble Kipling's 'Native States' in 'The Man Who Would Be King' (1888): 'touching the Railway and the Telegraph on one side, and, on the other, the days of Harun-al-Raschid'. [109] The Indians occupy a similarly liminal position: although, as Challenger notes, they are by no means a 'low' race of humanity, nevertheless they figure within the novel as the 'little red pals' lying in 'obsequious adoration' to their European superiors.[110] Both human and not human, they are the pre-human, sharing the moral sympathies of their European counterparts, or as Challenger puts it, 'the instincts of the natural man', yet lacking the technological or social sophistication that would gain them 'true' human status.[111] The connection formed between the Indians and the Europeans is thus marked by a conflicting attitude towards the native that recognises their human potential while denying them full human rank. This is a denial, we now see, that may be expressed in evolutionary terms: the natives may one day be fully human, but *not yet*. The Indians, it might be said, are Europeans-in-waiting, or humans in natives' clothing—and it is thus a moral imperative for the Europeans to aid them in fulfilling their destiny of full personhood.

Darwinian evolution, then, serves two purposes in Conan Doyle's novel. On the one hand, it provides an intellectual framework within which European civilisation and 'rational man' could be conceptualised as the natural endpoints of the evolutionary process. On the other, it also provides a means by which to elevate a particular set of moral qualities as essentially—because 'naturally'—human, thereby providing a normative justification for the domination and destruction of 'bad' pre-human beings, as occurs with the ape-men. In this way, the novel inverts the moral structure of Shelley's *Frankenstein*: whereas the former work centres on the tragedy of the outwardly inhuman Creature repudiated by those who fail to recognise his moral qualities, the latter text instead punishes the outwardly 'human' ape-men precisely for lacking

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[109] Rudyard Kipling, 'The Man Who Would Be King', 1888, *The Man Who Would Be King and Other Stories*, edited by Louis L. Cornell, Oxford World Classics, 1999, e-book, p. 303
[110] Conan Doyle, *LW*, p. 132
[111] Conan Doyle, *LW*, p. 132

those same qualities. In either case, we can see the idea of the human as linked with a certain conception of moral feeling, present in the Creature and absent in the ape-men, that is assumed to raise humanity above the level of the surrounding natural world.

Socialism, evolution and the pre-human in London's *The Iron Heel*

Like Conan Doyle, Jack London has not yet gained much recognition as a writer of SF, yet he produced a wide range of fiction—four longer works, and at least a dozen short stories—that can arguably fall under the umbrella of SF, fantasy, or speculative utopian writing.[112] *The Iron Heel*, London's 1907 work of utopian socialism, represents both a continuation of and a break away from the nineteenth-century utopian tradition. Such utopian visions were a popular literary subject in the Anglophone world around the turn of the century: writers such as Wells, William Morris, W.H. Hudson, Charlotte Perkins Gilman, and others contributed to a well-established utopian tradition in *fin-de-siècle* literature, and indeed one of the most popular and influential American novels of the period, Edward Bellamy's *Looking Backward* (1888), was a utopian work.

Both London's *The Iron Heel* and Bellamy's *Looking Backward* are concerned with challenging the dehumanising conditions of turn-of-the-century industrial capitalism, depicting the replacement of exploitative capitalist relations with socialist co-operation. The means by which the socialist society is achieved, however, differs markedly between London's novel and its predecessor. The foundations of Bellamy's global utopia are steeped in the blood of neither labourer nor capitalist—rather, Bellamy's utopia quite simply *happens*, 'the result of a process of industrial evolution which could not have terminated otherwise'.[113] In this utopian future, the heads of industry were content to simply relinquish control of their trusts and corporations to the proletariat when it seemed that 'Public opinion was fully ripe for it, and the whole mass of the people was behind it'.[114] On the contrary, as Gorman Beauchamp notes, London 'was

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[112] These works were recently republished in three volumes as *The Collected SF and Fantasy of Jack London* by Hesperus Press (2013).

[113] Edward Bellamy, *Looking Backward: 2000–1887*, 1888, Oxford University Press, 2007, p. 29

[114] Bellamy, p. 33

convinced that power is never relinquished from above, but must be wrested from below: not moral suasion nor lessons in economics, but superior force would alone suffice to overthrow the capitalist system and institute the era of socialist brotherhood'.[115] In this, London followed Marx, who criticised the 'utopian socialism' of Fourier, Saint-Simon, Owens and others who 'see in poverty nothing but poverty, without seeing in it the revolutionary, subversive side'.[116] *The Iron Heel*, as Beauchamp argues, should thus be understood as 'London's answer to the blithely optimistic belief of Bellamy that the plutocrat will roll over and play proletariat in the service of brotherhood'.[117] Both writers offer a vision of a more hopeful human future—but where Bellamy attempts to give this hope a solid politico-economic shape, London instead offers a bleak warning about the bloodshed and sacrifices that will be required to get to that point.

London's firm political beliefs inform the humanist concerns of the *Iron Heel*. The novel depicts the formation, in the early twentieth-century US, of a tyrannical 'Oligarchy' comprised of capitalists, industry chiefs, and religious leaders, who impose their brutal autocratic will on the oppressed proletariat. While most of these 'wage slaves' accept their subjugated position, reverting to bestial status as the 'People of the Abyss', a small group of socialist revolutionaries secretly band together to form an underground movement committed to overthrowing the 'Iron Heel' (as the oligarchy comes to be called). Most of the novel takes the form of a manuscript written in the early twentieth century by capitalist-turned-revolutionary Avis Everhard, telling the story of her husband Ernest, one of the leaders of the revolutionary movement in its early days. This manuscript is then discovered and published in the twenty-seventh century, by which time the Iron Heel, after three hundred years of despotic rule, has finally been overthrown, and society reformed into a socialist utopia. In addition to Avis's text, the novel also features an introduction and footnotes 'written' by a twenty-seventh-century historian, Anthony Meredith, who provides historical context for various events and

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[115] Gorman Beauchamp, '*The Iron Heel* and *Looking Backward*: two paths to utopia', *American Literary Realism, 1870-1910*, vol. 9, no. 4, 1976, p. 311

[116] Karl Marx, *The Poverty of Philosophy*, 1847, *Essential Writings of Karl Marx*, edited by David Caute, Panther Books Ltd., 1967, p. 99

[117] Beauchamp, p. 312

characters depicted in the manuscript. Meredith also hints at some of the features of the socialist society in which he lives—'the only utopia, surely', as Beauchamp remarks, 'ever to be couched exclusively in footnotes'.[118]

Evolutionary dynamics, as we will see, occupy a key position in *The Iron Heel*. Darwinian time functions in the novel to impel capitalism towards a socialist utopian ideal— what Nadia Khouri terms 'a state of biological equilibration'—as society is determined by imperatives ostensibly derived from biological evolution.[119] In embracing this notion of the 'inevitable' socialist utopia that will replace capitalist modernity, London deploys evolution in a similar manner to Conan Doyle's *The Lost World*, using the dynamics of Darwinian time to naturalise a particular ideology concerning human civilisation. However, in contrast to the stable 'bourgeois normality' of Verne's and Conan Doyle's fiction, in which evolutionary forces are conceived as affecting those non-European 'primitive' spaces that lie beyond the borders of imperial Europe, the societies depicted in London's scientific romances, like those of Wells, are conceived as imperfect and unsatisfactory, and so are susceptible to sudden and profound change. Hence, whereas Conan Doyle views European civilisation as the endpoint of evolutionary time, London instead reduces capitalist modernity to simply another stage in the evolutionary development of human society, and views the culmination of history as located in a future socialist utopia.

But this conception of an evolutionary process edging the world towards socialism also runs into difficulty here with regard to the human individual, insofar as it shifts historical emphasis away from the human itself towards what might be called 'extra-human' forces—in this case, towards impassive historical processes moving inexorably along Darwinian lines. Indeed, what the novel appears to demonstrate above all else is the effective redundancy of individual human action: the apparent historical inevitability of the revolutionary moment paradoxically inspires a sense of fatalistic determinism in the face of unswerving evolutionary principles. Active human agency is thus sacrificed to broader conceptions of impersonal

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[118] Beauchamp, p. 307

[119] Nadia Khouri, 'Utopia and Epic: ideological confrontation in Jack London's *The Iron Heel*', *Science Fiction Studies*, vol. 3, no. 2, 1976, p. 180

historical time: social evolution as predestined towards a socialist utopian end. To recuperate some of this lost sense of agency, London constructs an idealised version of the human, and simultaneously deploys the figure of the pre-human—characterised as 'The People of the Abyss', London's term for the working classes—as a foil to the perceived moral and physical rectitude of his protagonists. The pre-human is conceived by London as the true victim of capitalist exploitations, a degenerate form of humanity who, as we will see, comes to bear the brunt of his anxieties regarding the tenuousness and fragility of nineteenth-century humanist ideology.

To explore this argument, we will begin by examining the impact of evolutionary thought on London's fiction. In this, London's most significant literary predecessor was Wells, who, as outlined in the introduction, was profoundly influenced by evolutionary ideas, and who in turn had a substantial impact on the younger writer. Indeed, the parallels between the lives of the two men are striking: born ten years apart into working-class backgrounds, both were exposed at an early age to the degrading brutality and tedium of industrial working conditions of the late nineteenth century—Wells in a draper's shop in Southsea, and London in a variety of industrial jobs in his native Oakland. In a bid to escape a life of menial labour, both succeeded, after some effort, in entering education, with Wells winning a scholarship to study biology under Thomas Huxley, and London entering, though never graduating from, the University of California, Berkeley. Both then turned to writing, eventually becoming two of the most influential writers of the period. And both, finally, were heavily influenced from a young age by both socialist and Darwinist ideas, using their fiction as a vehicle to challenge the injustices of capitalism and to explore the possibility of a socialist future.

By the time of London's first professional publication in 1899, Wells was already well established both in Britain and the United States. The speculative imaginations of both writers were fired by their dissatisfaction with the society they saw around them, and London acknowledges the influence of the older writer on *The Iron Heel*. In his notes of 1906, he states that he will 'Perhaps write a novel, a la Wells, out of the idea of wage slaves, ruled by industrial oligarchs, finally ceasing to reproduce', a work that he tentatively titled 'CAPTAINS OF

INDUSTRY'.[120] He is here most likely referring to Wells's *When the Sleeper Wakes* (1899), which shares with London's novel a sense of dread concerning the growing dehumanisation of industrial capitalism. The form of Wells's romances, as Suvin remarks, usually consists of some ordinary 'outer framework' whose serenity is shaken by the sudden arrival of a 'destructive newness', which affords Wells the opportunity to critique the inequalities and complacencies of *fin-de-siècle* British society.[121] Hence Wells's speculative fiction contrasts sharply with the fantastic expeditions of Verne: his stories are rooted in the transformation of the familiar spaces—the small country villages, or middle-class households—of Britain itself. Even when his narratives do centre on such expeditions to far-flung places, his protagonists rarely return to the everyday world unchanged. Edward Prendick in *The Island of Doctor Moreau* (1896), for instance, becomes a recluse from humanity following his experiences on the island of the 'Beast Folk', while neither the Traveller in *The Time Machine* (1895) nor Cavor in *The First Men in the Moon* (1901) succeeds in returning at all. The radical socio-cultural upheaval, and the fragility of the European psyche, suggested by Wells's works is clearly at odds with the static social orders of Verne's *voyages*. For Wells, as for Nietzsche, European society was characterised by a mistaken sense of invulnerability to historical change.

This sense of the impermanency of 'bourgeois normality' and its susceptibility to radical change were themes later picked up and portrayed with tremendous force in *The Iron Heel*. As with Wells, London viewed evolution not as a remote process affecting only the outskirts of civilisation, but as an active deterministic force operating at the very centre of capitalist society and human history. Indeed, as Lawrence Berkove notes, 'Among the many intellectual influences on Jack London, none is so central and profound as that of Darwin', except perhaps the social Darwinist ideas of Herbert Spencer and T.H. Huxley.[122] This understanding of evolution as a 'live force', so to speak, can be clearly seen throughout London's fiction. His 1906 novel, *Before Adam*, for instance, depicts a twentieth-century man

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[120] Quoted in Earle Labor, *Jack London: an American life*, Kindle edition, Macmillan, 2013, ch. 19, capitalisation in original

[121] Suvin, p. 208

[122] Lawrence Berkove, 'Jack London and Evolution: from Spencer to Huxley' *American Literary Realism*, vol. 36, no. 3, 2004, p. 243

afflicted with 'race memories'—'vast and terrific vistas' revealing 'the progression of life, not upward from ape to man, but upward from the worm'. These race memories, according to the narrator, connect contemporary humanity to 'the raw beginnings of mankind', with 'Evolution [as] the key': each human, according to the narrator, carries within them 'a memory of [the] past-day experiences' of their direct ancestors, made accessible during the unconscious processes of sleep. In *The Iron Heel*, meanwhile, the rise of capitalist modernity is viewed as simply another phase in the continuing process of human evolution, and a particularly grim one at that:

> We must accept the capitalist stage in social evolution as about on par with the earlier monkey stage. The human had to pass through these stages in its rise from the mire and slime of low organic life. It was inevitable that much of the mire and slime should cling and be not easily shaken off.[123]

As protagonist and working-class philosopher Ernest Everhard says to the capitalist barons whom he has vowed to overthrow, 'you have not studied social evolution at all. You are in the midst of a transition stage now of an economic evolution'.[124] Here, although Darwinian evolution in *The Iron Heel* serves a similar purpose as in *The Lost World*, deployed to support an understanding of a particular human social formation as the 'natural' endpoint of historical evolutionary time, it is the 'developed' societies, rather than primitive spaces, of London's fiction remain imbricated within evolutionary dynamics, subject to sudden upheavals that may radically social landscapes.

In particular, London's integration of evolutionary dynamics into *The Iron Heel* is joined to his concerns regarding the exploitative socio-economic formations of the late nineteenth-century United States—and in particular, the capitalist industrial cartels that came to dominate the American economic landscape. London can be placed alongside a number of early twentieth-century socialist writers, including Upton Sinclair and Frank Norris, whose works directly address the dehumanising conditions of industrial capitalism in the United States of the early twentieth century. Throughout his career, London launched a variety of literary

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[123] Jack London, *The Iron Heel* [henceforth *IH*], 1907, *The Collected Science Fiction and Fantasy of Jack London* [henceforth *Collected SFF*], vol. 2, Leonaur, 2005, p. 187, ft. 1
[124] London, *IH*, p. 101

attacks on the brutality and seemingly inhuman conditions of US 'finance capital'.[125] His 1908 short story, 'A Curious Fragment', for example, takes the form of a recorded narrative from the twenty-sixth century, 'the fifth century of the terrible industrial oligarchy', in which a rebellious slave confronts a ruling 'capitalist' with the severed arm of his fellow worker. Another popular story, 'The Strength of the Strong' (1914), meanwhile, deploys a speculative framework set in the early days of humanity to highlight both the hypocrisies of capitalism and the complicity of religion in underpinning the capitalist ethos. London even devoted several months in 1902 to living and working in the East End of London, an experience which culminated in 1903 with his publication of *The People of the Abyss* (a phrase he borrowed from Wells),[126] a journalistic account of the misery and squalor of the capital's urban poor. Already in such works we can see an emerging anti-industrial humanist narrative: industrialisation, London remarks, with its extremes of urban poverty and brutal labour conditions, can amount only to 'an unnatural life for the human', in sharp contrast to 'the fresh virile life from the country'.[127]

Yet, for all its influence on his thought, London is inconsistent in his responses to evolutionary thought. No single model of evolution informs his fiction: in particular, in *The Iron Heel* and other works, London wavers between a conception of evolution as, on the one hand, a natural, deterministic force whose operations are entirely blind and impersonal and, on the other, a socially determinable force that can be directed towards the attainment of specific ideological ends. Capitalism in *The Iron Heel* is presented both as a natural stage in the evolution of humanity *and* as a human evil to be crushed—its collapse, as Everhard insists, is inevitable, and yet its power, by the close of Avis's manuscript, is virtually complete. The bloody scenes of the 'Chicago Commune', for example—a failed 'first blow at the nervous system of the Oligarchy', undertaken by the revolutionaries at the climax of the narrative—

[125] London in fact reviewed works by both these authors. See Philip S. Foner (ed), *The Social Writings of Jack London* [henceforth *SWJL*], 1947, Citadel Press, 1964, particularly 'The Octopus', pp. 507-511, and 'The Jungle', pp. 517-524.
[126] See London, *IH*, p. 187, ft. 2
[127] Jack London, *The People of the Abyss* [henceforth *PA*], 1903, Hesperus Press, 2013, p. 34

emphasise the violence inherent in challenging established ideologies.[128] Indeed, London's depictions of the Commune were perhaps inspired by the frequent manufacturing strikes of the late nineteenth and early twentieth-century US, of which London was a vocal supporter and frequent participant.[129] These fierce encounters with established authorities and their recreation in London's fiction offered a stark warning that any challenge to the orthodox socio-economic narrative, though necessary, will be bloody and, more than likely, a failure. Yet the narrative framework of London's novel—the 'meta-setting' located in the eventual socialist utopia—also leaves no doubt that those powers would eventually succumb to the will of the proletariat, 'whether it is in one year, ten, or a thousand'.[130]

This tension between historical determinism and individual agency is most clearly embodied in the character of Ernest Everhard, London's 'superman, a blond beast such as Nietzsche has described', and clearly an idealised image of London himself.[131] In the admiring and hyperbolic prose of his wife Avis, Ernest is the revolution itself personified, a furious and energetic opponent of the conceits and hypocrisies of bourgeois capitalism. The characterisation of Everhard demonstrates the extent to which, however much he aspired to emulate the older writer in other regards, London diverged from Wells's beliefs concerning the proper path of socialist development. Whereas Wells's attitudes towards such development were broadly Fabian in nature, centred on the need for improved education and technological advancement,[132] London's were a potent mix of Marx and Nietzsche—for him, the transition

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[128] London, *IH*, p. 219

[129] See, for example, his famous essay 'The Scab', first published in 1904.

[130] London, *IH*, p. 79

[131] London, *IH*, p. 17

[132] Raymond Williams, for example, suggests that Wells's utopian imagination is underpinned by 'social engineering', 'rapidly developing technology', and a 'clean, orderly, efficient and planned (controlled) society' (p. 105). *When the Sleeper Wakes* could be viewed as an exception within Wells's utopian thought, as it ends with the oppressed citizens of London revolting against Ostrog, their dictatorial leader. Given, however, that Ostrog himself began as a revolutionary who overthrew the oligarchic 'White Council', then betrayed the working classes by refusing to put an end to their exploitation, it is also possible to read the novel as a critique of revolution as an ineffective political tool vulnerable to the corrupting influence of charismatic leadership. See Raymond Williams, 'Utopia and Science Fiction', 1978, *Tenses of Imagination: Raymond Williams on Science Fiction, Utopia and Dystopia*, edited by Andrew Milner, Peter Lang, 2011, pp. 93-112.

to socialism would come about not through the education of the masses, but through bloody revolution led by charismatic overmen. Notwithstanding his larger-than-life aspect, however, Everhard's eventual place in history, as future historian Anthony Meredith remarks, is 'not so exceptional' as Avis would have us believe: he is 'but one of many able leaders' of the revolutionary movement.[133] This reduction of the charismatic hero of the novel to the level of merely one historical figure among many allows London, as Khouri remarks, 'to reject in the footnotes the idea of a unique hero and advance that of many heroes'.[134] At one point in the novel, Everhard participates in a confrontational debate with the 'Philomaths', a social club consisting of intellectuals and business and religious leaders. To these emblematic representatives of invested authority, Everhard appears not as an individual but as 'the spirit of regnant labour …. his hands that had appeared in their eyes were the hands of the fifteen hundred thousand revolutionists'.[135]

Such ambiguous characterisation—London's vacillation between Everhard as larger-than-life Übermensch on the one hand, and collective symbol of impassive historical forces on the other—may be viewed as a result, Jonathan Berliner argues, of the merger between Darwinian and socialist thought within revolutionary literature of the time.[136] As a result of this fusion, socialism appears both as a social force to be proactively harnessed in the here-and-now *and* as a natural state to be attained through inexorable evolutionary principles. The process of socialist development is thus, Berliner argues, 'a dialectical one, with the social process supported by the natural one'.[137] Socialism, in other words, was regarded in much early twentieth-century socialist literature as a natural state as much as a social one. Such an understanding informs Bellamy's *Looking Backward*: 'All that society had to do', observes a citizen of the future, reflecting on the nineteenth century, 'was to recognise and cooperate with … evolution, when its tendency had become unmistakeable'.[138] We find similar ideas

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[133] London, *IH*, p. 11, 27, ft. 2
[134] Khouri, p. 177
[135] London, *IH*, p. 69, 72
[136] Jonathan Berliner, 'Jack London's Socialistic Social Darwinism', *American Literary Realism*, vol. 41, no. 1, 2008, p. 61
[137] Berliner, p. 61
[138] Bellamy, p. 29

running throughout London's socialist thought. As he writes in an essay from 1902, under the direction of 'Natural Selection' the proletariat will inexorably move from 'chattel slavery to serfdom, and from serfdom to … "wage slavery"', onwards towards the day 'that all labor shall become conscious of itself and its class interests'.[139] Everhard, in this sense, is not so much an individual—since any true socialist, as London argues in 'How I Became a Socialist' (1903), will have had the 'individualism effectively hammered out of [them]'—as he is a representative of a social class operating under irresistible natural principles.[140]

The effect of such historical determinism is, however, to undercut the ability of London's characters to act as true historical agents. The dramatic political energy of the Chicago Commune, for example, is severely weakened by the narrative logic of London's 'mathematically … inevitable' revolution: the failure of the revolutionaries to claim Chicago cannot truly be said to matter in any meaningful manner, since the socialist revolution, we are assured, will in any case occur.[141] This contradiction betrays London's anxieties regarding the decreasing levels of agency available to individuals within the 'iron cage' of capitalist modernity which, as Lewis Mumford notes, created a 'machine age' that 'limits the actions and movements of human beings to their bare mechanical elements'.[142] More specifically, *The Iron Heel* is caught between what Stephen Kern (borrowing from Eugene Minkowski) calls the 'active' and 'expectant' modes of futurological experience.[143] Whereas in the 'active' mode, Kern remarks, 'the individual goes towards the future, driving into the surroundings in control of events, in the mode of expectation the future comes toward the individual, who contracts against an overpowering environment'.[144] Kern points to the Fordist factory as illustrating a shift in the modes of time experienced by labourers and manufacturers: 'The assembly line and Taylorism … relegated [the labourer] to an expectant mode, waiting for the future to come

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[139] Jack London, 'Wanted: A New Law of Development', 1902, *SWJL*, p. 433
[140] Jack London, 'How I Became a Socialist', 1903, *SWJL*, p. 365
[141] London, *IH*, p. 114
[142] Lewis Mumford, *Technics and Civilisation*, 1934, Harbringer Books, 1963, p. 41
[143] See Stephen Kern, *The Culture of Time and Space, 1880-1918*, 1983, Harvard University Press, 2003, pp. 89-108
[144] Kern, pp. 89-90

along the line, at the same time increasing the manufacturer's control'.[145] These two modes, which Kern argues are the characteristic ways of experiencing time during the *fin-de-siècle* period, are thus marked by active and passive orientations towards historical change: the active individual forges their own path through the future, while the expectant individual waits for the future to wash over them.

It is therefore surely significant that, only four years before the publication of *The Iron Heel*, Henry Ford had founded the Ford Motor Company in Michigan, a corporation later to become a key symbol (as we will examine in more detail in the next chapter) of the dehumanisation and conformism of technological modernity. London's personal experience of industrial labour conditions led him to a strong critique of its practices—as he puts it, he had seen 'the walls of the Social Pit rise around' him.[146] Reacting against the constraints of capitalist modernity, his fiction consistently imagines an escape or retreat from the 'special forms of brutality' characteristic of corporate capitalism: to the unfettered reaches of the Pacific in *The Sea Wolf* (1904), the Alaskan wilderness in *The Call of the Wild* (1903), the early days of pre-technological humanity in *Before Adam*, a post-apocalyptic future in *The Scarlet Plague* (1912), or a host of pre-modern historical eras in *The Star Rover* (1915). In such imaginative spaces, human action can again become qualitative: the conflicts between Wolf Larsen and Van Weyden in *The Sea Wolf*, 'Big-Tooth' and 'Red-Eye' in *Before Adam*, or Buck and Spitz in *The Call of the Wild* become allegorical enactments of human conflict with natural forces.

Yet this conflict is also the very issue with which *The Iron Heel* most clearly struggles: the novel specifically adopts as its setting the industrial landscapes of early twentieth-century America, a context from which the means of escape were much less clear. This inability to imagine an 'out' from modernity perhaps accounts for London's failure to depict the actual moment of revolutionary change in *The Iron Heel*: the novel depicts the consolidation of the 'Iron Heel' of autocratic capitalist authority, and gestures towards the socialist shape of the society of the twenty-seventh century, but does not indicate how the radical transition from the former to the latter is to be achieved. Such an omission makes apparent the fact that, in the

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[145] Kern, p. 92
[146] London, 'How I Became a Socialist', p. 365

context of capitalist modernity, the desirable shape of effective human political agency—the resolution of the allegorical conflict between capitalists and revolutionaries—is simply not forthcoming. Rather, the moment of successful revolution takes the form, as Allesandro Portelli argues, of a missing link in the narrative:

> Too often, the essential [revolutionary] part of the story is placed in blanks, in gaps: this suggests that the impossibility of naming and describing the revolution is a recurrent motif in American literature. Revolution—the violent substitution of one order with another—is a 'black hole' in the national consciousness. ... The People of the Abyss, the death of the hero, the social revolution—all are untold. This structure implicitly tells us more about London's attitude toward revolution than all his explicit political statements.[147]

London, in effect, kicks the can of revolutionary 'Becoming'—an unrepresentable moment linking two antithetical poles of dystopian and utopian 'Being'—into the future without attempting to elucidate its exact shape, and so the precise mode of enactment of the 'natural' utopian society of the twenty-seventh century remains elusive.

The failure of *The Iron Heel* to reveal how its utopia may be materially achieved suggests that the novel must be read in terms of what Jameson terms 'wish-fulfilment'—as yielding to 'some naïvely satisfied and satisfying realization' that undercuts its potential as a guide to political praxis.[148] 'Wish-fulfilments,' Jameson notes, are 'by definition never real fulfilments of desire; and must presumably be marked by the hollowness of absence or failure at the heart of their most dearly fantasized visions'.[149] The absence in *The Iron Heel* is that revolutionary step of 'Becoming' that escapes representation: even as London 'accumulate[s] the objections and the reality problems that stand in its way so as the more triumphantly and "realistically" to overcome them', he remains reticent on the nature of this process of Becoming.[150] Despite London's commitment 'to Marxist communism to an extent seldom equaled', as William J. Burling remarks, his work fails perhaps the most important Marxian test: his Marxism is idealist rather than materialist, more a product of his ideological and

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[147] Alessandro Portelli, 'Jack London's Missing Revolution: notes on *The Iron Heel*', *Science Fiction Studies*, vol. 9, no. 2, 1982, pp. 182-3
[148] Jameson, p. 83
[149] Jameson, p. 83
[150] Jameson, p. 83

metaphysical preoccupations than of engagement with the material realities of the turn-of-the-century US. [151] This in turn weakens its subversive energy as a critique of the manifest degradation and dehumanisation inherent in many of the processes of industrial capitalism.

At the same time, the novel promotes a specifically anti-humanist variant of historical materialism that shifts the locus of agency almost entirely away from individual humans towards a form of historical determinism that stresses 'Humanity', rather than individual humans, as the only true subject of history. This places London in sharp contrast to Wells, who conversely insisted on the need within any utopia to protect the agency and capacities of the individual. Wells characterised capitalist society as 'the world of the Crowd', made up of 'Thousands and thousands of swarming people'—for him, socialism offered the only means by which to 'exalt and ennoble the individual', by ensuring that the capacities of the individual are not subjugated to economic demands of production and consumption. [152] In *A Modern Utopia* (1904), Wells insists on 'the individual difference as the significance of life', and lambasts the 'hardness and thinness' of 'Utopian speculations' that contain 'no individualities, but only generalised people'. [153] Wells was aware, to a greater extent than London, of the conflict that may arise between the desires of the individual and the demands of society, and saw the ideal society as 'a universal becoming of individualities'—a collective mass of distinct individual personalities. [154] (We will also see something of this idea at work in the novels of Arthur C. Clarke in chapter three.)

The narrative gap generated by London's failure to imagine the material shape of his revolution, conversely, can be read as corresponding to the absence of human agency itself, which in the context of an increasingly bureaucratic modernity had become ever more difficult to imagine. *The Iron Heel*, like Wells's utopian works, enacts the conflict between the individual and the social—but in contrast to Wells, in London's novel it is the latter that is

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[151] William J. Burling, 'Marxism', *The Routledge Companion to Science Fiction*, edited by Mark Bould et al., Routledge, 2009, p. 240
[152] H.G. Wells, *Men Like Gods*, 1923, Dover Thrift Editions, 2016, p. 286
[153] H.G. Wells, *A Modern Utopia* [henceforth *MU*], 1904, *The First Men in the Moon & A Modern Utopia*, Wordsworth Classics, 2017, p. 209
[154] Wells, *MU*, p. 215

ultimately given precedence in his evolutionary conception of utopian socialism.

In its subsumption of meaningful human agency into a broad conception of socio-evolutionary determinism, then, *The Iron Heel* can on one level be said to betray an anti-humanist position. Turning now to the actual form of the human in the novel, we find that this anti-humanism is partially tempered by London's commitment to a model of the 'ideal' human, familiar from nineteenth-century humanism, as one which synthesised qualities of intellectual refinement and physical fortitude along the lines suggested by Deane's notion of 'primitive masculinity'. At the same time, the novel also depicts a form of pre-human in the shape of the 'People of the Abyss', London's term for the capitalist working classes, who serve as animalistic foils to the more 'fully' or 'ideally' human revolutionaries. As with Conan Doyle's work, we can see in London's novel a variety of anxieties regarding the distinction between 'animal' and 'human'—even on a purely stylistic level, London's prose is littered with references to 'savage' nature, with every class open to comparison with some natural entity or other. Hence, the working class are first 'lambs sold into slavery and worked to death' before being transformed into the 'abysmal beast'; the 'Philomaths' are 'cave-[men], in evening dress, snarling and snapping over a bone'; the press are a 'parasitic growth'; the street mob in the climactic 'Chicago Commune' move with 'the blind squirm of the monster'; and the heads of industry are, among other things, 'arch-beasts', purveyors of the 'frightful brutality and savagery' of 'dog eat dog' capitalism.[155]

As these examples indicate, the principal conflict that underpins much of London's fiction is that between the refined intellect and the savage beast—between the rule of mind and the rule of body. As Portelli notes, London's work forms part of a naturalist tradition 'in which rationality, spirituality, and culture are opposed to the body, to the instincts, to the atavistic remains of man's animal nature'.[156] One of the most famous literary creations of the twentieth century, Burroughs' *Tarzan of the Apes* (1914), was also a product of such an opposition. John Taliaferro argues that Tarzan is a mixture of 'Old World and New', equally comfortable in

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[155] London, *IH*, p. 37, 216, 64, 92, 240, 87, 36, 100
[156] Portelli, p. 187

'loincloth' and 'tailored suit'.[157] Alongside his rippling body and lion-wrestling prowess, Tarzan possesses a 'clever little mind' and a 'divine power of reason'—qualities put to good use in his transformation, over the course of that first novel, from vine-swinging jungle being to the beau of French aristocratic society.[158] Both Tarzan and Everhard are visions of the 'ideal man' of the early twentieth-century American imagination: a potent synthesis of rugged animal physicality on the one hand and refined social and intellectual rationality on the other, viewed by both London and Burroughs as the most compelling form of the human.

Indeed, London himself was an embodiment of the kind of 'primitive masculinity' that Deane, as outlined above, associated with much nineteenth-century lost-world fiction. By turns a working-class labourer, oyster pirate, deckhand on a sailing schooner, vagrant, prospector in the Alaskan Yukon, ranch owner, and captain of a round-the-world sailing vessel, London's own life encapsulated the frontier ideals of rugged individualism and romantic self-realisation described by Frederick Turner in his famous 1893 essay, 'The Significance of the Frontier in American History'. 'Virility in a man', London declared, 'first and always', while elsewhere he states that 'the man who is afraid to take the fish off the hook or the guts from the bird he expects to eat is no man at all'.[159] London's propensity for physical exploits, his lifelong urge, as he wrote in a letter in 1905, to get 'back to nature to be made well again', emerge in his fiction in the qualities of bodily strength and fortitude with which he routinely endows his—almost exclusively male—protagonists.[160]

At the same time, however, London was all too aware of the perils associated with an over-reliance on the body, having experienced first-hand the physical strains and degradations of industrial labour. As he wrote in 1903, London swore from a young age not to '*do another day's hard work with my body than I absolutely have to do*', since that way lay 'the bottom of the Pit'.[161] Progress, he saw, was dependent on a strong brain as well as a strong body, since

[157] John Taliaferro, 'Introduction', Edgar Rice Burroughs, *Tarzan of the Apes* [henceforth *Tarzan*], 1914, The Modern Library, 2003, pp. xv-xvi
[158] Burroughs, *Tarzan*, p. 44
[159] Quoted in Labor, ch. 11, 14
[160] Jack London and Charles Warren Stoddard, 'The Letters of Jack London to Charles Warren Stoddard' [henceforth 'Letters'], *The Missouri Review*, vol. 23, no. 2, 2000, p. 109
[161] London, 'Socialist', p. 364, emphasis in original

'reason is mightier than imagination', and 'the scientific man … superior to the emotional man'.[162] London's attitudes towards intellectual refinement were never wholly consistent: as he wrote to his father in 1900, he would quickly 'sicken' of 'the hammering away and the hammering away' after purely objective knowledge that he saw as characteristic of the academic life.[163] Nevertheless, following a brief spell in a New York prison in 1894 on a vagrancy charge, London worked hard to educate himself: as biographer Earle Labor writes, he 'realized that education would lead him out of the Pit', out of a life of physical and industrial drudgery and onto a more rewarding intellectual path.[164]

As Berliner notes, London thus 'inverted the nineteenth-century middle class's aversion to the muscular body', and instead 'depicts brutishness as eminently clean and socially uplifting'.[165] It is in *The Iron Heel*, and in the figure of Ernest Everhard, that London best succeeds in capturing this synthesis of mind and body. Everhard, with his 'bulging muscles' and 'bull throat', encapsulates the distinctive form of physical masculinity later immortalised in Burroughs' Tarzan.[166] At the same time, his socialism largely depends on a reformulation of Marx's 'Eleventh Thesis'—a form of materialist praxis in which metaphysical abstractions are useless until translated into qualitative empirical action. Everhard is described as being 'simple, direct, afraid of nothing', his 'sledge-hammer manner of attack' adopted during his intellectual debates with authority figures shattering the idealisms of the aristocratic 'metaphysicians' of Christendom and the bourgeoisie alike.[167] Everhard thus emerges as a kind of perfect Rousseauean type exemplifying both human rationality and animal physicality.

Such paragons also appear in many of London's other works. The notion of ideal balance between body and mind informs the clash between the brutal Wolf Larsen and 'soft' Van Weyden in *The Sea Wolf* (1907), and in the conversion of Van Weyden from pampered intellectual to capable sea-hand over the course of that novel. The difficulties of attaining this

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[162] Quoted in Labor, ch. 1
[163] London, 'Letters', p. 106
[164] Labor, chap. 6
[165] Berliner, pp. 61-2
[166] London, *IH*, p. 17
[167] London, *IH*, p. 17, 19

balance, meanwhile, can be glimpsed in the destabilising effect of the submerged 'racial memories' that haunt the protagonists of 'When the World Was Young' (1913) and *Before Adam*. In this latter text, the atavistic 'Red-Eye', a cruel and aggressive early hominid representative of an earlier stage in human evolution, falls victim to the superior intellect of the more intellectually evolved 'Fire People'—a clear instance of the imperfect human variant succumbing to a more 'improved' successor. It can also be seen (albeit in modified form) in the primitive reversion of the once-tame Buck in *The Call of the Wild* (1903), and in the contrasting domestication of the savage dog-wolf in *White Fang* (1906), both of which emphasise the need to temper the instincts of the body with those of the mind, and vice versa. The preoccupation with combining human refinement with natural power can be detected even in London's conceptualisations of the space of nature itself. It is significant that, as the Oligarchs of *The Iron Heel* are constructing the sprawling wonder-cities of 'Ardis' and 'Asgard', the revolutionaries, with Everhard at their head, instead retire into nature—to an estate in the Sonoma Mountains where, like London, they may recharge both physically and spiritually. Nature for London is not simply to be equated with Tennyson's 'red in tooth and claw': as he writes in *The Scarlet Plague*, the idyllic rural landscape consists not of a 'sea of rank vegetation' resulting from 'pure' nature, but rather of a domesticated and 'splendidly tilled' agricultural landscape.[168] The central distinction between the revolutionaries and Oligarchs thus takes the form of a spatial distinction between georgic rurality and industrial urbanity, while the novel symbolically registers the 'ideal' human as a synthesis of natural *and* human qualities from which the urbane capitalists—and the dehumanising processes of urban industrialism more generally—represent an aberrant break.

At the same time as they promote this 'ideal' form of human, however, London's works are also persistently troubled by ideas of evolutionary degeneracy, and by the figure of the pre-

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[168] Jack London, *The Scarlet Plague* [henceforth *SP*], 1912, *Collected SFF*, vol. 1, p. 159. In this, London can once again be seen as following the example of Wells, in whose scientific romances, as I have argued elsewhere, the countryside functions as a utopian liminal space between the unnatural conditions of the city and the unrestrained violence of pure nature. See Thomas Connolly, 'Utopia and the Countryside in H.G. Wells's Scientific Romances', *Foundation: the international review of science fiction*, vol. 127, 2017, pp. 20-32.

human, which emerges in London's fiction as an atavistic throwback to a 'regressive' stage of human history that threatens to overthrow the 'ideal' human and cast humanity back into a state of unregulated barbarism. In *The Scarlet Plague*, a 1914 work set in a post-apocalyptic world in which a deadly virus that has wiped out most of humanity, survivor Edwin describes to his grandchildren the catastrophic results of a process of devolution among the working classes:

> In the midst of our civilisation, down in our slums and labor-ghettos, we had bred a race of barbarians, of savages; and now, in the time of our calamity, they turned on us like the wild beasts they were and destroyed us. And they destroyed themselves as well.[169]

In the wake of the pandemic depicted in this work, the whole of western humanity succumbs to a process of evolutionary degeneration to a more 'primitive' state: Edwin's grandsons, for example, are described as 'true savages', who wear necklaces of human teeth and speak only in 'monosyllables and short jerky sentences'.[170] Here we can detect an anxiety centred on the degeneration of humanity into 'beasts' threatening to overthrow civilisation: 'The human race', Edwin laments, 'is doomed to sink back farther and farther into the primitive night ere again it begins its bloody climb upward to civilisation'.[171]

This anxiety comes particularly to be focussed within London's works on the working classes, or (as London consistently refers to them) 'The People of the Abyss', who feature prominently in several of London's works. It is interesting to note the contrast between London's earlier and later uses of this term as a qualitative descriptor of this social class. The tone that London adopts towards the English working poor in *The People of the Abyss*, published in 1903, wavers somewhat uneasily between sympathy and contempt for what he calls 'the miserable multitudes' of the East End. At one point, for example, London characterises the masses of struggling workers that filled the streets of the English capital as 'so many waves of a vast and malodorous sea, lapping about me and threatening to well up and over me', a description that suggests more a tone of repulsion and fear than any kind of socialist fellow-feeling or camaraderie.[172] By the time of *The Iron Heel* four years later, this contempt

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[169] London, *SP*, p. 148
[170] London, *SP*, 129
[171] London, *SP*, 129
[172] London, *PA*, p. 8

for the 'machine-serfs and labor-serfs' of industrial capitalism has crystallised into open hostility.[173] The People of the Abyss as depicted in *The Iron Heel* constitute 'the great helpless mass of the population' who, on being released from the slums of Chicago, abandon all moral or social binds whatsoever, turning instead to acts of senseless violence.[174] They are subsequently described in some of the most disturbing language of the novel:

> men, women, and children, in rags and tatters, dim ferocious intelligences with all the godlike blotted from their features and all the fiendlike stamped in, apes, and tigers, anaemic consumptives and great hairy beasts of burden … withered hags and death's heads bearded like patriarchs, festering youth and festering age, faces of fiends, crooked, twisted, misshapen monsters … the refuse and the scum of life, a raging, screaming, screeching, demoniacal horde.[175]

This passage and others describing the People of the Abyss are written in explicitly dehumanising language: the workers are 'herded' from place to place, mere 'beasts ... housed in wretched barracks where family life cannot exist, and where decency is displaced by dull bestiality'.[176] Like the ape-men of Conan Doyle's *The Lost World*, the 'fiends' of the Chicago slums, who attack indiscriminately and lack any clear more moral direction, are thus considered to be also without moral value, and similarly serve to emphasise the contrasting moral rectitude of the novel's protagonists. They are not merely 'animals', but animals who were once human—they thus figure as an explicitly degenerate form of humanity, a devolved inhuman mass whose regression to an ostensibly pre-human intellectual and physical state is negatively contrasted with the moral and physical integrity of Everhard and the other revolutionaries.

In one sense, we can link this characterisation of the proletariat with London's wider views on race: London was, of course, a well-known exponent of the fears in the early twentieth-century US regarding the so-called 'Yellow Peril', evident in such stories as 'The Unparalleled Invasion', published in 1914, in which the population of China is characterised as a 'fearful tide ... a monstrous flood of life'.[177] Yet London's treatment of the working classes

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[173] London, *IH*, p. 216
[174] London, *IH*, p. 216
[175] London, *IH*, pp. 232-233
[176] London, *IH*, p. 216
[177] Jack London, 'The Unparalleled Invasion', 1914, *Collected SFF*, vol. 2, p. 309, 311

appears particularly strange: the proletariat are, after all, the purported benefactors of his very explicit Marxist sympathies. We may account for this strange hostility by viewing it in terms of an ideological clash within London's own belief systems: his deep commitment to both Marxist and Nietzschean doctrines inevitably led to insuperable conflicts within his own ideological framework, with the social communism of Marx clashing with the fierce individualism and self-affirmation of Nietzsche. The threat of the working multitudes can thus be read, in humanist terms, as the threat posed by the mass of the population to the individual human—the fear that the species may end up taking precedence over the individual human being. Consider again that phrase from *The People of the Abyss*: the working classes are described as 'a vast and malodorous sea, lapping about me and threatening to well up and over me'. The fear here is one of integration—of becoming a passive victim of a faceless and overpowering multitude, a notion which London's individualist outlook would not allow him to tolerate. Furthermore, despite his socialist beliefs, London's commitment to Nietzschean individualism, vibrantly realised in the various *Übermensch* that populate his fiction, also prevent him from ever fully exonerating the working classes from at least part of the blame for their own destitution. At one point, London describes the People of the Abyss as a 'noisome and rotten tide of humanity', an evolutionary aberration whose future, marked by 'the deadly inertia that precedes dissolution', is destined to be a degenerate one.[178] The emphasis on inertia here perhaps reveals the true motivation for London's resentments: the working classes are simply impotent, incapable of realising the potential of their lives in the way that London felt he had realised the potential of his own.

London's characterisation of the 'ideal' and pre-human can thus be read as arising from the tension generated by London's opposing individualist and communist beliefs: the People of the Abyss are figured as passive victims of history, swept aside by the emergence of the 'ideal' physical and moral actors of the revolution—even as the actual form of this revolutionary action, as discussed above, can never be portrayed. The ultimate effect of the pre-human, however, is to demonstrate the contingency of its 'ideal' counterpart. The 'pre-' in

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[178] London, *PA*, p. 22, 33

pre-human points to its nature as antecedent—it is what comes before the human—but its recurrent re-emergence in London's fiction also points to its presence *alongside* the human in London's thought. It is not merely what came before, but what is always there, threatening to emerge and engulf humanity's rational nature and return the human, as Edwin writes in *The Scarlet Plague*, to the 'primitive night'. In particular, London's works gesture—continuously and, I suggest, reluctantly—towards the contingency of the humanist narrative itself. Even as he constructs his ideal human, London is persistently troubled by its ephemerality, its very constructedness, threatened by those same qualities that he is attempting to negate: barbarism, primitiveness, brutality, amorality, and all the other qualities that the humanist tradition attempted to expunge from the human. In its role as scapegoat sacrificed on the altar of the 'truly' human, the pre-human comes to function, like Derrida's absent presence, as the manifest trace of humanism's attempts to govern the form of the human itself.

Like Conan Doyle, then, London incorporated a multitude of human kinds into his work. The division between the revolutionaries on one side, who combine physical potency with intellectual and moral fortitude, thus occupying a median position between animality and rationality, and the degenerate and amoral 'People of the Abyss' on the other, reproduces the imagined gulf, evident also in *The Lost World*, between 'idealised' and 'regressive' variants of the human.

Conclusion

We are now in a position to draw some crucial parallels between Conan Doyle's *The Lost World* and London's *The Iron Heel*. Firstly, both reconfigure the human subject in animalistic terms. Challenger and Everhard are representatives of what Deane terms 'primitive masculinity'—a merging of the rational qualities of the human with the violent strength of the animal. This violence is, however, in both cases distinguished from the amoral violence of 'bad' pre-humans—the ape-men and the 'People of the Abyss'—whose barbarity is without ostensible moral or social function and must therefore be repressed. The moral boundaries between the human and the animal are in this way modified without, crucially, being overturned: the inescapable violence of imperialist expansion and the dehumanising processes

of industrialisation are assimilated into a pre-existing moral framework as *necessary* forms of violence—'modifications', as Spencer might put it—undertaken in the service of 'completing' or sustaining the evolution of progressive human civilisation.

We can here usefully draw a line between, on the one hand, the speculative works of Verne and Conan Doyle and, on the other, those of Wells and London. Whereas the former two authors conceive of Darwinian time as having already reached its *telos* in imperial and capitalist Europe, the socialist London and Wells, conversely, conceive of industrial capitalist society as just another stage on the evolutionary path of socio-natural time. All of these writers, however, shift the emphasis from the present of socially-realist fiction to either the past or the future, and define their respective ideal societies—for the former, that of bourgeois imperial Europe, and for the latter, a future socialist utopia—in terms of evolutionary development. Ultimately, both works suggest that, whether viewed as the final end of evolution, or as a species-in-the-making, humanity is always at the top of the ladder.

To return to our two lineages of the human outlined above, it is clear that the image of humanity that emerges from *The Lost World* corresponds comfortably with the triumphant imperial humanism of Verne's *voyages*, rather than the more sceptical or circumspect position adopted by Shelley and, later, Wells. London's work, despite the influence of Wells, demonstrates a similar humanist chauvinism, although his commitment to a radical form of historical determinism, as we saw, also means that his larger-than-life human figures are mostly stripped of any meaningful political or social agency. Given this, it may be most accurate to say that *The Iron Heel* wavers between a Nietzschean interpretation of humanity as self-realising actors on the one hand and a kind of anti-humanist evolutionary determinism on the other. Broadly speaking, however, both *The Lost World* and *The Iron Heel* remain committed to a human-centred view of the world, or to what in the introduction I described as an assimilative mode of humanist narrative: their concerns are firmly centred on *bios*—on human life and human society—and the humans that populate their works are immediately recognisable from the humanist discourses of the nineteenth century.

In relation to both works, the most significant posthumanist motif to be found is, of course, the figure of the pre-human. The pre-human functions as the portrait in the attic, so to

speak, of the humanist narrative underpinning the novels of London and Conan Doyle, symbolising all those human beings—the victims of colonial expansion, or of the dehumanising conditions of urban industrialisation—on whom are visited the sins of progressive civilisation. As suggested above, however, this liminal position also imbues the pre-human with subversive potential: its very hybridity—what Halberstam and Livingstone call its 'someness', being neither fully human nor wholly inhuman—threatens to undermine and transform the hierarchical binaries of humanist thought.

This threat is, of course, wholly nullified in both of the works discussed here. Nevertheless, these qualities of liminality, hybridity, and 'someness' will prove essential in future SF works to developing more critical ideas regarding the human, as we will see in the next chapter with the figure of the 'trans-human'.

Chapter Two

Soma and Skylarks: Technocracy, agency, and the

trans-human in Aldous Huxley's *Brave New World* and

E.E. 'Doc' Smith's *Skylark* series

In a 1957 essay, Julian Huxley, brother to Aldous, outlined what he saw as twentieth-century humanity's 'inescapable destiny'.[1]

> The human species can, if it wishes, transcend itself—not just sporadically, an individual here in one way, an individual there in another way, but in its entirety, as humanity. We need a name for this new belief. Perhaps *transhumanism* will serve: man remaining man, but transcending himself, by realizing new possibilities of and for his human nature.[2]

Huxley's early conception of 'transhumanism' here is remarkably similar to later accounts of the phenomenon. In an essay published in *Extropy: the journal for transhumanist thought* in 1990, for example, noted transhumanist philosopher Max More echoes Huxley's essay by defining the ultimate goal of humanity as 'expansionary transcendence': 'Life and intelligence … must re-order, transform and transcend its limits in an unlimited progressive process. … As extropians pursuing and promoting transcendent expansion we are the vanguard of evolution'.[3] The 'trans-human', in these formulations, is a being at once human and more than human—a technologically determined human, penetrated and shaped by technological systems. For Huxley and More, the trans-human is a transcendent, utopian figure, a progressive

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[1] Julian Huxley, 'Transhumanism', *New Bottles for New Wine*, Chatto & Windus, 1957, p. 17

[2] J. Huxley, p. 17, emphasis in original

[3] Max More, 'Transhumanism: towards a futurist philosophy', *Extropy: the journal for transhumanist thought*, vol. 6, 1990, p. 10, web, *H+pedia*, https://hpluspedia.org/wiki/Extropy_ Magazines, accessed September 2017. 'Extropy' (a term intended to signify the opposite of 'entropy') and 'Extropianism' refer to a set of beliefs broadly centred on the capacity for technology to bring about the transcendence of human limitations. The philosophy of Extropianism was outlined in *Extropy*, a philosophical journal founded by Max More in 1988. More is an influential British transhumanist philosopher who also co-founded the Extropy Institute in California in 1990.

milestone on the road to humanity's ontological culmination. Yet utopia, as we will see in this chapter, can all too easily revert to its opposite: far from serving as a neutral means for achieving ultimate human perfection, seemingly utopian technology can end up wresting agency from the humans it is supposed to serve.

The trans-human comprises our archetypal human figure for this chapter, which will focus on the SF of the interwar period. This was a crucial time for both SF, which crystallised as a genre in the pulp magazines from the mid-1920s onwards, and for the humanist project, which as Tony Davies notes exhibited a 'growing desperation … in the decades either side of the First World War' as a result of the social and political upheavals of the early part of the century: the 'Great War', the rise of fascism and totalitarianism, the growth of the Fordist factory and mass consumerism, and so on.[4] These events also resulted in a surge of speculative fiction preoccupied with questions of the human relationship with rapidly mutating technological and political systems. We will be focussing particularly on two key works from this period: Aldous Huxley's *Brave New World* (1932) and E.E. 'Doc' Smith's *Skylark* series (1928–34).[5]

We will first examine Huxley's novel, perhaps the most famous technophobic work to emerge from the SF tradition. The discussion here will focus on the way that Huxley's novel engages with the question of human agency: to what extent, he asks, is the 'human' in fact determined by technological systems? This is a key question in the scholarship surrounding *Brave New World*: the novel has often been read as a bleak summation of (it is assumed) Huxley's largely pessimistic views on technological and scientific progress. Certainly, with its dark vision of a humanity addicted to material and sensual pleasure, the novel, as I will outline, expresses Huxley's very real fears regarding the perceived loss of individual agency engendered by contemporary developments in capitalist production and consumption. Yet the

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[4] Tony Davies, *Humanism*, Routledge, 1997, p. 41

[5] I use the term '*Skylark* series' here to refer to the original trilogy of *Skylark* novels, comprising *The Skylark of Space* (*Amazing Stories*, August–October 1928), *Skylark Three* (*Amazing Stories*, August–October 1930), and *Skylark of Valeron* (*Astounding Stories*, August 1934–February 1935). Smith eventually added a fourth story to the series, *Skylark DuQuesne* (*If*, June–October 1965). Given its much later publication, this final work will not be treated as part of the original series in this chapter.

temptation to therefore read the novel as an outright expression of anti-progressivism or bland liberal humanism must also be resisted—rather, Huxley was committed to a dialectical understanding of human nature which gave equal weight to the intellectual *and* the sensual, a form of human individual he termed the 'life-worshipper'.

We will then move on to Smith's *Skylark* series. Smith has been called the 'Father of Space Opera', and his *Skylark* series is an important early work of interstellar SF. Like *Brave New World*, the *Skylark* series demonstrates a number of anxieties centred on the relationship between the individual and mass society—yet whereas Huxley views technology as the root cause of the corruption of human nature, Smith conversely sees in technological advancement the means for the utopian transcendence of humanity's limitations. This emphasis on transcendence means that the human in Smith's series, as we will see, is perhaps best understood in a 'post-biological' sense: it refers not to a particular biological species, but rather to a set of abstract qualities that may be shared by any number of (biological) human or inhuman beings. Although the beings depicted in Smith's works may be *biologically* alien, they remain recognisably 'human' in thought and action, leading Smith down a familiar Cartesian road of idealising the mind as the site of 'true' being over and above the body.

In both cases, we will encounter a version of the trans-human—but each writer's reaction to this thoroughly technologised being will be radically different. Before we turn to these two texts, the chapter will begin with an examination of some of the different ways in which SF writers responded to the First World War, the wider changes taking place in western society in the early part of the twentieth century, and the consequences of these for human individuals and society.

The First World War and technology in interwar SF

> He was a mighty beast, mightily muscled, and the urge that has made males fight since the dawn of life on earth filled him with bloodlust and the thirst to slay; but not one whit less did it fill me with the same primal passion. Two abysmal beasts sprang at each other's throats that day beneath the shadow of the earth's oldest cliffs—the man of now and the man-thing of the earliest, forgotten then.[6]

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[6] Edgar Rice Burroughs, *The Land That Time Forgot*, 1918, Gollancz, 2014, pp. 75-76

In this passage from the first volume in Edgar Rice Burroughs' famous lost-world trilogy, *The Land That Time Forgot* (1918), American shipbuilder Bowen J. Tyler finds himself locked in a deadly struggle with a 'hatchet-man', a prehistoric human whom he encounters on the lost island of Caprona near Antarctica. As they clash, Tyler recognises the similarities between himself and his atavistic foe: they are both 'beasts', driven to violence by the same biological urges—in this case, the attentions of Tyler's female companion, Lys. At the same time, the distinction between these two versions of humanity is inscribed in the familiar terms of evolutionary time and technology: whereas Tyler is a 'modern man' of the twentieth century, his enemy, along with the island itself, derives from the ancient past, 'the earliest, forgotten then'. Tyler accordingly bests his opponent, a 'clumsy, unskilled brute', by means of the knife dangling at his side—a symbol of his greater technological ability.[7]

Initially, it would seem from this brief outline that Burroughs' novel can be read in terms familiar from our discussion of Conan Doyle's *The Lost World*. In the works of Conan Doyle and London, as we saw in the previous chapter, the traditional model of the rational subject underwent a revision in order to better account for the violence and loss of agency inherent in the processes of nineteenth-century imperialism and industrialisation. Both authors turned to evolutionary theory in order to reframe human history as a story of inexorable teleological progress that would culminate in either an appropriately imperialist Europe or a future socialist US. The 'ideal' human in both novels becomes a mixture of mind *and* body, culture *and* nature, with such qualifications allowing barbarism and violence to be reconceptualised as traits 'natural' to an otherwise exclusively intellectual human subject. Evolution, which threatens to undermine human ascendancy over the natural world by breaking down the ontological gap separating human from nonhuman, becomes in this way reconfigured as support for the ideologies that would reinforce that ascendancy. The model of humanity that emerges from both texts thus occupies an ambiguous position between humanist and posthumanist—in the wake of the revelations of evolutionary science, it is clear that the classical Cartesian dichotomy between human mind and nonhuman matter (including the body)

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[7] Burroughs, p. 76

can no longer be unproblematically sustained, yet once established the moral prioritisation of human over nonhuman remains nonetheless secure and eternal.

Burroughs' novel, as with much of his adventure fiction, stresses the human as a corporeal as well as an intellectual entity, and—like Doyle—demonstrates that the submerged human propensity towards barbarism and violence may always re-emerge in certain less-than-'civilised' spaces. Yet I begin with Burroughs' novel not in order to dwell on what it shares with earlier SF depictions of humanity, but rather to emphasise its subtle differences from such representations. One such difference lies in its narrative form: far from the 'jolly journey' of Haggard and Conan Doyle, in which the return to stable civilisation for the imperial explorers is safeguarded, the modern world from which Tyler departs and to which he returns is a space full of violent conflict and facing an uncertain future. At the time that the novel was written, the First World War had been underway on the other side of the Atlantic for three years. Indeed, that conflict establishes the context of Tyler's maritime adventures, which begin with an attack on his vessel by a German U-33 submarine. This historical setting produces a sense of threat or unease that distinguishes Burroughs' work from its pre-war lost-world counterparts, insofar as the relationship between the two human spaces of the text—the 'primitive' lost world and the 'modern' civilisation of the narrator—becomes consistently blurred. In contrast to the clearly demarcated spaces of *The Lost World*, the 'civilised' space of the west has, in *The Land That Time Forgot*, become a space of menace: the initial villains of the work are not 'primitive' natives but the German soldiers trapped with the American and British protagonists in the U-33, while any possibility of safe return is precluded by the threat of Allied military attack on the German submarine. In a similar way, the distinction between 'primitive' and 'civilised' humans is here more ambiguous: the second instalment of the trilogy, for example, concludes with the American Tom Billings remaining on the 'primitive' island in order to continue his relationship with one of the natives, while the third sees two of the native women return to the United States with their new American husbands. Such intermingling of opposing human 'kinds' destabilises the traditional ascendancy of the western traveller over the inhabitants of the lost world.

The Land That Time Forgot, then, is less clear-cut in its depiction of 'modern' and 'primitive' humans, in sharp contrast to the rigid hierarchy of human types and the confident imperialist tone of Conan Doyle's *The Lost World*, a shift attributable, as suggested above, to the backdrop against which Burroughs wrote his work. As Eric Hobsbawm argues, the period of the First World War 'marked the breakdown of the (western) civilisation of the nineteenth century', which ultimately proved unable to survive the shower of destruction rained down on its political and economic institutions, its moral and scientific certainties, and its teleological conceptions of historical narrative by the carnage of 1914–18.[8] In place of the age of enlightenment, there now began what Hobsbawm terms the 'Age of Catastrophe', a distinct historical phase between the two world wars marked by the twinned forces of economic depression and political authoritarianism.[9]

The 'Great War' may also be understood as a kind of *posthuman* event: as heralded by *Frankenstein* a century earlier, the war exposed the fundamental inhumanity lying dormant beneath the ostensible civility of western societies. 'This civilisation', Hobsbawm argues, had 'glor[ied] in the advance of science, knowledge and education, material and moral progress'.[10] Following the unprecedented destruction of the years from 1914 to 1918, however, it was no longer possible to speak of the unbroken progress of western human civilisation, nor of the unquestioned triumph of human rationality. As Wells writes in *Men Like Gods*, published in 1923, a 'belief in progress was' by that time 'at least six years out of date', since the 'nationalists, financiers, priests and patriots had brought all … hopes to nothing'.[11] Even outside the conflict, the very pillars of nineteenth-century capitalist imperialism must have seemed under widespread attack in the period after 1914, with nationalist revolution in Ireland, communist revolution in Russia (and a consequent 'Red Scare' throughout Europe and the US), and political agitation from both suffragist and, particularly in the US, civil rights groups. The attack on classical humanism was thus twofold: the war itself exposed the irrationality, brutality, and fragility that lay concealed beneath the nineteenth-century veneer of western, and

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[8] Eric Hobsbawm, *The Age of Extremes: 1914-1991*, 1994, Abacus, 2006, p. 6
[9] Hobsbawm, p. 7
[10] Hobsbawm, p. 6
[11] H.G. Wells, *Men Like Gods*, 1923, Dover Thrift Editions, 2016, p. 5, 232

particularly European, progress, while the various ideological movements that gained increased traction during this period—nationalist, communist, suffragist, civil rights, and so on—increasingly challenged the supremacy of the white, bourgeois, liberal male as the universal 'civilised' human subject.

The cataclysmic events that followed 1914, then, contributed to a scepticism directed towards classical humanist ideas of rationalism and progress, while the tremendous political and technological changes of the period opened the way for new posthumanist explorations of the possible form and meaning of human nature and society. What were writers of SF to make of the new cultural conditions in which they now produced their works?

On the one hand, the disenchantment and uncertainty brought about by the violence and upheavals of the period afforded writers of speculative fiction greater room to manoeuvre in relation to a reading public hungry for new imaginative narratives to replace or refine traditional metanarratives of western progress. It was in such a context, for example, that Olaf Stapledon, one of the most significant British SF writers of the interwar period, composed his future history of the human species, *Last and First Men* (1930). In this novel, the terrible memory of the First World War, in which Stapledon served as part of the ambulance corps, is reduced to little more than a footnote in the two-billion-year evolution of humanity, revealed finally to be a cyclical process destined to return to its origin. Elsewhere, Conan Doyle, whose son Kingsley was killed at the Battle of the Somme, turned increasingly away from the scientific materialism that had marked his earlier Holmes and Challenger stories as the war progressed. Instead, he committed himself to educating the public about the (as he saw it) imminent turn to spiritualism in the west, in such works as 'The Vital Message' (1919) and *The History of Spiritualism* (1926). Indeed, one of his final novels, *The Land of Mist* (1925), sees even so devoted a materialist as Professor Challenger finally embrace 'psychic science', and ends with a call for 'the rebirth of the world—of the true world, the world as God meant it to be', in which the terrible memory of the First World War is but a bump on the road towards 'peace and glory unutterable'.[12] And Charlotte Perkins Gilman reworked the speculative form

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[12] Arthur Conan Doyle, *The Land of Mist*, 1925, *The Lost World and Other Stories*, Wordsworth Classics, 2010, p. 398

of the lost-world novel into a critique of the failures of patriarchal capitalist imperialism in *Herland* and its sequel *With Her in Ourland* (1916), which conceive of a utopian future founded on the egalitarian union of women and men. Feminist themes of sexual equality, or of more militant matriarchal revolution, became prevalent in interwar SF, further popularised in such stories as Francis Stevens' 'Friend Island' (1918) and M.F. Rupert's 'Via the Hewitt Ray' (1930).[13]

At the same time as these writers were penning these new mythologies of the twentieth century, however, the scepticism and uncertainty that marked the 'Age of Catastrophe', while it evidently helped to create an audience for such narratives, simultaneously undermined any claims to a totalising mythology that any writer may have wished to make: the underlying fragility and irrationality of western civilisation had already and irrevocably been exposed. Hence, for example, even the title of Stapledon's *Last and First Men* draws attention to the limited timeframe of the history he is describing: there will indeed be a 'last' man, who 'shall make after all a fair conclusion to this brief music that is man'.[14] In his later novel, *Star Maker* (1937), which expands the scope of this earlier work to encompass all of time and space, the universe is eventually revealed to be simply one of many experiments in creation undertaken by an inscrutable and indifferent deity. A similar scenario is found in *A Voyage to Arcturus*, a 1920 work of 'symbolic fantasy' by Scottish writer David Lindsay, who like Stapledon had served in the British Army during the war.[15] The novel, which takes the form of an allegorical journey through the landscapes of the planet 'Tormaine' circling the star Arcturus, examines an array of philosophical and mythological systems in succession, rejecting each until it finally arrives at an image of all creation as the product of a pleasure-seeking deity called 'Crystalman', and of human life as a 'horrible war … against all that is most shameful and frightening, against sin masquerading as beauty, against baseness masquerading as nature'.[16] The ultimate meaning

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[13] Both these stories were recently reprinted in Mike Ashley (ed), *The Feminine Future: early science fiction by women writers*, Dover Thrift Editions, 2015.
[14] Olaf Stapledon, *Last and First Man*, 1930, Magnum Books, 1978, p. 314
[15] For more on the novel and its author, see Gary K. Wolfe, *David Lindsay*, Borgo Press/Wildside Press, 1982.
[16] David Lindsay, *A Voyage to Arcturus*, 1920, Gollancz, 2003, p. 279

of life, the novel suggests, is that there is *no* meaning beyond the basic experience of pain, and specifically of pain 'masquerading' as pleasure. In the US, meanwhile, the works of H.P. Lovecraft, Edmond Hamilton, and other writers of 'weird fiction' also took up this theme of universal indifference, instilling it with a sense of horror at humanity's seeming inability to control its own fate. Hence, for instance, in Lovecraft's 'Cthulhu Mythos' (1928-1936)—a series of short stories and novels, generally presented as 'found' documents written by traumatised explorers or scientists, which describe a host of ancient and malign alien deities and societies—humanity's search for order and meaning is ultimately thwarted by the indifference and 'cosmic horror' of an unsympathetic and unpredictable universe.

In particular, new metanarratives in this period were intensely concerned with the issue of technology. Alongside the social upheaval engendered by the war and the emergence of new social and political movements, the interwar period was also a time of tremendous technological advancement. Much of this progress was directly linked to the preparation for and conduct of military conflict, with the pre-war arms race among the European powers fuelling the expansion of heavy industries like steel and iron, and of communications and transport technologies such as flight and radio. At the same time, as Alex Goody notes, 'the efforts of Frederick Taylor (*The Principles of Scientific Management*, 1911) and Henry Ford (assembly lines for automobile production were introduced in his factories in 1913) were fundamental in transforming the techno-economic paradigms of America, and of other Western nations'.[17] Increasing automation revolutionised the shape of everyday life, alleviating the stresses of domestic labour, contributing to a post-war surge in production and consumption, and revolutionising the free time increasingly afforded, for the first time, to all classes in western society. Mark S. Morrison puts it succinctly: the early twentieth century was 'the age of the automobile, airplane, synthetic plastic, radio, film, neon sign, audio recording, mass-market tabloid, X-ray machine, cyclotron, skyscraper, tissue culture, and penicillin, but also of chemical warfare, machine guns, eugenics, the Tuskegee syphilis experiment, and the electric chair'.[18] Hoovers and washing machines, radios and the 'movies', telegraphs and telephones,

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[17] Alex Goody, *Technology, Literature and Culture*, Polity Press, 2011, p. 15
[18] Mark S. Morrisson, *Modernism, Science, and Technology*, Bloomsbury, 2017, p. 8

automobiles and aeroplanes: all became widely accessible to the general public for the first time in the 1920s. Yet if such developments verified the potential for technological development to alter human life for the better, the destroyed countryside of Europe and crippled lungs of returning soldiers served as dramatic reminders of its darker possibilities.

For Gorman Beauchamp, the reactions of speculative writers to accelerating technological change throughout the twentieth century can be divided into two broad categories: on one side, the 'technophobes', who feared the rapid escalation of scientific progress, 'view[ing] technology as a creation that can transcend the original purposes of its creator and take on an independent existence and will of its own'; and, on the other, the 'technophiles', those who 'contend that technology is value-neutral, merely a tool that can be used for good or ill', and so embraced the new possibilities offered by emerging technologies.[19] Importantly, the distinction outlined here by Beauchamp is concerned not merely with the destructive or creative capabilities opened up by new technological possibilities themselves, but also and more fundamentally with the significance of this technology for our broader understanding of human agency:

> The question … is this: is the technology in dystopian fiction merely an instrument in the hands of the state's totalitarian rulers, used by them to enforce a set of values extrinsic to the technology itself, or is it, rather, an autonomous force that determines the values and thus shapes the society in its own image, a force to which even the putative rulers—the Well-Doers and Big Brothers and World Controllers—are subservient?[20]

In the introduction, we examined a number of critics for whom, as the twentieth century wore on, this question became crucial. Adorno and Horkheimer, for example, writing in 1944, expressed fears of the growing influence of 'technical apparatus', which escalates 'society's domination over nature to unimagined heights' while also causing 'individuals as such [to vanish] before the apparatus they serve'—people may thus become mere appendages to the machines they supposedly control.[21] Conversely, the technocratic movement that emerged

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[19] Gorman Beauchamp, 'Technology in the Dystopian Novel', *Modern Fiction Studies*, vol. 32, no. 1, 1986, p. 54
[20] Beauchamp, p. 54
[21] Theodor Adorno and Max Horkheimer, *Dialectic of Enlightenment: philosophical fragments*,

particularly in the US during the interwar period, most often associated with Thorstein Veblen and Howard Scott, asserted the need to eliminate waste in production through the rationalist organisation of industry by a 'soviet of technicians'.[22] Veblen, writing in 1919, argued that any such 'incoming directorate', established along technocratic lines, would of necessity be 'of a technological nature', while its 'purpose' would be 'the care of the community's material welfare by a more competent management of the country's industrial system'.[23] In this view, instrumental rationalism, interpreted as a value-free mode of organisation, becomes the only sensible basis on which to develop human society.

In line with such concerns, much SF from this time centres on this pivotal conflict between technological determinism and human agency—the question of whether technology undermines or supports a view of the human as an autonomous, self-realising entity. The most significant technophilic (to borrow Beauchamp's term) response to this question emerged from the magazine SF being produced in the US from the 1920s onwards. The US had emerged from the First World War with the fastest growing economy in the world, and the subsequent decade was the period of the 'New Era', a time of rising consumerism, accelerating urbanisation, greater education, and expanding developments in communications and transport. Modern SF emerged directly from such advances in media technologies, as the development of cheaper print and transport processes in the late nineteenth and early twentieth centuries contributed to a booming market for pulp fiction, from which emerged *Amazing Stories*, *Astounding Stories of Super Science*, *Wonder Stories*, and the other early SF magazines. Such publications standardised and marketed a newly-recognisable style of 'science fiction', consolidating previously disparate strands of speculative scientific fiction into a coherent genre and imbuing it with a distinct techno-futurist style.

1944, Stanford University Press, 2002, p. xvii

[22] See Thorstein Veblen, 'A Memorandum on a Practicable Soviet of Technicians', 1919, *The Engineers and the Price System*, B.W. Huebsch, 1921, pp. 138-169. For an overview of the technocratic movement, see Val Dusek, 'Technocracy', *Philosophy of Technology: an introduction*, Blackwell Publishing, 2006, pp. 38-52

[23] Veblen, p. 141

As John Cheng notes, the writers and editors of the early pulp SF magazines 'genuinely believed that science held imaginative potential and progressive purpose'.[24] Their mission was to explore the exciting potential of future science and technology, and to share this information with their readers. Hence Hugo Gernsback, in the editorial for the first issue of *Amazing Stories* (April 1926), proclaimed that stories of 'scientifiction' would be remembered 'as having blazed a new trail, not only in literature and fiction, but in progress as well'.[25] The stories of 'super-science' that filled the pages of the early SF magazines routinely pitted macho-scientist protagonists against the forces of nature and the expanses of the universe, and were frequently, though not always, underpinned by a techno-imperialist ideology in which technical knowledge becomes the sole marker of human development at the expense of any engagement with wider cultural or political questions. Nor was this technocratic attitude limited to the US: within the British tradition, a more subdued version of this trend can be seen in the interwar works of Wells, whose *Men Like Gods* and *The Shape of Things to Come* (1933, later filmed, with a screenplay written by Wells himself, as *Things to Come* in 1936) envision future utopian technocracies organised along rationalist—and often eugenicist—lines.

In contrast to the technological optimism evident in the American pulps, many of the speculative works produced during the interwar period, particularly in Britain and Europe, displayed a more technophobic attitude. Although the European economies underwent slow recovery after the war, with improving standards of working and living conditions and greater access to new technological luxuries such as radio, automobiles and film, many of its citizens nevertheless suffered from a kind of post-war cultural trauma that contrasted with the more optimistic economic and cultural outlook emerging from the US. The distrust of progress provoked by the war, famously encapsulated in the apocalyptic imagery of T.S. Eliot's 'The Waste Land' (1922), is also evident in many of the speculative works written in this period. Many of these works encode a conservative sense of human nature within broader anxieties

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[24] John Cheng, *Astounding Wonder: imagining science and science fiction in interwar America*, University of Pennsylvania Press, 2012, p. 83

[25] Hugo Gernsback, 'A New Sort of Magazine', *Amazing Stories*, vol. 1, no. 1, April 1926, p. 3, web, *Internet Archive*, archive.org/stream/Amazing_Stories_v01n01_1926-04_Team-DPP#page/n3/mode/2up, accessed June 2017

regarding the threat of technological and scientific progress. Karel Čapek's 1920 play, *R.U.R.*, for instance, captures the sense of anxiety surrounding new modes of intensive and rationalised industrial production, in which labourers come to be replaced by 'robots' (a Czech word which translates roughly into 'slave')—mechanised workers within ultra-rationalised systems of capitalist production. This thematic of the mechanised human is frequent in the speculative fiction of the 1920s and 1930s. E.V. Odle's *The Clockwork Man* (1923), for example, depicts a future in which each man has become fitted with a 'clock' that dictates his thoughts and feelings, doing away with 'death and disease, with change and decay', but also with free will and agency.[26] Fritz Lang's *Metropolis* (1927), too, an expressionist silent film set in a future technocratic dystopia, features a number of iconic shots depicting the mechanisation of the human: masses of identical labourers marching to and from factories, or exhausted workers struggling to manipulate the hands of an oversized clock-face in time with a series of flashing lights. Each of these works can be read as a reaction against modern mechanisation, and as articulating a traditionalist view of human nature as requiring preservation from the distortions of mechanical rationalisation.

As Beauchamp notes, however, in such technophobic works the 'greatest threat posed by technology ... is not that man's mechanical creations will come to rule over him like some alien power but rather that he will so completely introject the ethos of technology that his highest aspiration will be to become a machine himself'.[27] The most famous exploration of this theme of the technological absorption of the human is surely *Brave New World*, yet Huxley was not the only early twentieth-century speculative writer anxious about the seeming embrace of the principles of mass consumption and rationalist materialism within western Europe and the US. An earlier appearance of this theme can also be found in E. M. Forster's celebrated 1909 short story, 'The Machine Stops', which depicts a harrowing image of the technological suicide of the human race: 'man who had once made god in his image, and had mirrored his strength on the constellations, beautiful naked man was dying, strangled in the garments that

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[26] E.V. Odle, *The Clockwork Man*, 1923, HiLoBooks, 2013, p. 139
[27] Beauchamp, p. 62

he had woven'.[28] A similar position can also be found in Soviet author Yevgeny Zamyatin's famous techno-dystopia, *We* (1924), which appeared in English translation decades before its publication in the USSR. *We* depicts a humanity that has voluntarily relinquished all individuality and agency, reduced to a willing cog in a social machine set to undertake the 'integration of the grandiose, endless equalization of all Creation'.[29] The satire of Zamyatin's novel is aimed not merely, like Kafka's *The Trial* (1925), against dehumanising bureaucratic autocracy, but more broadly against the usurpation and attempted dissolution of human historical agency—against the idea, highly relevant in the context of post-revolution Russia, that there could ever be a *final* revolution, or that history could be made to stop at the moment of revolutionary victory. The preoccupation with a changed experience of time under modernity, and with the clock as a symbol of dehumanising rationalisation, can be seen also in the works of Odle and Lang as described above—as we will see in more detail in our discussion of Huxley's dystopian work, technocracy is ultimately interpreted in these works as a force that severs the connection between the individual and any meaningful experience of time.

This has been a necessarily brief sweep through the SF of the interwar period, but it serves to demonstrate the extent to which these narratives betray a host of anxieties concerning the relationship between technology and humanity. The figure of the trans-human serves to encode both the technophobic and technophilic strains of humanist thought in SF as outlined above: while some works express fears regarding technological progress and the technological usurpation of human nature—evident in the robots and mechanised human labourers common to the period—others focus on the new possibilities for human advance and transcendence brought about by growing control over the material world. The trend towards technophilia is most evident in the techno-imperialism of many of the early US pulp stories, in which, as we will see in Smith's *Skylark* series, the term 'human' itself becomes a byword for the rational and intellectual command of space and time. At the same time, the anxieties expressed in the technophobic, predominately European tradition centre not so much—as we might put it—on

[28] E. M. Forster, 'The Machine Stops', 1909, *The Science Fiction Hall of Fame: Volume IIB*, edited by Ben Bova, Avon Books, 1973, p. 278
[29] Yevgeny Zamyatin, *We*, 1924, Penguin Modern Classics, 1977, p.19

the threat posed by Frankenstein's monster as on the terror that modern humans may be unwittingly remade as monsters themselves. With such sinister possibilities in mind, we turn now to Huxley's *Brave New World*.

The 'life-worshipper' and the end of time in Huxley's *Brave New World*

Aldous Huxley's *Brave New World*, described by Edward James as 'the best-known work of British SF from between the wars', is also perhaps the most famous technophobic work in twentieth-century SF.[30] Its remarkable popularity in this regard no doubt stems from the fact that, as John Clute has noted, it supplies a ready 'compendium of usable points and quotable jibes' on the subject of technological saturation, a theme that was to become of ever-greater importance within both SF and wider culture as the century advanced.[31] Rebecca West, reviewing the novel in 1932, noted that 'the book describes the world as Mr. Huxley sees it may become if certain modern tendencies grow dominant'—hence, she goes on, '*Brave New World* is of major importance. One could sanely ask for nothing more than it gives'.[32] Bertrand Russell, too, noted that 'while Mr. Huxley's prophecy is meant to be fantastic, it is all too likely to come true', arguing that the novel offers a much-needed warning against the 'illusion of freedom' engendered by material comfort.[33] Other contemporary reviewers were less taken with the novel's futuristic bent: Granville Hicks, for example, noted that 'With war in Asia, bankruptcy in Europe and starvation everywhere', Huxley was 'busy worrying about the unpleasantness of life in the utopia that, as he sees it, is just a century or two ahead'.[34] On the

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[30] Edward James, *Science Fiction in the Twentieth Century*, Oxford University Press, 1994, p. 35. Don D'Ammassa states that 'Aldous Huxley's *Brave New World* is undoubtedly the best known dystopia of all time', while Peter Firchow argues that *Brave New World* 'has become a kind of byword for a society in which the values (or nonvalues) of scientific technology are dominant, and which has therefore reduced man to a species of machine'. See Don D'Ammassa, *The Encyclopedia of Science Fiction*, Facts on File, 2005, p. 55, and Peter Firchow, 'Science and Conscience in Huxley's *Brave New World*', *Contemporary Literature*, vol. 16, no. 3, 1975, p. 301.

[31] John Clute, 'Huxley, Aldous', 2011, par. 3, web, *The Encyclopedia of Science Fiction*, edited by John Clute et al, Gollancz, www.sf-encyclopedia.com/entry/huxley_aldous, accessed June 2017

[32] Rebecca West, 'Rebecca West, review in *Daily Telegraph*', 1932, *Aldous Huxley: the critical heritage* [henceforth *AHCH*], edited by Donald Watt, 1975, Routledge, 1997, p. 197

[33] Bertrand Russell, 'Bertrand Russell, review in *New Leader*', 1932, *AHCH*, p. 212

[34] Granville Hicks, 'Graville Hicks, review in *New Republic*', 1932, *AHCH*, p. 219

whole, however, Huxley's novel has been critically regarded as a prescient critique of the twinned dangers of technological materialism and political apathy. Neil Postman has perhaps made this argument most forcefully, stating that 'What Huxley teaches us is that in the age of advanced technology, spiritual devastation is more likely to come from an enemy with a smiling face than from one whose countenance exudes suspicion and hate'.[35] For Postman, writing in the US in the mid-1980s, Huxley's pessimistic vision was 'well under way toward being realized'—the world of soma and the feelies was, it seems, already near at hand.[36]

Brave New World also marks something of a transition point for Huxley as an author: prior to its appearance, Huxley had displayed little interest in producing speculative fiction, instead focussing on plaintive works of gentle satire chronicling the disenchantment and nihilism of the post-war generation. As David Leon Hidgon notes, 'As late as 1929, Huxley had no interest in and even no sympathy for utopian or futuristic fiction', having been a frequent critic of the technocratic and utopian bent of his contemporary Wells.[37] Indeed, the genesis of *Brave New World* appears, initially at least, to have been Huxley's desire to poke fun at Wells's all-too-optimistic vision of the utopian possibilities of technology. Sybille Bedford, in her biography of Huxley, describes how the novel began 'light-heartedly enough' in this sardonic fashion: Huxley was required to produce another work, but 'felt like holding back from another straight novel',[38] and so decided, as Arthur Goldsmith puts it, to have 'a little fun pulling the leg of H. G. Wells'.[39] Following the publication of *Brave New World* in 1932, however, alongside a voluminous output of essays, Huxley turned more frequently to a speculative framework as vehicle for his social commentary in works such as *After Many a Summer* (1939), *Ape and Essence* (1948), and *Island* (1962).

Nor was the novel Huxley's first jab at the Wellsian technocratic viewpoint. Throughout his works of the 1920s, there is a clear strain of cynicism directed towards

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[35] Neil Postman, *Amusing Ourselves to Death: public discourse in an age of show business*, 1985, Penguin Books, 2005, p. 155

[36] Postman, p. 156

[37] David Leon Hidgon, *Wandering into* Brave New World, Rodopi, 2013, p. 1

[38] Sybille Bedford, *Aldous Huxley: a biography*, 1973, Macmillan Papermac, 1993, p. 243

[39] Quoted in Bedford, p. 244

contemporary cultural and scientific progression. In *Point Counter Point* (1928), for instance, one of Huxley's characters, the artist Rampion, paints a visual chronicle of history 'according to H. G. Wells', consisting of an ascending line of human figures, 'growing larger and larger at every repetition', moving in 'a triumphant spiral clean off the paper, towards Utopian infinity'—this contrasts with Rampion's (and Huxley's) own classicist view of history as peaking in ancient Greece.[40] At the same time, however, as David Bradshaw has argued, it is important not to overstate the differences between Huxley and Wells: the former's views on Wellsian social engineering, despite his famous denunciation of the principle in *Brave New World*, are never wholly consistent, and if Huxley did not approve of Wells's overtly utopian attitude towards scientific advancement, neither did he advocate a Luddite position on technology.[41]

This distinction informs the reading of the novel that I will be pursuing here. Set in the year 2540 AD, or 632 'AF' ('After Ford'), *Brave New World* depicts a dystopian Britain organised along principles of technocratic social engineering—including eugenics and the scientific management of labour and leisure—that have matured from their embryonic forms within Huxley's own time. Following first Bernard Marx, an 'Alpha' (i.e., highly intellectually developed) worker disenchanted with the superficiality of life in the 'World State', and later 'John the Savage', a 'primitive' yet eloquent member of a 'Savage Reservation' brought to Britain to witness the wonders of technological advancement, the novel offers a satirical caricature of the human utterly subsumed beneath an ideology of technological efficiency and normalisation. The novel has traditionally been read as a bleak summation of Huxley's views regarding the dehumanising impacts of capitalist consumerism and scientific management—as the archetypal example of what Zygmunt Bauman (borrowing from Nigel Thrift) calls a 'Joshua discourse', a narrative world characterised by 'monotony, regularity, repetitiveness

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[40] Aldous Huxley, *Point Counter Point* [henceforth *PCP*], 1928, Chatto & Windus, 1974, pp. 290-291

[41] See David Bradshaw, 'Open Conspirators: Huxley and H. G. Wells, 1927–35', *The Hidden Huxley: contempt and compassion for the masses* [henceforth *HH*], Faber and Faber, 1994, pp. 31-43

and predictability'.[42] I will argue that the novel invokes the figure of the trans-human as an index of the adverse consequences of such contemporary industrial and consumerist practices for human agency. Yet the novel also contains an early expression of Huxley's philosophy concerning the 'best' or 'truest' form of human individual. This human type, which Huxley terms the 'life-worshipper', does not wholly reject either the crass materialism or the instrumental rationalism depicted in *Brave New World*, but rather seeks to achieve a balance between the material-biological and rational-intellectual aspects of the human being—between humanity's 'spiritual' and 'animal' natures. This is not, however, another version of the supposedly supreme masculinist human figure of Conan Doyle and London. Huxley's ideal of the human, as we will see, emphasises communalities, rather than conflict, between different human 'kinds'. In *Brave New World*, it is 'John the Savage', an ostensibly 'primitive' character, who comes the closest of all individuals in the novel to achieving the synthesis of 'animal' and 'spiritual' that Huxley saw as marking the truly 'human' individual.

We begin with a consideration of Huxley's conception of human agency as expressed in *Brave New World*. As noted in the previous section, Huxley's concerns in his novel, like Zamyatin's in *We*, centre not merely on technology itself, but on the capacity for technology to negatively determine the human. Christoph Bode even argues that Huxley's view of technology, far from being technophobic as is commonly thought, is in fact largely instrumental: 'it all depends on who uses [technology and] to what extent'.[43] Hence, Bode argues, the scientific procedures of *Brave New World* 'are explicitly presented as *means* to an end and not ends in themselves'.[44] Indeed, Huxley later incorporates many of the same procedures—used to extremely different effect—into Pala, the utopian society of *Island*. Given this, he goes on, Huxley must then be understood primarily as an idealist: the shape of society, he believed, is largely a reflection of human thought, and therefore the only effective way to influence social development is to try and change how people think.

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[42] Zygmunt Bauman, *Liquid Modernity*, Polity Press, 2000, p. 55
[43] Christoph Bode, 'Aldous Huxley (1894-1963)', *Classics in Cultural Criticism, Vol. I: Britain*, edited by Bernd-Peter Lange, Peter Lang, 1990, p. 366
[44] Bode, p. 352, emphasis in original

Yet such an assessment seems only partially true. On the one hand, Huxley is indeed highly critical of the bland philistinism and superficial materialism of western culture, and condemns contemporary forms of leisure for failing to provide intellectual stimulus or, as he terms it in an essay from 1936, 'psychological rewards'.[45] Yet, on the other, he is equally critical of any tendency towards idealism or abstract intellectualism that has lost touch with the material world. Hence Rampion, in *Point Counter Point*, denounces his friend Philip Quarles— a self-portrait of Huxley himself—for what he calls 'whoring after abstractions', arguing that 'if you allow yourself to be influenced by non-human, absolute considerations, then you inevitably make either a fool of yourself, or a villain, or perhaps both'.[46] Later, in *Ends and Means*, a 1937 study into the 'nature of ideals', Huxley argues that 'children should be taught to examine all personifications, all metaphors, all abstractions occurring in the articles they read, the speeches they listen to. They must learn to translate these empty words into terms of concrete contemporary reality'.[47]

In the introduction, we examined a number of critics who expressed anxiety over the dehumanising effects of intellectual rationalism within twentieth-century western society— what Heidegger terms the 'enframing' of the material world within abstracted systems of thought. In Huxley, too, there is a necessary balance that must be struck between the subjective world of human thought and feeling and the objective external environment: 'Good education', he argues in the above 1937 work, 'will be fully effective only when there are good social conditions and, among individuals, good beliefs and feelings; but social conditions will not be altogether satisfactory until there is good education'.[48] This dialectical relationship between society and the human individual indicates that, for Huxley, the material and social worlds never cease to matter, and that to address the spiritual crisis that he saw as afflicting western civilisation, it was necessary to address both the crisis of intellectual stultification *and* the material-social conditions contributing to this crisis.

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[45] Aldous Huxley, 'The Man Without a Job', 1936, *HH*, p. 232
[46] Huxley, *PCP*, pp. 559-560
[47] Aldous Huxley, *Ends and Means: an enquiry into the nature of ideals and into the methods employed for their realization* [henceforth *EM*], 1937, Chatto & Windus, 1938, p. 215
[48] Huxley, *EM*, p. 180

In particular, *Brave New World* is concerned with what Huxley perceived to be the numbing superficiality and materialism of 1920s American culture. During the years of the 'Roaring Twenties', the US was fast becoming the dominant cultural producer of the western world, a trend fuelled by the advent of Hollywood cinema and a US economic surge which increasingly brought American cultural commodities to European markets.[49] (Arthur C. Clarke, for example, growing up in Somerset, would encounter his first American SF pulp magazine, a copy of *Astounding Stories*, in 1930.)[50] Nor was Huxley the only British speculative writer to express anxiety concerning this growing influence of American economic and cultural trends: Olaf Stapledon predicted the eventual 'Americanization' of the globe in *Last and First Men*, warning against a materialist mindset 'wholly concerned with the values of individual life', driven by 'a crude materialistic dogma' and 'a denial of all those finer qualities which had emerged to be the spirit of man'.[51] Stapledon's critique of American values—in which 'God was the supreme Boss, the universal Employer ... and to be wealthy, therefore, was to be respected as one of God's chief agents'—thus demonstrate a shared fear with Huxley of the corrupting materialism of American culture.[52]

Huxley's fears, however, take a more concrete form than Stapledon's abstract anxieties regarding the 'American' mindset. While Huxley's sardonic targets in the novel are wide-ranging and complex, one unambiguous target is the increasingly dehumanising conditions of industrialisation, and in particular the trend towards the massification of human individuals stimulated by the processes of capitalist production and consumption. Such processes are symbolised in the novel by the figure of Henry Ford, who was a frequent target of criticism in Huxley's essays, and even comes to replace God as the principal deity of the World State.[53] At

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[49] Jerome Meckier discusses Huxley's 'Americanization' of the *Brave New World* typescript in 1931, noting that 'With Ford as synonym and stand-in, each new uncomplimentary use of his name further condemned the World State for being America writ large' (p. 427). See Jerome Meckier, 'Aldous Huxley's "Americanization" of the *Brave New World* Typescript', *Twentieth Century Literature*, vol. 48, no. 4, 2002, pp. 427-460.

[50] Arthur C. Clarke, *Astounding Days: the science fictional autobiography*, Gollancz, 1989, p. 11

[51] Stapledon, pp. 54-5

[52] Stapledon, pp. 54-5

[53] See, for example, his essays 'Sight-seeing in Alien England' (1931) and 'The Victory of Art over Humanity' (1931), both reprinted in *HH*.

the time of writing *Brave New World*, Huxley noted that 'English motor factories [were] not quite so completely rationalised as the corresponding thing in America'—yet 'the difference [was] only one of degree, not of kind'.[54] The anti-humanist implications of the Fordist assembly-line were, for Huxley, clear. In the first instance, such intense rationalisation of the workplace under Taylorist and Fordist principles was, as he remarks in *Brave New World Revisited* (1958), fundamentally anti-democratic, since 'democracy can hardly be expected to flourish in societies where political and economic power is being progressively concentrated and centralized'.[55] This centralisation was evident both at the micro-level—in the form of strict hierarchies within atomised workplaces that stripped 'the Little Man' of both skill and responsibility in their labour—and at the macro-level, resulting in the creation of monopolistic corporations as 'more and more economic power comes to be wielded by fewer and fewer people'.[56] The resulting capitalist society was thus one in which:

> The Power Elite directly employs several millions of the country's working force in its factories, offices and stores, controls many millions more by lending them the money to buy its products, and, through its ownership of the media of mass communication, influences the thoughts, the feelings and the actions of virtually everybody. To parody the words of Winston Churchill, never have so many been manipulated so much by so few.[57]

This passage highlights what was, for Huxley, the most serious consequence of economic and political massification: the complete loss of agency experienced by the human subject. With the implementation of mass production, it seemed inevitable that the human individual would lose significance relative to the larger population, since any attempt to organise such populations must necessarily be carried out on a scale at which the individual will cease to matter. The resulting alienation of the labourer within industrial production, 'condemned to psychological poverty' as opportunities for creativity are more and more removed from the daily experience of factory life, is satirised in *Brave New World* in the mass production of

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[54] Huxley, 'The Victory of Art over Humanity', 1931, *HH*, p. 77
[55] Aldous Huxley, *Brave New World Revisited* [henceforth *BNWR*], 1958, *Brave New World & Brave New World Revisited*, Harper Perennial, 2004, pp. 251-252
[56] Huxley, *BNWR*, p. 252
[57] Huxley, *BNWR*, p. 252

actual workers themselves in the World State: 'standard Gammas, unvarying Deltas, uniform Epsilons. Millions of identical twins. The principle of mass production at last applied to biology'.[58]

In giving expression to such anxieties, Huxley anticipates Foucault's later argument that, since the late eighteenth century, political power has been characterised by a 'biopolitics … that is directed not at man-as-body but at man-as-species'.[59] Under such a system, Foucault argues, 'bodies are replaced by general biological processes', managed by 'a technology which brings together the mass effect characteristics of a population, [and] which tries to control the series of random events that can occur in a living mass'.[60] Biopolitics shifts the political emphasis from individual to species—from an emphasis on developing social structures designed for the needs of individuals towards the technocratic manipulation of individuals for the benefit of social stability. The governance of the World State in *Brave New World* could thus be characterised as a form of extreme biopolitics, with the technological processes of standardisation and massification having been extended even to the cellular level: each individual of the World State is conceived, developed and 'decanted' in a state laboratory, manipulated by external factors such as temperature and duration of gestation that determine whether the individual will be a lowly Delta labourer or bright Alpha scientist.

The goal of such processes, as explained by the Director of the 'Hatchery', is 'social stability': 'Standard men and women; in uniform batches. The whole of a small factory staffed with the products of a single bokanovskified egg'.[61] Citizens are divided into specific classes characterised by their intellectual abilities and physical stature, from the charismatic Alphas and Betas at the higher end of the scale to the stunted Epsilons and Gammas at the lower. Hence, one of the key fears expressed in *Brave New World* concerns the taming of the multiplicity of human nature into reproducible units under the ethos of a socio-economic programme bent on

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[58] Huxley, 'The Victory of Art over Humanity', *HH*, p. 78; Aldous Huxley, *Brave New World* [henceforth *BNW*], 1932, *Brave New World & Brave New World Revisited*, Harper Perennial, 2004, p. 19
[59] Michel Foucault, *Society Must Be Defended: lectures at the Collège de France, 1975-76*, translated by David Macey, Picador, 2003, p. 243
[60] Foucault, p. 249
[61] Huxley, *BNW*, p. 18

standardisation and stability—such a 'reduction of [human] multiplicity to unity', as Huxley described it in 1958, was engendered by the implementation of scientific rationality within human processes.[62]

Moreover, such anxieties over developments in industrial production are linked with those aroused by the other major corrupting force in technocratic capitalism: mass consumer culture. Huxley was, as Adorno described him, a 'critic ... of civilisation', and in particular of the popular leisure activities—cinema, radio, and even newspapers—that he saw as merely escapist distractions from more pressing social and intellectual questions.[63] In an essay from 1929, in which he describes his first visit to a 'talkie' cinema show, Huxley links this new form of entertainment to an array of what he regards as wholly negative developments in the spheres of both culture and economics. He finally delivers a sweeping critique of cinema alongside the other negative tendencies that he regards as having negatively impacted on western civilisation, stemming particularly from the impacts of American capitalism and cultural influence:

> It [the cinema] is a corruption as novel as the régime under which … all the rest of us now live—as novel as protestantism and capitalism; as novel as urbanization and democracy and the apotheosis of the Average Man; as novel as Benjamin-Franklinism and the no less repulsive philosophy and ethic of the young Good Timer; as novel as creation-saving machinery and the thought-saving, time-killing press; as novel as Taylorized work and mechanized amusement.[64]

As with the Fordist factory in the realm of work, the anti-humanist implications of routinised leisure are, for Huxley, clear: such outlets are 'addictions', 'instruments of information and persuasion', that surreptitiously rob the individual of agency by reducing them to 'reading-addicts, hearing-addicts, seeing-addicts'.[65]

Hence, in *Brave New World*, the citizens of the World State regularly indulge in 'soma', a hallucinogenic drug distributed by the government, and attend the 'feelies', a largely pornographic successor to the 'talkies' in which all the senses are stimulated, all the while

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[62] Huxley, *BNW*, p. 254

[63] Theodor W. Adorno and Max Horkheimer, *Dialectic of Enlightenment: philosophical fragments*, 1944, Stanford University Press, 2002, p. xvii

[64] Aldous Huxley, 'Silence Is Golden: 1929', 1929, *Do What You Will* [henceforth *DWYW*], 1936, Watts & Co., 1937, p. 48

[65] Huxley, *EM*, p. 212-213

enjoying an abundance of non-reproductive sex enabled by government-mandated sterilisation and birth control. Huxley's particular issue with sound films, which began to appear in the late 1920s, lay in the fact that, as Laura Frost notes, they are 'particularly corporeal': 'For Huxley, far from being a technological advancement, cinema is symptomatic of cultural degeneration, and the introduction of sound was a particularly alarming development because of its implications for bodily pleasure'.[66] Huxley's critique of the talkies is thus expressed in a distinctly Cartesian mode—cinema prioritises the body over the mind—while his own reconfiguration of sound film in *Brave New World* (the 'feelies') stresses this link between bodily satisfaction and political apathy. The true risk of such fleshly satisfactions, Huxley warns, lies in the all-too-easy escape that they provide from the complexities and ambiguities of the real world: the characters featured in his erotic feely, *Three Weeks in a Helicopter*, materialise to spectators as 'incomparably more solid-looking than they would have seemed in actual flesh and blood, far more real than reality'.[67] Frequent indulgence in such escapist pleasure, as with that of other 'mechanized amusements' of the 1920s, comes at the cost of genuine contact with the 'real', a category that would come to preoccupy Huxley more and more after the publication of *Brave New World* as he began to explore Eastern mysticism and, famously, to experiment with hallucinogens.[68]

The truly important point, however, is that the citizens of the World State labour under the delusion that their detached enjoyment of such activities is a reflection of their own free will, as demonstrated in this exchange between Bernard and Beta worker Lenina:

> 'Don't you wish you were free, Lenina?'
> 'I don't know what you mean. I am free. Free to have the most wonderful time. Everybody's happy nowadays.'
> He laughed, 'Yes, "Everybody's happy nowadays." We begin giving the children that at five.'[69]

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[66] Laura Frost, 'Huxley's Feelies: the cinema of sensation in *Brave New World*', *Twentieth Century Literature*, vol. 52, no. 4, 2006, p. 447

[67] Huxley, *BNW*, p. 154

[68] See *The Doors of Perception* (1954), in which Huxley recounts his subjective experiences after ingesting mescaline (an hallucinogenic substance derived from a plant native to Mexico and the American South), and *Heaven and Hell* (1956), in which he examines the history of mystical experience and its importance for developing a broader understanding of the nature of reality and the self.

[69] Huxley, *BNW*, p. 90

Lenina here offers a vision of a transhumanist ontology: her automatic responses resemble a machinic process, a mechanised input-output procedure in which encoded propagandist ideas are reproduced without intellectual effort. Yet this process simply represents a more extreme version of a process Huxley viewed as already ongoing within consumer capitalism: the conditioning of individuals into 'that race of perfect producers and consumers of which industry has need … producing and preserving that stability and uniformity without which machines cannot be used to their maximum advantage'.[70] This notion of individuals as 'machines' whose purpose is to maintain social stability returns us once again to the Foucauldian image of the biopolitical subjugation of the human individual to the needs of the species, satirised in *Brave New World* by the 'conscription of consumption' enforced by the World State: 'Every man, woman and child compelled to consume so much a year. In the interests of industry'.[71] As Huxley wrote in 1939, such 'incessant stimulation from without', the result of unthinking consumption, 'is a source of bondage', one to which citizens within a materialist-capitalist society, consciously or unconsciously, sacrifice their agency.[72]

Brave New World thus offers a vision of the trans-human—the technologically penetrated and determined human whose ontology is rooted as much in the technological as biological realm—yet a configuration of the trans-human that is very far from the utopian vision of transcendent consciousness propagated by More or by Huxley's brother Julian. Technological processes are viewed as having the potential to negatively transform the human into a passive producing-consuming machine, a mere cog in a socio-economic system that takes precedence over its individual human components. *Brave New World* paints a grim picture of a social totality engineered with scientific precision: the World State is a great biological machine, a clockwork social body whose rhythms have been standardised within a narrow, pre-determined spectrum of possibilities, and where the human species—reduced to the form of a mechanised mass of producing and consuming individuals—has itself been rendered technologically reproducible.

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[70] Huxley, 'Science and Civilisation', 1932, *HH*, p. 110
[71] Huxley, *BNW*, p. 54
[72] Aldous Huxley, *After Many a Summer* [henceforth *AMS*], 1939, Granada Publishing, 1980, p. 94

It is thus a Foucauldian nightmare: literal 'State control of the biological', engineered on a social level to ensure that all possible sources of volatility—'the ratio of births to deaths, the rate of reproduction, the fertility of a population, and so on', as well as 'the direct effects of the geographical, climatic, or hydrographic environment'—are brought into strict line with social requirements.[73] In this way, the novel offers a critical imaginative response to the damaging consequences of the socio-economic developments of the early part of the century— particularly industrial Taylorism and Fordism and the growth of conspicuous consumption stimulated by advertising 'propaganda'—which Huxley viewed as corrupting both to the intellect and to the human capacity to create meaning and shape the world.

Yet, although *Brave New World* does not seem to offer any positive alternatives to its dark sketch of technological saturation, it is at least clear, from both the novel and Huxley's other writings, that this is not a simple case of technological determinism. The machine, so to speak, does not *inevitably* degrade the human in the novel—if Huxley is not a pure idealist in his attitudes towards social and technological change, as discussed above, neither is he in this regard a straightforward materialist. Indeed, the novel contains various characters who are resistant to the ideological indoctrination employed by the World State: Bernard Marx, the discontented yet ultimately superficial Alpha; Helmholtz Watson, a creative writer and dissident, ironically employed at the 'College of Emotional Engineering' to pen 'feely scenarios' and 'slogans and hypnopaedic rhymes'[74]; and Mustapha Mond, one of the 'World Controllers', who recognises the shortcomings of the civilisation over which he presides, yet who nevertheless argues that agency and creativity are worth sacrificing, since they are 'incompatible with happiness'.[75] Mond, in fact, recognises the threat posed to the World State by intellectualism and idealism: when questioned as to why all individuals are not designed to be high-functioning Alphas, Mond responds that 'A society of Alphas couldn't fail to be unstable and miserable', since such individuals, 'capable (within limits) of making a free choice

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[73] Foucault, p. 240, 243
[74] Huxley, *BNW*, p. 71
[75] Huxley, *BNW*, p. 202

and assuming responsibilities', would come into conflict with a society based on the relinquishing of individual will.[76]

The most significant character for understanding Huxley's conception of the 'ideal' human is 'John the Savage'. John is an idealistic young man raised in a 'Savage Reservation', an ostensibly 'primitive' community which, 'owing to unfavourable climatic or geographical conditions', has 'not been worth the expense of civilising'.[77] The Savage Reservation is home to a number of pre-modern human civilisations, which function as tourist attractions for citizens of the World State. On one such trip, Bernard and Lenina encounter John, whose mother Linda, a British Beta worker, had become stranded in the Reservation years before. Bernard and Lenina bring John and his mother back to Britain, and the latter half of the novel chronicles John's exposure to, and increasing disillusionment with, what he views as the hedonism and moral decadence of modern society. It is with John as his mouthpiece that Huxley undertakes his most thorough-going criticisms of the superficiality and nihilism of contemporary western life—the novel ends with a famously bleak image of John's suicide, having failed in his attempt to escape from the nightmare of happiness and recover some sense of existential meaning.

Hidgon argues that the inspiration for the episode in the Savage Reservation sprang from materials gathered during Huxley's round-the-world trip, which took place from September 1925 to June 1926. This trip took Huxley and his wife Maria through India and a host of Southeast Asian countries to Japan, where they crossed the Pacific to America, taking in San Francisco and New York as well as the more rugged terrains of Arizona and New Mexico.[78] It was from Huxley's experiences in these latter regions in particular, Hidgon argues, and from his personal encounters with the Hopi and Zuni Native Americans that reside there, that the inspiration for the Reservation derives.[79]

Indeed, the extreme contrasts in human existence that Huxley encountered during the few weeks that he spent in America, and more generally in the nine months that he spent travelling from the 'somewhat Extreme Orient' to the booming United States, must have been

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[76] Huxley, *BNW*, p. 200
[77] Huxley, *BNW*, p. 149
[78] For a full account of this trip, see Hidgon, pp. 1-25 and Bedford, pp. 162-176
[79] See Hidgon, pp. 143-194

profound. [80] The journey took Huxley from the 'squalor of suburban Bombay' to the skyscrapers of New York, a clash of cultures that left him, at his journey's end, with 'many exploded convictions, many perished certainties'. [81] Following one particularly memorable incident during a sailing trip down the coast of Borneo—in which a sailor armed with a knife threatened mutiny—Huxley commented on 'the precarious artificiality of all that seemed most solid and fundamental in our civilisation, of all that we take most for granted'. [82] He returned finally to London with an increased appreciation of the dialectical quality of human nature, an awareness of the fundamental dualism that defined the human being:

> In one country, [the traveller] will perceive, the true, fundamental standard is distorted by an excessive emphasising of hierarchic and aristocratic principles; in another by an excess of democracy. Here, too, much is made of work and energy for their own sakes; there, too much of mere being. In certain parts of the world he will find spirituality run wild; in others a stupid materialism that would deny the very existence of values. [83]

The implication here is of a need to balance spiritualism with materialism—to 'create … a standard of values that shall be timeless, as uncontingent on circumstances, as nearly absolute' as can be made. [84]

This is a preoccupation that grows in importance within Huxley's writings as time goes on. In *After Many a Summer*, for instance, Huxley dramatises some revealing conflicts between a variety of such limited worldviews, not one of which of which is adequately attentive to the full range of authentic human capacities and needs. The novel focusses on Jo Stoyte, an ageing business tycoon obsessed with extending the duration of his life through scientific means. After encountering an old record of an aristocrat who discovered the secret to eternal life, Stoyte succeeds in tracking down the man, only to discover that the latter has degenerated into an ape-like being who has lost the ability to speak. Such base materialist concerns, Huxley suggests, can only lead to a neglect of the spiritual cultivation of the self. The novel also focusses on

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[80] Quoted in Bedford, p. 174

[81] Aldous Huxley, *Jesting Pilate: an intellectual holiday* [henceforth *JP*], George H. Doran Company, 1926, p. 287

[82] Huxley, *JP*, p. 221

[83] Huxley, *JP*, pp. 290-291

[84] Huxley, *JP*, p. 291

other characters who, in contrast to Stoyte's narrow materialism, exhibit various ideological obsessions. Pete, a naïve revolutionary nationalist, for example, discounts the significance of the individual and instead glories in the death and destruction of war, while Jeremy Pordage, a haughty yet insecure intellectual, prioritises the pursuit of knowledge as more significant than material satisfaction.

Against these limited viewpoints, Huxley sets the wise Mr. Propter, who insists that human nature embraces both the 'animal' and the 'spirit', and insists that 'men's business is to make the human world safe for animals and spirits'.[85] The most complete expression of this philosophy may be found in Huxley's final novel, *Island*: set on Pala, an island utopia fashioned by a Scottish doctor and a Palanese monarch, the novel advocates a mix of western scientific pragmatism and a kind of eastern intellectual spiritualism. The 'modest ambition' of the Palanese way of life, as one of its citizens explains, is simply 'to live as fully human beings in harmony with the rest of life on this island', free from 'those senseless pointless cockfights between Man and Nature, between Nature and God, between the Flesh and the Spirit! Wisdom doesn't make those insane separations.'[86] Here again, we can see that balance of spirit and matter which, Huxley insists, is necessary for the true realisation of the human self.

Brave New World's John can be viewed as an early prototype for these later citizens of Pala. An inchoate mix of spiritualism and classical western culture, John is free from the strict social conditioning undergone by the citizens of the World State, while the Reservation itself is also far removed from the mechanised, sterile civilisation of Fordist Britain. As Bernard and Lenina arrive in the Reservation, they are greeted by a ritualistic ceremony involving 'a ghastly troop of monsters ... masked or painted out of all semblance of humanity', who engage in a 'strange limping dance' before collectively whipping a teenage boy into unconsciousness.[87] When questioned as to the purpose of the ceremony, John's explanation reveals a fertile mixture of spiritual influences and nature worship: it is, he states, for 'the sake of the pueblo— to make the rain come and the corn grow. And to please Pookong and Jesus'.[88] As with the

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[85] Huxley, *AMS*, p. 123
[86] Aldous Huxley, *Island*, 1962, Vintage Books, 2005, p. 210, 193
[87] Huxley, *BNW*, p. 108
[88] Huxley, *BNW*, p. 111

World State, sexuality is to the fore in the social and cultural life of the Reservation—but far from the fruitless couplings of the sterile workers, the sexual engagements of the 'Indians' are infused with libidinous significance: 'the men's deep savage affirmation of their manhood' is followed, 'in a neighing treble, [by] the women's answer'.[89] In contrast to the World State, entombed in its technological cocoon, the Reservation is instead entangled in nature, struggling with the natural processes of old age, exposure, starvation, disease and death long since banished from the social life of the World State. Hence Lenina's shock at the sight of an 'almost naked Indian ... profoundly wrinkled and black ... [his] body bent and emaciated to the bone', or the 'spectacle of two young women giving breast to their babies', or a 'dead dog lying on a rubbish heap'.[90]

The Reservation, then, is configured as the *yin* to the World State's *yang*, a vibrant and violent culture antithetical to the sophisticated yet impotent society of soma and feelies. Given the more 'natural' mode of life experienced in the Reservation, it would be easy to interpret this space as a kind of positive rural alternative to the dehumanising urbanism of the World State. Yet social life in the Reservation is underpinned by a set of superstitious beliefs that are just as intellectually vacuous as the feelies and soma. Huxley is centrally concerned with an investigation of how a concern for individual agency can be reconciled with social integration, and he sees this is as a key problem in both of the societies that he depicts—as Jerome Meckier argues, *Brave New World* as a whole 'marks the end of … the period of unchallenged individualism and comfortable humanitarianism'.[91] This shift can be seen both in the World State *and* in the Reservation: for all its differences, the latter parallels the former in its incapacity to tolerate difference and diversity. The inhabitants of the Reservation refuse to accept John's fierce individualism, instead making of him an outcast, a 'white-hair' denied participation in the social rituals of Reservation life. If, then, Huxley condemns the corruption of humanity by the technological processes of modern life, he is no more positively disposed towards any glib suggestion of a 'return' to nature, or to the idea that mechanical rhythms of

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[89] Huxley, *BNW*, p. 108
[90] Huxley, *BNW*, p. 105, 106, 107
[91] Jerome Meckier, 'A Neglected Huxley "Preface": his earliest synopsis of *Brave New World*', *Twentieth Century Literature*, vol. 25, no. 1, 1979, p. 17

factory and cinema could be replaced by a regression to the more 'organic' traditions of pueblo and plain. What is needed, he proposes, is a social system in which both the mind and body can flourish. This will not come about through any submission either to the logic of techno-rationality or to any naïve conceptions of the 'purity' of pre-technological life.

It is John who comes closest to this ideal combination in *Brave New World*. Born of the Savage Reservation, yet familiar, through his mother's stories, with the technological feats of the World State, John's worldview is a confused mix of conflicting impressions: 'Lying in bed, he would think of Heaven and London and Our Lady of Acoma and the rows and rows of babies in clean bottles and Jesus flying up and Linda flying up and the great Director of World Hatcheries and Awonawilona'.[92] More important than these two influences, however, is John's identification with a western literary culture which predates the World State itself, symbolised by the battered copy of Shakespeare's collected works discovered in the Reservation. Through his exploration of these texts, John is provided with a crucial temporal link to a cultural past that has elsewhere been suppressed in the name of social stability.

In one sense, Shakespeare is here employed as a symbol for a set of conservative western values—honour, nobility, transcendental suffering, sexual prudence, and so on—that provide John, as Mario Varricchio argues, with 'a transcendental idea of culture, which he sees as natural heritage, an old wisdom transmitted throughout the centuries'.[93] But it is also significant that Shakespeare is viewed by Huxley as a 'life-worshipper'—someone who balanced the animal and the spiritual sides of life in his works. Shakespeare, as Huxley wrote in 1936, along with a host of other great artists throughout history, 'is at one moment a positivist and at another a mystic: now haunted by the thought of death … and now a Dionysian child of nature: now a pessimist and now … an exuberant believer that God's in his heaven and all's right with the world'.[94] The life-worshipper is a 'manifold and discontinuous being … he is many different people': 'a series of distinct psychological states, a colony of distinct personalities', never beholden to or overly invested in any particular ideological worldview,

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[92] Huxley, *BNW*, p. 120

[93] Mario Varricchio, 'Power of Images/Images of Power in *Brave New World* and *Nineteen Eighty-Four*', *Utopian Studies*, vol. 10, no. 1, 1999, p. 101

[94] Huxley, 'Pascal', *DWYW*, p. 234

set of cognitive propositions, or form of sensual experience at the expense of all others.[95] Hence, Huxley argues, the life-worshipper is in a prime position to achieve the synthesis of oppositions necessary for the fullest appreciation of the 'primary fact of existence'.[96] Given this understanding of the life-worshipper, it is clear that the significance of Shakespeare's works in *Brave New World* goes beyond merely the literary or cultural: these works also provide a model for the balanced form of being—'so subtly refined and yet so brutal, so sensual and yet so spiritual'—that Huxley viewed as most favourable to the realisation of human potential.[97]

John's inability to integrate into the World State stems precisely from its lack of balance in this regard: in its attempt to maximise the sensual life, the World State has denied itself access to the spiritual; in its commitment to instrumental rationalism, it has cut itself off from the experience of human freedom. Unable to cope with either the hedonism, techno-rationalism, or lack of any familiar moral or spiritual life in the World State, John eventually finds himself rebelling against this particular form of spiritual death—against the vacuity of a purely materialist existence. In his conversation with Mustapha Mond, John attempts to outline his dissatisfaction with life in the World State. Moving first through the loss of religion, then through a vague conception of suffering as the necessary 'cost' for the proper alignment of the soul, in the end John claims from Mond simply the ambiguous right 'to be unhappy':

> the right to grow old and ugly and impotent; the right to have syphilis and cancer; the right to have too little to eat; the right to be lousy; the right to live in constant apprehension of what may happen tomorrow; the right to catch typhoid; the right to be tortured by unspeakable pains of every kind.[98]

In all of these ways, John insists that the human being is defined by being subject to the ills of a time-bound creature: anxiety, aging, mortality. Indeed, it is clear that John's rebellion against the World State is expressed above all through the category of time. Each of his grievances against the World State, for instance—his anger at Lenina's attempted seduction of him, his revulsion at the lack of sexual restraint in the World State, and his final desire to be allowed to

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[95] Huxley, 'Pascal', p. 234, 338
[96] Huxley, 'Pascal', p. 234
[97] Huxley, 'Pascal', p. 226
[98] Huxley, *BNW*, p. 215

age, catch diseases, and finally die in accordance with his own physical nature—is ultimately rooted in time since, for John, such things are only worth attaining if one has to strive or suffer to attain them, since 'tears are necessary' for virtue.[99]

In two essays published in 1936, Huxley outlines what he saw as some of the major consequences of industrialisation for western perceptions of time, as well as the mode of time most proper to the life-worshipper.[100] Like Lewis Mumford, Huxley views time as a 'recent invention', a concept 'hardly older than the United States' that was co-created with the 'locomotive', the 'factory', and the 'office' whose operations it now dictates.[101] In order to create the new sense of time that would serve the needs of industrialised society, western society necessarily had to sacrifice 'the majestic movement of cosmic time'—of 'sunrise, noon and sunset; of the full moon and the new; of equinox and solstice; of spring and summer, autumn and winter'.[102] As a result of this strict rationalisation, time is instead transformed within such societies into an 'artificial, machine-made' category: 'a collection of minutes, each of which must be filled with some business or amusement'.[103] Yet such 'mechanized labour and mechanized leisure' as fill the working or leisure time of most western citizens are 'mere substitutes for life'—a way of *escaping* from, rather than spending, time.[104] 'For a modern American or Englishman', Huxley writes, it is simply the case that 'waiting is a psychological torture'—in contrast with life in the 'Orient', where individuals have 'not lost the fine art of doing nothing'.[105] The importance of this ability to calmly accept the passage of time is later expanded on when Huxley outlines the mode of time proper to the 'life-worshipper', described as the 'present eternity of ecstatic timelessness which is the consummation of intense living'.[106] Rather than constantly striving towards future possibilities, Huxley argues, or conversely dwelling on past events, the true life-worshipper will strive towards a form of mindfulness in

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[99] Huxley, *BNW*, p. 213
[100] See Aldous Huxley, 'Time and the Machine', *The Olive Tree and Other Essays*, 1936, Chatto & Windus, 1947, pp. 122-124, and 'Pascal', *DWYW*, pp. 228-231
[101] Huxley, 'Time and the Machine', p. 122
[102] Huxley, 'Time and the Machine', p. 124
[103] Huxley, 'Time and the Machine', p. 124, 123
[104] Huxley, 'Pascal', *DWYW*, p. 229
[105] Huxley, 'Time and the Machine', p. 123
[106] Huxley, 'Pascal', p. 230

which 'present eternity' is prioritised over past and future. This mode of apprehending time is that which is most conducive to the mode of 'life-worshipping' that is the true goal of human existence.

In other words, time for Huxley must ultimately be *experienced*—to engage in escapism, or to invest too heavily in either past or future, is to deny the possibility of profound human existence in the present, and therefore to be denied access to any fully-rounded sense of reality. This clearly influences Huxley's representation of contrasting modes of apprehending temporality in *Brave New World*. For citizens of the World State, as for those of European or American capitalist societies, waiting is antithetical to happiness: whereas for John, allowing desire to remain unfulfilled constitutes a virtuous act, Lenina's automatic response to John's hesitation about sleeping with her is simply 'what for?'[107] For her and others of the World State, the lapse of time between identifying and satisfying a desire is simply unnecessary. As Varricchio argues, 'Desire is dead in *Brave New World*', since 'to admit the existence of it would be to recognize the failure of the ideal State'.[108] When confronted with 'the slings and arrows of outrageous fortune', as John explains to Mustapha Mond, the World State and its inhabitants 'neither suffer nor oppose them', but sidestep them altogether.[109]

At the same time, the social structures of the World State are underpinned by a total adherence to 'machine-made time' that extends even to the level of biological processes: foetuses in the World State are no longer born but 'decanted' according to strict social need, while death is no longer an arbitrary or personal event but one which takes place according to a stipulated plan which sees all individuals perish at sixty. In this context, 'mother' and 'father' have become dirty words, suppressed alongside any conceptions of family, monogamy, history, or anything else that implies a connection to a collective or biological past. In the technocratic World State, the forward movement of time, in both an individual and a socio-historical sense, effectively does not exist: every day in the individual's life is identical to both the previous day and to the days of their peers, organised strictly around cycles of work and leisure. The

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[107] Huxley, *BNW*, p. 156
[108] Varricchio, p. 99
[109] Huxley, *BNW*, p. 214

justification for such a temporal freeze is, as always, social stability: as Mond states, there can be 'No civilisation without stability', and 'No social stability without individual stability'.[110] Such stability necessarily entails temporal stasis—from the individual stasis of soma-addicted individuals all the way up to the historical stasis achieved by the suppression of the cultural past. As Mond reiterates, in the words of '"that beautiful and inspired saying of Our Ford's: History is bunk. History," he repeated slowly, "is bunk"'.[111]

In his yearning for 'constant apprehension', then, John is really lamenting the death of time—'true' time, experienced as creative and mindful engagement with the present—in the World State. This focus on time-as-creation allows us to join the loss of time to the loss of agency discussed earlier. The habits of uncritical production and consumption that Huxley witnessed in consumerist society led, as we saw, to a fundamental loss of individual agency. By engaging in mechanised labour within Taylorised factories and offices, and indulging in the equally mechanised leisure pursuits involving cinema, radio and newspapers, individuals deny their own creative faculties, and their own capacity to experience time in an active and meaningful fashion. It is thus significant that John's final attempt to escape from the World State centres on a moment of creative endeavour that emphasises this sense of human-meaningful time. After seeking refuge and isolation in a disused lighthouse, John sets about creating a garden. During the course of this work, he experiences a fleeting unity of the animal and the spirit, a brief moment of bodily and intellectual harmony described in a remarkable passage:

> He was digging in the garden—digging, too, in his own mind, laboriously turning up the substance of his thought. Death—and he drove in his spade once, and again, and yet again. And all our yesterdays have lighted fools the way to dusty death. A convincing thunder rumbled through the words. He lifted another spadeful of earth. Why had Linda died? Why had she been allowed to become gradually less than human and at last… He shuddered. A good kissing carrion. He planted his foot on his spade and stamped it fiercely into the tough ground. As flies to wanton boys are we to the gods; they kill us for their sport. Thunder again; words that proclaimed themselves true—truer somehow than truth itself. And yet that same Gloucester had called them ever-gentle gods. Besides, thy best of rest is sleep and that thou oft provok'st; yet grossly fear'st thy death

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[110] Huxley, *BNW*, p. 47
[111] Huxley, *BNW*, p. 40

which is no more. No more than sleep. Sleep. Perchance to dream. His spade struck against a stone; he stooped to pick it up. For in that sleep of death, what dreams?[112]

Here, John's actions harmonise with his thoughts, his physical movements corresponding closely with his stream-of-conscious reflections: the act of turning over the earth reflects John's internal reality, in which memories, ideas, literary references and emotions are 'turned over' as he attempts to come to terms with his recent personal experience. At the same time, the 'thunder' of Shakespeare's words, echoed by the thunder in the surrounding landscape, underline that John has the resource of a historical and cultural hinterland behind him, or, so to speak, within him. Even on the basis of his solitary reading of a single volume, this nourishes his private self and enables him to achieve a more profound understanding of his own sense of grief and loss. Merely through his familiarity with the work of one great artist, he has a sense of connection with that broader human history (or at least that of western society) which has been utterly repudiated by the World State. The latter had long ago 'brushed away … those specks of antique dirt called Athens and Rome, Jerusalem and the Middle Kingdom … *King Lear* and the *Thoughts* of Pascal'.[113]

To say, then, that the novel does not offer an alternative to its bleak technophobic picture is not wholly true. Certainly, the question of how best to address the unchecked advance of technology is left unanswered—but in this fleeting moment, at the close of the novel, Huxley does at least offer a brief glimpse of the kind of harmony of 'animal' and 'spirit' that he saw as necessary to the spiritual and material salvation of the human. To return to the question of the human in *Brave New World*, we can see that the novel, in reacting against the subversion of human nature by ever more pervasive technocracy, falls back on a traditional conception of human agency as a capacity that must be preserved from technological corruption. Yet, at the same time, Huxley's notion of the 'life-worshipper', epitomised in prototypical form by the character of John the Savage, also emphasises a conception of human nature that attempts to account not merely for the intellectual and spiritual being of the human, but for its material and sensual being as well. Huxley thus roundly rejects any notion of the trans-human as a utopian

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[112] Huxley, *BNW*, pp. 226-227, ellipsis in original
[113] Huxley, *BNW*, p. 41

technological figure—instead, he may be aligned with a transformative mode of human narrative through his insistence on the sanctity of human agency in the face of potential technological determinism, and his criticism of any approach towards human life that emphasises either the idealist or the material worlds at the expense of the other.

Early pulp SF: *Skylark* and 'a universe ruled by the human mind'

At first glance, Huxley's *Brave New World* appears to have little in common with the early space operas of E.E. 'Doc' Smith. Smith's *Skylark* series is in many ways the quintessential early work of technophilic SF in the US tradition, vigorously capturing the sense of utopian possibility so often linked in the pre-'Golden Age' pulps with technological and scientific speculation.[114] Published in Gernsback's *Amazing Stories* from August to October 1928, the first work in the *Skylark* series, *The Skylark of Space*, appeared at the very beginning of magazine SF: *Amazing Stories* had begun publishing only two years beforehand, and in 1928 was still the only magazine wholly dedicated to 'scientifiction'. The genesis of Smith's story, however, predates the establishment of SF as a market genre, having been originally written in stages between 1915 and 1920 while Smith was working as a chemist and studying towards a Ph.D. in that field.[115] *The Skylark of Space* was rejected by many magazine publishers before being accepted by *Amazing Stories* editor T. O'Conor Sloane (for the meagre fee of $75). Following its publication in Gernsback's magazine, Smith quickly became one of the most popular authors in pulp SF, producing two sequels—*Skylark Three* (*Amazing Stories*, Aug–Oct 1930) and *Skylark of Valeron* (*Astounding Stories*, Aug 1934–Feb 1935)—that extended the

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[114] Originally, *The Skylark of Space* was not the sole work of E.E. Smith, but was partially co-written with Lee Hawkins Garby, the wife of Carl Garby, a former classmate and neighbour of Smith. Garby drafted the romantic elements of the story, while Smith handled the technical details. As a result, upon its publication in *Amazing Stories* in 1928, the story was attributed to 'Edward Elmer Smith, in collaboration with Lee Hawkins Garby'. The story then underwent significant revision by Smith before its 1946 republication by Fantasy Press, with Smith as sole author. My discussion here will assume Smith to be the primary author of the work—however, since I am referring to the original magazine publications, I will list both Smith and Garby when citing *The Skylark of Space*, in recognition of the latter's contributions to the work. See Sam Moskowitz, 'E. E. Smith, Ph.D.', *Seekers of Tomorrow: masters of modern science fiction*, 1961, Ballantine Books, 1967, p. 21

[115] Moskowitz, pp. 20-22

action of the original tale to other galaxies and even dimensions. During this time, Smith also published *Triplanetary* (*Amazing Stories*, Jan–Apr 1934), a story of interstellar alien invasion that would eventually be reworked as a prequel to his renowned *Lensman* series (1934–48).

Smith is thus a key author in the pre-Golden Age era of American SF, a time in which the utopian technocratic possibilities of technology were of central concern to American SF writers. *The Skylark of Space* established a much-borrowed narrative framework centred on larger-than-life scientist-adventurers acting as torch-bearers in a universal conflict between progress and decadence, with technology as their instrument and nature as their resource. The series centres on Richard Seaton, a scientist-inventor who inadvertently discovers a new metal, called simply 'X', which when brought into contact with copper and an electric current induces a cataclysmic liberation of atomic energy. Seaton channels this energy into a propulsion mechanism with which to power a series of ever larger and more sophisticated flying crafts—the titular 'Skylark' spaceships—which he uses to explore the galaxy alongside his wife Dorothy, friend Martin Crane, and Crane's (eventual) wife Margaret.

From this description, we can expect that Smith's conception of the trans-human will differ significantly from that of Huxley's *Brave New World*. Huxley, drawing on a European tradition of utopian satire stretching back to Swift, uses his novel to express his anxieties concerning contemporary industrial developments. Smith, conversely, drawing on the episodic yet dynamic format of the early pulp magazines in his *Skylark* series, expands those developments to (literally) galactic proportions, imbuing technology with a utopian appeal and casting it as a powerful instrument for self-realisation. Yet a crossover between Huxley and Smith can nevertheless be identified, apparent in their stance towards the sanctity of the human individual: both, as we will see, are concerned with recuperating a sense of individual autonomy and agency that has been significantly diminished in the age of modernity. For both, furthermore, the means of achieving this lie in adopting the most fruitful attitude towards technological processes. Huxley, as we saw, rejects dehumanising technological processes and abstract scientific totalisations, advocating instead a holistic mixture of rationalism and materialism that will allow the human to flourish in both its sensual and spiritual aspects. In Smith, conversely, technology is not an oppressive and externally imposed system but a

practical means of individual self-expression—his protagonists are not the victims but the propagators of a technological rationalism aimed, like the House of Salomon in Bacon's *New Atlantis*, at facilitating humanity's ever-deepening command over non-human nature.

As we will see, in Smith's *Skylark* stories technology is equated with the rationalisation of space and time, a process of abstracted 'enframing' in which matter itself becomes the final frontier to be breached. In keeping with this tendency towards immaterial abstraction, the 'human' itself in these works is divorced from mere individual biology, instead becoming shorthand for a number of key humanist traits: a rationalist worldview, adherence to a set of conservative moral values, a belief in technological progress and in human dominion over nature, and a prioritisation of individual, as opposed to social, identity. Hence, and in sharp contrast to the humans of Conan Doyle and London, to be 'human' in these texts does not really mean to be *biologically* human—rather, the term points to the possession of a number of elevated intellectual and moral qualities used as qualitative markers in a broad process of identification and Othering.

We begin this analysis with an examination of the literary genealogy of Smith's series. *The Skylark of Space* is generally considered to be one of the earliest 'space operas'[116], a subgenre broadly centred on interstellar travel and encounters with alien life forms of which George Lucas' *Star Wars* series (1979–) is perhaps the best-known example. 'Space opera', as David Pringle notes, 'was the subgenre, above all else, that the genre magazines could call their own; and it was also the first subgenre to remain, for decades, purely the property of genre SF'.[117] Examining the origins of space opera, Pringle identifies a number of possible influences on the formation of the genre, including future-war and naval stories, philosophical

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[116] The term 'space opera' was coined by Bob Wilson Tucker, editor of the SF fanzine (a fan-run magazine) *Le Zombie*, in 1941. Its etymology is explained by Tucker thus: 'In these hectic days of phrase-coining, we offer one. Westerns are called "horse operas", the morning housewife tear-jerkers are called "soap operas". For the hacky, grinding, stinking, outworn spaceship yarn, or world-saving for that matter, we offer "space opera"' (197). Quoted in Gary Westfahl, 'Space Opera', *The Cambridge Companion to Science Fiction*, edited by Edward James and Farah Mendlesohn, Cambridge University Press, 2003, pp. 197-208. Online archive copies of *Le Zombie* may be accessed at www.midamericon.org/tucker/currentlez.htm.
[117] David Pringle, 'What Is This Thing Called Space Opera?', *Space and Beyond: the frontier theme in science fiction*, edited by Gary Westfahl, Greenwood Press, 2000, p. 45

interplanetary fiction such as Voltaire's *Micromégas* (1752) and Camille Flammarion's *Lumen* (1872), and the planetary romances of such writers as Burroughs.[118] Its most significant predecessors, however, were surely the earlier forms of pulp fiction printed in magazines such as *The Argosy* and *All-Story*, of which Smith, according to Sam Moskowitz, was a 'regular reader'.[119] In the late nineteenth and early twentieth centuries, such pulp magazines were the mainstay of cheap reading material for increasingly literate populations, offering stories of 'the Wild West' and 'American detective[s]' of the sort that enthral Joyce's young narrator in 'An Encounter' (1914). Given this lineage, it becomes possible to view *Skylark* and the other early works of SF as more ambitious projections of the literary concerns of earlier forms of pulp fiction onto an interstellar backdrop. Indeed, much 'Gernsbackian SF' is dismissed by Suvin for this very reason: such works, he argues, remain at a juvenile level, at the 'regression-to-womb stage', rehashing tropes from other sub-literary genres in innovative but ultimately reactionary guises.[120] Brian Aldiss offers a succinct summary of this view of space opera that tends to dismiss the genre as trivial: 'Science fiction is for real. Space opera is for fun. Generally.'[121]

Yet this disparaging view of early SF stories as the mere 'hyping-up of the old grape juice into the new wine', as Suvin characterises it, misses the appeal of the pulp stories for their early readers.[122] This appeal, as Joyce's narrator puts it, arises from 'the escape which those chronicles of disorder alone seemed to offer'.[123] Pulp SF, which thrived particularly during the Depression years of the late 1920s and 1930s, offered its early readers an opportunity to step out of the complex and often dreary circumstances of everyday life and enter a diverting world of manly adventure, uncomplicated romance, and clear-cut moral choices. Isaac Asimov, who encountered SF for the first time at his father's newsstand in Depression-era New York, writes that pulp SF 'gave [him] the joy of life at a time and in a place and under conditions when not

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[118] See Pringle, pp. 35-47
[119] Moskowitz, p. 21
[120] Suvin, pp. 23-24
[121] Brian Aldiss (ed), 'Introduction', *Space Opera: science fiction from the Golden Age*, Futura Publications, 1973, p. 9
[122] Suvin, p. 24
[123] James Joyce, 'An Encounter', *Dubliners*, 1914, Penguin Books, 2000, p. 12

terribly many joys existed'.[124] Jack Williamson, describing the effect of such stories on a 'green farm kid' growing up in rural southern America, is more explicit regarding the specific ideological impacts of the SF mode on its early readership: 'to me— … hungry for life and ignorant of nearly everything—and to a whole generation of wondering young Americans, those disdained publications came to reflect our awe at the strangeness of the universe, our readiness to challenge all we didn't understand, our hope of better worlds to come'.[125] Early SF works offered readers the opportunity to experience a tangible 'sense of wonder', a term characterised by Peter Nichols and Cornel Robu as 'the sudden opening of a closed door in the reader's mind'.[126] That the opening was, in the cases of Asimov and Williamson, an escape from a world of limited economic opportunities and cultural outlets to one of near-unlimited possibilities perhaps accounts for the amplified emotional response of many writers and readers to the genre, a phenomenon that led to the emergence, in the 'Letters' pages of pulp SF magazines, of a highly dynamic fan community.

In particular, Williamson was struck by the seemingly unlimited scope for science and technology to improve human life as depicted in the early pulp stories, describing, in a guest editorial for *Amazing Stories Quarterly* in 1928, his vision of a future technocratic utopia and the role of SF in its realisation:

> A universe ruled by the human mind. A new Golden Age of fair cities, of new laws and new machines, of human capabilities undreamed of, of a civilisation that has conquered matter and Nature, distance and time, disease and death. … The idea of the final product of evolution is beyond us. But a sublime picture it is that scientifiction may build through the ages, and that science may realize for the ultimate advancement of man.[127]

The ideological commitments of the Gernsbackian mode of SF are on full display here: Williamson's 'Golden Age', like Julian Huxley's, is informed by the tenets of Enlightenment positivist humanism, characterised by a utopian stance on scientific development, a progressive

[124] Isaac Asimov, *Before the Golden Age Trilogy*, 1974, Black Cat, 1988, p. 10

[125] Jack Williamson, *Wonder's Child: my life in science fiction* [henceforth *WC*], 1984, *Jack Williamson: SF Gateway Omnibus*, Gollancz, 2014, p. 539

[126] Peter Nicholls and Cornel Robu, 'Sense of Wonder', 2005, par. 5, web, *The Encyclopedia of Science Fiction,* edited by John Clute et al, Gollancz, www.sf-encyclopedia.com/entry/sense_of_wonder, accessed June 2017

[127] Williamson, *WC*, p. 575

view of historical change, a commitment to a universal abstraction called 'man', and an anthropocentric view of non-human nature as an external object to be harnessed by an omnipotent, if benevolent, human intellectual subject.

Such ideas percolated, with varying degrees of emphasis, throughout the tales published in *Amazing*, *Astounding*, *Wonder Stories* and the other early SF magazines, finding expression even in those works that adopt a more ambiguous or muted stance on technological change or human development. Edmond Hamilton's 'weird' stories, for example, seem initially more invested in ideas of human evolutionary degeneracy than in any notions of utopian technocracy: 'The Man That Evolved' (1931) depicts a future of human evolution in which, after passage through various stages of physical and intellectual excellence, the human circles back to its origins to end in a grey protoplasmic slush, while 'Devolution' (1936) reveals humanity to be the product of evolutionary regression among a race of disembodied extra-terrestrial intellects. For all their pessimism, however, these stories nevertheless retain distinct characteristics of a humanist position in other regards: through an emphasis on the intellect as the key site of human evolution over and above the natural-material world, or on a universalist and teleological view of human evolution as tending always and everywhere towards the same human figure. Furthermore, a notably more utopian standpoint can be found in Hamilton's space-operatic works, in which he frequently falls back on a normative framework that encodes the conflict between humans and non-human life forms as a straightforward clash of good versus evil. Even so circumspect a story as John Campbell's 'Twilight' (1934)—in which a sterile and infantile humanity quietly fades out to extinction amid the luxury of its own technological creations—translates a western anxiety concerning technological dependence into a totalising vision of the ultimate destiny of humankind, and ends with a hopeful transfer of the quality of human creativity to 'those wondrous machines, of man's triumphant maturity … The wondrous, perfect machines'.[128]

Even in its more pensive mode, then, early magazine SF retains a broad commitment to a belief in a universal human condition, technological rationalism as the key measure of human

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[128] John W. Campbell Jr., 'Twilight', 1934, *The Science Fiction Hall of Fame, Vol. 1*, edited by Robert Silverberg, 1970, Sphere Books, 1972, p. 56

development, and a teleological understanding of human history as culminating in the appearance of white, intellectually advanced males.[129] Joyce's description of the pulps as 'tales of disorder' could, in the case of early SF, thus be more usefully modified as 'tales of *disorder versus order*'. In depicting encounters between the human and the non-human, the narratives typical of early magazine SF are concerned with a moral conflict between chaos and order—between decadent forces seeking to disrupt the orderly progress of human civilised development, and progressive forces committed to its continuation—with the latter generally winning out.

At the same time, however, such stories as Frank Belnap Long Jr.'s 'The Last Men' (1934), in which humans have become the slaves of super-intelligent insects, or Sophie W. Ellis's 'Creatures of the Light' (1930), which depicts the artificial production and later destruction of a race of super-evolved yet amoral humans, evince an anxiety concerning the potentially negative qualities of such technologies on human agency and autonomy. Such stories demonstrate an anxiety familiar from *Brave New World*: that the tendency towards order and rationalised perfection may rob humanity of its creative potential, or lead to a stultifying world of sterile technological reproduction, while the massification inherent in industrial society may undermine the sanctity of the individual person. The response of these American writers to such concerns, particularly in the case of early space opera, differs strikingly from Huxley's critical re-evaluation of the most appropriate modes of human life. Far from retreating, as Huxley does, from technological rationalism to insist on the need to recapture some essential element of human experience, space-operatic works typically valorise technology as the only effective means to achieve human individual transcendence, allegorised through the extension of the human sphere of agency far beyond the limits of the terrestrial plane. Technology in these works is conceived as a force shaped and manipulated not on the social, but on the

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[129] Donna Haraway has critiqued this tendency towards to conceive of all being as tending towards some final unity within the history of western thought, arguing that such 'unity-through-domination' has served as 'justifications for patriarchy, colonialism, humanism, positivism, essentialism, scientism, and other unlamented -isms' (p. 15). See Donna Haraway, 'A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s', 1984, *The Haraway Reader*, Routledge, 2004.

individual level—a morally neutral tool with the capacity to radically extend, rather than subvert, individual agency. Any anxieties regarding the individual's capacity to act in a meaningful manner within industrial mass society are instead redirected outwards towards external social authorities, conceived as negative restraints on individual creative enterprises.

We can see this dynamic at work in the conceptualisation of technology and scientific discourse within Smith's *Skylark* series. Although well versed in the scientific idiom—a result (as described in *Amazing Stories* in 1928) of his professional work as a 'chemist of high standing and an excellent mathematician'[130]—Smith is nonetheless fairly carefree in his use of scientific discourse: his tales frequently and flagrantly disregard the laws of nature even as they were understood in his own time, and ignore fundamental assumptions regarding the nature of matter in his bid to reach the stars. The mysterious metal 'X', for example, is offered to the reader with no more than a smattering of scientific explanation. One breezy exchange between Seaton and his millionaire co-adventurer Crane, meanwhile, does away with the whole of Einsteinian relativity: when Crane protests that Seaton's plans to travel at a speed approaching 'the velocity of light' are impossible, Seaton replies that Einstein's 'theory' is no more than that, and proceeds to chart a course through the galaxy at a speed that sends special relativity 'to pot'.[131] Smith's disregard for accepted scientific knowledge is typical of pulp SF of the era: as Andrew Ross notes, such 'fanciful scientific "errors" were tolerated as "superscience" conventions in order to explain the interstellar plausibility of the generic "space opera"', with *The Skylark of Space* providing a key framework in this regard.[132] Deviations from established fact were in most cases treated not as blunders, but rather as speculations on possible future developments—as 'super-science', defined in *Astounding* in August 1934 as 'the projection of inventive thought into the realm of unexplored realism'.[133] Hence, even so extravagant a story

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[130] Introductory note to E.E. Smith and Lee Hawkins Garby, 'The Skylark of Space: Part 2' [henceforth 'SS2'], *Amazing Stories*, vol. 3, no. 6, September 1928, p. 528, web, *Internet Archive*, archive.org/details/Amazing_Stories_v03n06_1928-09, accessed June 2017

[131] Smith, 'SS2', p. 531

[132] Andrew Ross, 'Getting out of the Gernsback Continuum', *Critical Inquiry*, vol. 17, no. 2, 1991, p. 420

[133] F. Orlin Tremaine, 'As to Discussions', *Astounding Stories*, vol. 13, no. 6, August 1934, p. 7, web, *The Luminist League*, www.luminist.org/archives/SF/AST.htm, accessed June 2017

as *The Skylark of Space* could be described, in the introduction accompanying its publication, as speculation on future possibilities: 'We know so little about intra-atomic forces that this story, improbable as it will appear in spots, will read commonplace [*sic*] years hence'.[134]

Yet, alongside liberating the stories from a strict adherence to realistic scientific extrapolation, this tendency to reject or subvert orthodox knowledge can also be understood to express a certain ambivalence regarding the authority of established science. Responding to reader criticisms that his depictions of faster-than-light travel in *The Skylark of Space* were implausible, Smith made his position on the distinction between the theoretical and the empirical modes clear: 'Please bear in mind that we KNOW very little. It has been widely believed that the velocity of light is the limiting velocity, and many of our leading authorities hold this view—but it cannot be proved, and is by no means universally held'.[135] These 'leading authorities', Smith suggests, do not possess a monopoly over scientific wisdom—indeed, he goes on, having previously '"proved" that the transatlantic cable and the airplane were scientifically impossible', it seems clear that the best attitude to adopt towards such authorities is a wary scepticism.[136] As Robert Heinlein (a close friend of Smith)[137] later wrote, any theoretical model should 'be judged … for what it [is] worth—precisely nothing, until confirmed by experiment'.[138] It is only the fallacies of human 'assumptions', Smith insists, that limit the scientific imagination, which is why the only 'facts' to which he will adhere in his stories are the 'mathematical proofs whose fundamental equations and operations involve no assumptions', as well as the empirical validity of the individual human senses.[139]

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[134] Introductory note to E.E. Smith and Lee Hawkins Garby, 'The Skylark of Space: Part 1' [henceforth 'SS1'], *Amazing Stories*, vol. 3, no. 5, August 1928, p. 390, web, *Internet Archive*, archive.org/details/Amazing_Stories_v03n05_1928-08_ATLPM-Urf, accessed June 2017

[135] E.E. Smith, 'Author's Note' to 'Skylark Three: Part 1' [henceforth 'ST1'], *Amazing Stories*, vol. 5, no. 5, August 1930, p. 389, web, *Internet Archive*, archive.org/details/Amazing_Stories_v05n05_1930-08_-_Teck, accessed June 2017

[136] Smith, 'Author's Note', p. 389

[137] See Robert Heinlein, 'Larger Than Life: a memoir in tribute to Dr. Edward E. Smith', *Expanded Universe*, 1980, Ace Books, 1982, pp. 494-499

[138] Robert Heinlein, 'Blowups Happen', 1940, *The Past Through Tomorrow*, 1967, Gollancz, 2014, p. 66

[139] Smith, 'AN', p. 389

This reluctance to recognise the supremacy of established scientific knowledge—to prioritise the socially accepted viewpoint over and above what may be empirically verified by the individual—can be understood in the context of a broader reaction against the massifying tendencies brought about by the socio-economic changes taking place in the United States in the early decades of the twentieth century. This was the era, as discussed above, of the Fordist factory, of exploding consumerism, mass production, and the technological transformation of everyday life, driven by massive corporate conglomerates, and captured in Coolidge's famous declaration in 1925 that 'the business of America, is business'.[140] Alongside such trends, the growing commercialisation of scientific research and design within the corporate industries of the early twentieth century led, as Ross argues, to an increasing overlap between scientific and economic power. 'Scientific knowledge', Ross states, 'had come to govern the processes of production', while:

> the goal of modern industrial use of technology had become one of transforming science into capital. Control of science itself became an industrial monopoly: confined to the new corporate research laboratories, or to university locations where research worked hand in hand with corporate interests.[141]

Smith himself was no stranger to industrial America, working throughout his life as a chemist for a variety of donut-mix companies, and also as an inspector at an ordnance plant during the Second World War (a role from which he was dismissed for refusing to certify defective weapons).[142] And indeed his protagonists, Seaton and Crane, do not shy away from the benefits of scientific commercialism: barely has the miraculous 'X' been discovered when its commercial potential is being exploited by the 'Seaton-Crane Company', which can 'sell power for less than one-tenth of a cent per kilowatt-hour and still return twenty percent annual dividends'.[143] In his 1946 revision of the novel, Smith is even more explicit on this point: Crane, after learning about the kinetic properties of 'X', speculates on the financial rewards that may be reaped if they could 'control that power … put it into a hull … harness it to the wheels of

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[140] Quoted in Michel Beaud, *A History of Capitalism, 1500-2000*, 1981, translated by Tom Dickman and Anny Lefebvre, Monthly Review Press, 2001, p. 183
[141] Ross, 425
[142] See Moskowitz, p. 21-29
[143] Smith, 'SS1', p. 403

industry', having secured their private control over the metal with a 'clear title, signed, sealed, and delivered'.[144]

Here we can identify a key idea in the pulp SF of the 1920s and 1930s: the development of utopian technologies which would make it possible to cease the exploitation of human labour by discovering new ways to exploit the power of nature. This motif can be identified in numerous stories: in M.F. Rupert's 'Via the Hewitt Ray' (1930), which depicts a matter transporter capable of operating at the speed of light; in S.P. Meek's 'Submicroscopic' (1931) and Henry Hasse's 'He Who Shrank' (1936), which feature matter-reduction technology; and in Campbell's 'The Battery of Hate' (1933), in which a device that can produce electricity 'so cheaply nothing can compete' is developed by a lone experimenter in his basement.[145] These technologies have the clear capacity to revolutionise the experience of everyday life—yet each story also stresses the tension between the radical inventor-pioneers, committed to a positive vision of technocratic progress, and an essentially conservative society that resists or suppresses technological change. Hence, in each case, the radical social potential of the technology becomes stifled—whether by a public suspicious of too-rapid advances in 'Via the Hewitt Ray', or by the hostility of an entrenched institutional old guard towards innovative theories in 'Submicroscopic', or by the aggressions of a jealous capitalist baron in 'The Battery of Hate'—and it is instead left to the resourceful individual to explore the potential of technological change.

In relation to the *Skylark* series, it is significant that, despite the far-reaching applications of the marvelous 'X', or of the new frontiers of knowledge opened up by Seaton's encounters with various alien beings on his interstellar travels, the science that makes these marvels possible remains known only to a select few pioneering individuals. The effort to overcome barriers to human progress is, in the *Skylark* series, an individual effort—Seaton's

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[144] E.E. Smith, *The Skylark of Space*, 1928, Panthers Books, 1974, p. 18, 19, ellipses in original. In a suggestive comment on the influence of big business in the days before Roosevelt's 'New Deal', Seaton's lawyer insists that the 'articles of incorporation' for the Seaton-Crane Company 'don't mean anything. They merely empower the Company to do anything it wants to' ('SS1', p. 398).

[145] John W. Campbell Jr., 'The Battery of Hate', 1933, *Science Fiction of the 30's*, edited by Damon Knight, The Bobbs-Merrill Company, 1975, p. 116

conservative fellow-scientists pour scorn on his claims to have discovered a revolutionary new power source, insisting that his discovery 'came out of either a bottle or a needle' (that is, was born of alcohol or drugs), thus provoking him to develop the technology himself.[146] As Ross argues, such 'rugged individualism', so often valorised in the SF pulps, may be read as a response to 'the increasingly Taylorized culture industry': like 'the cowboy and the private detective', the 'genius-inventor' was an 'anachronistic [hero] increasingly employed to criticize the loss of individual autonomy in a bureaucratically organized corporate culture'.[147] In Ross's formulation, Seaton is no mere unconventional scientist, but a figurative embodiment of anti-Taylorist sentiment, while the escape into outer space represented, for such writers as Smith, a means by which 'to escape the new Taylorist tyranny of organized and quantified time and space that had come to preside over the contemporary workplace'—a 'utopian version … of the desire' to be freed of the clutches of techno-rationality that was increasingly coming to dominate lived space and time under capitalist modernity.[148]

Hence *Skylark* and the other early SF pulps can be viewed, as Ross argues, as a reaction against the capitalist trends of Taylorist management, the corporatisation of scientific development, and the massification of labour.[149] Seaton and Crane rail against the stuffy corporate conformity and loss of individualism intrinsic to the capitalist workplace, preferring to 'be off exploring new worlds' rather than taking an active part in the Seaton-Crane Company, left instead in the control of a group of 'Engineers'.[150] Similarly, it is telling that the primary villain in the *Skylark* series, the amoral scientist DuQuesne who undertakes to gain financial control of 'X', does so with the co-operation of 'the immense World Steel Corporation', a clear nod to the faceless corporate monopolies that had come to dominate US capitalism in the first half of the twentieth century. The murderous DuQuesne recognises much more fully than Seaton the necessary subordination of individuals to the species in the service of progressive historical change, demanding to know 'what … a few lives amount to' compared with the

[146] Smith and Garby, 'SS1', p. 390
[147] Ross, p. 417, 427
[148] Ross, p. 427
[149] Ross, p. 427
[150] Smith and Garby, 'SS1', p. 403

technological advancement of all humanity.[151] When he is later faced with a deadly plunge into a super-sized star, DuQuesne's primary concern is that Seaton should not follow him into the abyss, since to do so would be to lose 'the greatest discovery the world has ever known', following which 'it will be lost for perhaps hundreds of years'.[152] The purposes to which each directs the super-advanced technology gained from their encounters with other worlds is also significant: in *Skylark of Valeron*, DuQuesne attempts to establish a global autocracy dedicated to the maintenance of a rational and technologically efficient world, while Seaton devotes himself to overthrowing this world in the name of individual human liberty—to 'the government of right instead of by might'.[153]

DuQuesne's Darwinian outlook—an understanding of his own insignificance in the large scheme of human endeavour—therefore stands in sharp contrast with Seaton's fierce individualism. Thus DuQuesne and Seaton symbolise the mass and the individual respectively: while DuQuesne considers the generality of humankind, Seaton is concerned mainly with his own personal self-actualisation. Where the former is committed to biopolitical stasis and the perpetuation of the species, the latter is devoted to the values of individual growth and the exercise of individual agency. Since Seaton is the heroised figure of the text, it is clear that Smith ultimately rejects, through the characterisation of his independent and resolutely self-directed protagonist, the tendency within industrial capitalism towards massification and the subordination of the individual to the biopolitical primacy of the species.

We can thus usefully compare the very different works by Huxley and Smith on this basis: they clearly share some key concerns about the effects of capitalist modernity on individual agency and creativity. As with all the works examined so far, the basic conceptual problem with which Smith is grappling here is precisely that identified by Heidegger and Adorno: humanity is both apart from, and ostensibly 'superior' to, nature, yet also an element *of* nature, and therefore vulnerable to the same processes of exploitation and domination.

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[151] Smith and Garby, 'SS1', p. 395
[152] Smith and Garby, 'SS2', p. 538
[153] E.E. Smith, 'The Skylark of Valeron: Part 7' [henceforth 'SV7'], *Astounding Stories*, vol. 14, no. 6, February 1935, p. 151, web, *The Luminist League*, www.luminist.org/archives/SF/AST.htm, accessed June 2017

Smith's works thus share with *Brave New World* an anxiety about the potentially negative impacts of corporate rationalisation and the scientific management of human individuals. The adventures of Seaton, and the other protagonists of early space operas, are concerned not with technology as an expression of corporate or economic power, but as a material demonstration of a highly individualist mode of empirical control over the natural world. Yet, at the same time, the *Skylark* series is also clearly invested in the same techno-rational ethos that gave rise to an increasingly powerful and pervasive capitalism. Seaton is specifically characterised as a kind of scientific superman who deploys his impressive knowledge of scientific and technological principles in order to subdue and control the natural world. As heroic archetypes, these scientific supermen represent the new face not of *homo economicus*, but of *homo faber*, the tool-building human individual. They are, as we will now examine, trans-humans, deploying technology as a utopian means to overcome human biological limitations, yet in such a way as to valorise and universalise, rather than transform or overturn, the traditional subject of western humanism.

The extent to which Smith—alongside Campbell, Williamson, Hamilton, Ray Cummings and other early writers of space opera—invests his imaginative energies in in the forward march of technological progress may be gauged by his overwhelming faith in the power of science to supply the means by which humanity will understand and control the natural world. The basic theme of the three *Skylark* works is Seaton's ever-deepening penetration into the nature of matter and force, which confers on him a 'complete mastery of power', and with it of space and time.[154] (Even the wicked DuQuesne 'knows more about electricity than the guy who invented it'.)[155] The *Skylark* series thus valorises technology and space exploration as markers of humanity's increasing dominion over non-human nature, with the scientific protagonists capable of bending matter almost miraculously to their requirements.

Indeed, matter itself in these works comes increasingly to *not* matter at all, substituted instead for a series of ever-more penetrating 'forces', 'rays', 'waves', 'beams', 'radiation', and

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[154] Smith, 'ST1', p. 412
[155] Smith and Garby, 'SS1', p. 409

other kinds of *non*-matter which feature prominently in the super-science conjectures of pulp SF. Early SF narratives are awash with such immaterial forces: the 'cosmic rays' of Campbell's *Islands of Space* (*Amazing Stories Quarterly*, Spring 1931)—'COSMIC RAYS! HIGH CONCENTRATION! Get up the screens!'—or the 'barrier rays' of Williamson's *The Legion of Space* (*Astounding*, Apr–Sep 1934)—'Particles dancing away—radiation—beating through us—disintegrating—our bodies'—or the 'Martian paralysing rays' of Cummings' *Brigands of the Moon* (*Astounding*, Mar–Jun 1930) being just three of many possible examples.[156] Indeed, neither matter nor space can now frustrate human ambition: Smith's *Skylark Three*, for example, concludes with an interstellar conflict that deploys 'fields of force extending for thousands of miles', between two vessels 'better than two hundred thousand light-years apart', while *The Skylark of Valeron* features a 'projector' that can transmit a person's words and physical likeness across vast distances of space.[157] As a result, not even the unimaginable reaches of interstellar space—'millions on incandescent millions of miles', distances that are 'absolutely meaningless, even expressed in parsecs'—can present a permanent obstacle to human expansion.[158]

This shift towards exploring intangible forces rather than tangible matter in these narratives may be viewed as a response to the destabilisation of traditional understandings of space brought about by the techno-economic developments of the early twentieth century. As David Harvey notes, western cultural perceptions of space had undergone a rapid process of collapse since the late nineteenth century, as a result of the development of new forms and networks of transportation and communication, the growth of global imperialism, accelerated modes of production, and so on. The global economic catastrophe of 1929, and the spread of

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[156] John W. Campbell Jr., *The Islands of Space*, *Amazing Stories Quarterly*, vol. 4, no. 2, Spring 1931, p. 173, web, *Internet Archive*, archive.org/details/Amazing_Stories_Quarterly_v04n02_1931-Spring_frankenscan, accessed June 2017; Jack Williamson, 'The Legion of Space: Part 3', *Astounding Stories*, vol. 13, no. 4, June 1934, p. 128, web, *The Luminist League*, www.luminist.org/archives/SF/AST.htm, accessed June 2017; Ray Cummings, 'Brigands of the Moon: Part 1', *Astounding Stories of Super Science*, vol. 1, no. 3, March 1930, p. 338, web, *The Luminist League*, www.luminist.org/archives/SF/AST.htm, accessed January 2018
[157] E.E. Smith, 'Skylark Three: Part 3' [henceforth 'ST3'], *Amazing Stories*, vol. 5, no. 7, October 1930, p. 657, web, *Internet Archive*, archive.org/details/Amazing_Stories_v05n07_1930-10, accessed June 2017
[158] Smith, 'ST3', p. 658, 632

American culture lamented by Huxley and Stapledon, revealed the tightly integrated nature of the global economic and cultural field. The 'time-space compression' brought about as a result of this integration, Harvey argues, stimulated a struggle among artists to generate coherent frames of reference through which these rapid spatial changes could be confronted.[159]

One response to these conditions was the tendency towards spatio-temporal 'unity'—the collapse of traditional, local times and places, and their replacement with a 'global space bound together through mechanisms of communication and social intervention'.[160] Such unified spatial and temporal frameworks are highly evident in the space-operatic works of the period: the increasingly vast frames of spatial reference in Smith's *Skylark* series can be read as a response to this trend towards western globalisation—a tacit acceptance of time-space compression and the unification of previously distinct spaces as facts of contemporary life, and of the need to harness such processes in pursuit of unified human progress and the Enlightenment goal, as Harvey puts it, of 'universal human emancipation'.[161] In these works, the expansion is not horizontal—a move that would implicate his characters in the geopolitical complexities of global power relations—but *vertical*, towards the blank frontiers of interstellar space. As a result, the unclaimed resources of the entire galaxy are laid bare, to use Heidegger's phrase, as 'standing reserve' for western human progress.

The extreme collapse of space as portrayed in space-operatic works can thus be read as an imaginative overcoming of all the real-world obstacles standing in the way of the hegemonic unity of all space within a single, all-encompassing frame of (western) human reference—the humans in this case being the scientific *Übermensch* of Smith's *Skylark* works. In this manner, space opera comes to reflect American fantasies of global domination, while this elucidation also helps to lay bare the imperialist dimension of the space-opera genre: in addition to the literary precursors of the space opera outlined by Pringle above (war and naval fiction,

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[159] For Harvey's discussion of the different responses to changes in the experience of space and time in the early decades of the twentieth century, see David Harvey, *The Conditions of Postmodernity: an enquiry into the origins of cultural change*, 1990, Blackwell, 1992, pp. 260-283.
[160] Harvey, p. 270
[161] Harvey, p. 270

planetary romances, philosophical tales), it is clear that the journeys undertaken by Seaton and his companions owe as much to the imperialist lost-world works of Conan Doyle and Kipling as to the westerns and detective stories of earlier pulps.

Indeed, the narrative overlap between *The Skylark of Space* and such a work as *The Lost World* is significant: each depicts a group of scientist-adventurers departing from a comfortable life in the prosperous west to undertake a voyage into the unknown, discovering strange new worlds and encountering strange new creatures and lifeforms—a 'jolly journey' that can take place only because the protagonists' command over space guarantees their safe return. In a segment that could have been modelled on the plot of *The Lost World*—and which, incidentally, is later repeated in Campbell's *Islands of Space*—Seaton and his co-adventurers even intervene in a war on another planet: towards the end of *The Skylark of Space*, the adventurers aid the 'Kondals', a sympathetic race of aliens native to the planet of 'Osnome', to overcome their mortal enemies, the ruthless 'Mardonales'. Whereas Conan Doyle's brawling scientists wield spears and hatchets during the battle for the plateau, the liberation of the Kondals takes the form of a dog-fight between the flying machines of the warring nations. Yet the significance of each encounter remains the same, emphasising the point that the intervention of a technologically superior race is necessary to the advancement of civilisation: Smith's depictions of human/non-human relations take the form not of coexistence between equal species, but of a technological clash between superior and inferior forms of being.

In answer to Conan Doyle's question as to 'where the romance writer is to turn when he wants to draw any vague and not too clearly defined region', then, Smith, we might say, points to the blank spaces of the interstellar map, rendered imaginatively available by the technological advances and soaring national confidence of the United States in the 1920s. Furthermore, we can understand the encoded hierarchy of the human in *The Skylark of Space* in similar terms to Conan Doyle's novel. The Mardonales are depicted as a treacherous, slave-owning, and therefore 'bad' race, while the Kondals are the repressed, fundamentally 'good' humans. The symbolism of the conflict is registered in the imagery associated with the opposing races: whereas the antagonistic Mardonales 'shone a dark, livid, utterly indescribable color', the friendly Kondals are a 'light, soft green'—representative respectively of their 'dark'

and 'light' natures.[162] The bloody overthrow of the Mardonales, like that of Conan Doyle's ape-men, is therefore provoked by their lack of adherence to a recognisably western moral framework. The liberated Kondals themselves herald the encounter with humans as 'the meeting on terms of mutual fellowship and understanding of the inhabitants of two worlds separated by unthinkable distances of trackless space and by equally great differences in evolution, conditions of life, and environment'. [163] Yet, notwithstanding this noble proclamation, it is made clear that the earth-humans possess the superior intellect of the two races, a fact that enables them to successfully assert their supremacy over Osnome—becoming at the same time, like the Englishmen on the plateau, the necessary means by which another species secures its evolutionary future. In a final twist, the Kondals go on to pronounce Seaton as 'overlord, the ultimate authority on all Osnome', an instance of imperialist wish-fulfilment—the voluntary submission of the more 'primitive' race to their technological superiors—familiar from *The Lost World*.[164]

So the euphoric transcendence of material limits in *The Skylark of Space* can be understood to express an imperialist confidence familiar from Conan Doyle: a belief in the possibility of western dominion over space, and in the western *telos* of human advancement to be directed by a benign imperialist force. So is *The Skylark of Space* simply *The Lost World* writ in large galactic terms? Certainly it shares the confident imperial humanism of Conan Doyle's novel—yet *Skylark* also adheres to a more extreme, and explicitly Cartesian, form of humanism than that of Conan Doyle. Smith's understanding of the term 'human' extends far beyond the boundaries of the body, or indeed of the biological species—that is, beyond the bounds of *homo sapiens*—encompassing *any* being that exhibits recognisably 'human' qualities. Consider, for example, Seaton's remark on first encountering the Mardonales: 'They're *human*, right enough, but ye gods, what a color!'[165] This seems, at first glance, a

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[162] Smith and Garby, 'SS2', p. 554; E.E. Smith and Lee Hawkins Garby, 'The Skylark of Space: Part 3' [henceforth 'SS3'], *Amazing Stories*, vol. 3, no. 7, October 1928, p 618, 615, web, *Internet Archive*, archive.org/details/Amazing_Stories_v03n07_1928-10_missing_ifc_ibc_bc, accessed June 2017
[163] Smith and Garby, 'SS3', p. 626
[164] Smith and Garby, 'SS3', p. 635
[165] Smith and Garby, 'SS2', p. 554, my emphasis

highly curious remark—how could the Mardonales be considered 'human', given their utterly alien origins? At the same time, we find DuQuesne, an undeniable *homo sapien*, described as a 'cold, *inhuman* sort of a fish'.[166] The sense in which 'human' is being employed here gestures to a meaning beyond the merely biological or material—an understanding of the term as privileging abstract moral and intellectual qualities over the body that is identifiable throughout Smith's SF works. Roger, the human antagonist of *Triplanetary*, for instance, who resembles DuQuesne in his coldly rationalist, amoral manner, is described as being 'scarcely human', 'an over-brained, under-conscienced human machine—a super-intelligent but lecherous and unmoral mechanism of flesh and blood'.[167] In the *Lensman* series, meanwhile—which centres on an elite interstellar law enforcement organisation—the various alien races that make up the 'Lensmen', despite their decidedly inhuman appearance, are described as being united by a common dedication to the advancement of civilisation: a mission 'of paramount importance to all the intelligent peoples of all the planets in space'.[168] And in *Spacehounds of IPC* (*Amazing Stories*, Jul–Sep 1931), faced with the threat of extermination 'by a race of highly intelligent monsters' from one of Jupiter's moons, it is necessary 'for all the various races of humanity'—whether terrestrial or extra-terrestrial in origin—'to assist and support each other'.[169]

The emphasis here is on shared intellectual and moral, not biological, qualities. This particular understanding of the 'human' is a recurring facet of the genre of space opera, as in this passage from Edmond Hamilton's 'Crashing Suns' (*Weird Tales*, Aug–Sep 1928):

> Beings there were among those thousands from every peopled sun in all the Galaxy's hosts, drawn here like myself to represent his star in this great Council which ruled our universe. Creatures there were utterly weird and alien in appearance … —creatures from Aldebran, turtle-men of the amphibian races of that star; fur-covered and slow-moving beings from the planets of the dying Betelgeuse; great octopus-creatures from mighty Vega; … these, and a thousand others, were gathered in that vast assemblage,

[166] Smith and Garby, 'SS1', p. 404, my emphasis

[167] E.E. Smith, 'Triplanetary: Part 1', *Amazing Stories*, vol. 8, no. 9, January 1934, p. 26, web, *Internet Archive*, archive.org/details/Amazing_Stories_v08n09_1934-01_bogof39-El_PM, accessed June 2017

[168] E.E. Smith, *First Lensman*, 1950, Panther Science Fiction, 1979, p. 54

[169] E.E. Smith, *Spacehounds of IPC*, 1931, Ace Books, 1947, p. 145

forms utterly different from each other physically, but able to mix and understand each other *on the common plane of intelligence*.[170]

This final phrase—the 'common plane of intelligence'—underscores the priority granted to the intellect as the key site of human development and advancement in early magazine SF. This is not to suggest that the body is disregarded: Seaton, the archetypal pulp SF hero, is a superman in a physical as well as intellectual sense, with 'muscles writhing and rippling in great ridges under the satin skin of his broad back'.[171] Indeed, Smith's repeated emphasis on the highly diverging understandings of what constitutes an attractive body among his many aliens perhaps offers an implicit argument against the racist divisions that divided US society at the time that he penned his works. To a being of radically different body type, Smith asserts, even the 'trim and graceful human form' may constitute 'the very quintessence of malformation and hideousness'.[172] By extension, we might assume that human types are equally relative, and that none can therefore be said to constitute the objectively 'best' version of the human form. But, in any case, the mind remains sovereign over the body.

It is necessary, then, to distinguish between the 'human' in its physical and intellectual manifestations: whereas the evil Fenachrone race in *Skylark Three* are *physically* humanoid, 'with recognizable features', they are nevertheless equipped with a 'gigantic and *inhuman* brain', the result of a 'monstrous and unspeakable culture'.[173] Conversely, when, in *Skylark of Valeron*, Seaton declares 'Humanity *über alles—homo sapiens* against all the vermin of the universe', he must be understood to be referring here to the *intellectually* human: those beings committed to progress and the 'march … towards civilisation'.[174] The epilogue of *Skylark Three* makes the distinction clear:

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[170] Edmond Hamilton, 'Crashing Suns', 1928, *Crashing Suns*, Ace Books, 1965, p. 93, my emphasis

[171] Smith and Garby, 'SS2', p. 559

[172] E.E. Smith, 'Triplanetary: Part 2', *Amazing Stories*, vol. 8, no. 10, February 1934, p. 79, web, *Internet Archive*, https://archive.org/details/Amazing_Stories_v08n10_1934-02, accessed June 2017

[173] E.E. Smith, 'Skylark Three: Part 2', *Amazing Stories*, vol. 5, no. 6, September 1930, p. 546, web, *Internet Archive*, archive.org/details/Amazing_Stories_v05n06_1930-09_Qshadow-cape1736, accessed June 2017; 'ST1', p. 408

[174] E.E. Smith, 'The Skylark of Valeron: Part 4', *Astounding Stories*, vol. 14, no. 3, November 1934, p. 140, web, *The Luminist League*, www.luminist.org/archives/SF/AST.htm, accessed

> Varied are the physical forms and varied are the mentalities of our almost innumerable races of beings, but in Civilization we are becoming one, since those backward people who will not co-operate with us are rendered impotent to impede our progress among the more enlightened.[175]

To resist the forward march of intellectual 'enlightenment' is to be considered 'backward', regardless of biology—to be, like the Mardonales and the Fenachrone, atavistic throwbacks in the progressive development of an abstracted and (literally) universal 'humanity'.

The popularity of the motif of telepathy within pulp SF neatly illustrates this preoccupation with corporeal transcendence. Like many other authors from the period, Smith assumes that the development of telepathic powers—literally, the abstraction of thought from its physical basis—will be a natural step for humankind. Telepathy is itself a form of transcendence of the human body, and in Smith's fiction is deployed as a universal medium of communication, allowing alien beings to transcend differences in cultural and linguistic background and connect 'on the common plane of intelligence'. Central to the *Lensman* series, for example, is the notion that beings from different planets, wildly different in bodily composition and linguistic facility, can communicate easily and swiftly with each other using a kind of universal telepathic code, thus dissolving contingencies of culture, language and custom within the universal 'language' of higher intellectual thought. Since only beings of a high degree of intellectual and moral calibre can qualify as 'Lensmen' in the first place, telepathy, and the capacity for higher thought that enables it, thus becomes reconfigured as a shared and essential quality of all 'advanced' and 'civilised' beings.

In their deployment of the trope of telepathy, Smith's stories and wider early pulp SF precisely prefigure concepts later associated with transhumanism, which, as N. Katherine Hayles notes, privileges 'informational pattern over material instantiation, such that embodiment in a biological substrate is seen as an accident of history rather than an inevitability of life'.[176] Transhumanism, as Robert Ranisch and Stefan Lorenz Sorgner note, constitutes 'a

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June 2017; Smith, 'SV7', p. 140
[175] Smith, 'ST3', p. 658
[176] N. Katherine Hayles, *How We Became Posthuman: virtual bodies in cybernetics, literature, and informatics*, The University of Chicago Press, 1999, p. 2

contemporary renewal of humanism': a kind of intensified humanism which 'embraces and eventually amplifies central aspects of secular and Enlightenment humanist thought, such as belief in reason, individualism, science, progress, as well as self-perfection or cultivation'.[177] Transhumanism is thus committed to technological transcendence—a furthering of human evolution through ever-greater interface with technological systems. The particular kind of transcendence that takes place in the *Skylark* series is of a similar type: a form of material transcendence that privileges the abstracted qualities of the mind (telepathy, the constant drive for ever-deeper intellectual control over nature), and immaterial natural forces ('rays', 'waves', 'radiation', and so on), over the material substance of the body and the material space of nature.

We are left, then, with opposing conceptions of the trans-human in the *Skylark* series. On the one hand, we have the fierce individualism and technological autonomy of Seaton—on the other, the communalism and universalism of the 'human' mind, by means of which all 'civilised' beings tend towards teleological unity under the flag of intellectual and civilisational progress. We can partially resolve the tension between these two conflicting visions of the trans-human by deploying Mark Seltzer's concept of 'dematerialized materialism' (discussed by Hayles in her study). Dematerialised materialism describes the tension inherent in nineteenth-century thought (and naturalist literature in particular) between the physical embodiment of the human individual on the one hand, and on the other the simultaneous, *dis*embodied abstraction of the human within emerging biopolitical systems and modes of representation, such as 'models, numbers, maps, charts, and diagrammatic representations'.[178] There is, I would argue, a similar dialectic in the *Skylark* series: between Seaton as self-possessed and self-actualising individual on one side, and as an abstracted incarnation of the 'human' kind of intellectual being (as opposed to a 'human being', a biological member of the species *homo sapien*) on the other.

This dialectic is dramatised in the conclusion of *The Skylark of Valeron*. Following a dizzying series of adventures, including a trip to the fourth dimension and the liberation of yet

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[177] Robert Ranish and Stefan Lorenz Sorgner (eds), *Post- and Transhumanism: an introduction*, Peter Lang, 2014, p. 8
[178] Quoted in Hayles, p. 100

another oppressed planetary population from their war-mongering neighbours, Seaton and his co-adventurers find themselves confronted with a group of disembodied 'Intellectuals'—literally, a group of incorporeal individuals, without any tangible or material components, who roam the galaxy seeking other powerful minds to add to their number. In order to combat these ghostly figures, Seaton invents a literal thinking machine—a 'towering mechano-electrical Brain'—to be deployed in a kind of mental duel against these enemies. The Brain amplifies Seaton's own intellectual powers: with it, as he says, 'I can see anything I want to look at, anywhere; can hear anything I want to hear. It can build, make, do, or perform anything that my brain can think of'.[179] After using the Brain to imprison the Intellectuals in a specially constructed capsule, Seaton turns his invention over to the newly formed 'Galactic Council', who, it is implied, will use it to guide the future course of galactic affairs.

On the one hand, this Brain serves as the pinnacle of Seaton's intellectual evolution throughout the three *Skylark* works, a climactic and Herculean synthesis of his comprehensive knowledge into a device destined 'soon to become the most stupendous force for good ever to be conceived by the mind of man'.[180] The Brain also serves, however, as a kind of metaphorical species-brain, a repository of all human knowledge, history and experience—as the *telos*, in Aristotle's terminology, of human command over time, space, and life:

> All the pangs and all the ecstasies, all the thoughts and all the emotions of all evolution of all things, animate and inanimate, are there; of all things that ever have existed from the unknowable beginning of infinite time and of all things that shall ever exist until time's unknowable end. It covers all animate life, from the first stirrings of that which was to vitalize the first universe in the slime of the first world ever to come into being in the cosmos, to the last cognition of the ultimately last intelligent entity ever to be.[181]

In the icon of the Brain, then, we have circled back to Williamson's vision of 'A universe ruled by the human mind … of a civilisation that has conquered matter and Nature, distance and time'. The Brain makes possible an imperialist utopia of human rule over matter—a vision of

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[179] E.E. Smith, 'The Skylark of Valeron: Part 6' [henceforth 'SV6'], *Astounding Stories*, vol. 14, no. 5, January 1935, p. 74, web, *The Luminist League*, www.luminist.org/archives/SF/AST.htm, accessed June 2017

[180] Smith, 'SV6', p. 73

[181] Smith, 'SV7', p. 146

western technocracy writ in galactic terms. We can, then, perhaps best understand the character of Seaton, in Seltzer's terms, as a 'dematerialised material' human—that is, as a self-possessed and self-actualising human individual whose intellectual advancement serves also as allegory for the advancement of the whole 'human race'. Seaton thus figures, as described by his wife Dorothy, as both a 'god' and a 'man'—as both a lone pioneering figure *and* a collective emblem of human's imperial sway over nature.[182]

Smith never quite succeeds in resolving the tension between these two figures: his works are concerned with the activities of human individuals, even while these activities gesture towards the generation of massive human imperial conglomerations. (We will return to this tension in more detail in the next chapter.) Nevertheless, it can be seen that Williamson and Smith share a vision of a 'Golden Age' of humanity, and that, in Smith's *Skylark* series, 'humanity' encompasses meanings largely co-extensive with the 'humanity' of Enlightenment thought. The human in Smith is essentially an intellectual phenomenon, present within the physical body yet also reflective of a universal, progressive and rational 'mind' that extends beyond biological barriers, incorporating each new entity it encounters—human and nonhuman alike—into a steadfastly human-centred narrative of teleological progress.

Conclusion

So we end with two very different visions of the trans-human. On the one hand, there is Huxley's dystopic image of technological determinism, with the human individual rendered powerless by technological systems beyond their control. On the other, there is Smith's utopic image of human self-actualisation, with the deployment of ever greater technological control over the material world in the service of human biological transcendence and emancipation.

Huxley's conception of the 'life-worshipper' is arguably the most useful concept for transformative posthumanist thought to emerge from the preceding discussion. In the previous chapter, I outlined Halberstam and Livingstone's concept of 'someness'—a quality of hybridity, of rejecting both unities and dualisms—which we can now see at work in Huxley's fiction. Huxley's insistence on the need to balance the animal and spiritual aspects of human nature,

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[182] Smith, 'SV7', p. 154

and his deep distrust of universals, abstractions, and absolutes, demonstrate the concept of 'someness' in action: the relationship between mind and matter (two key realms in humanist and posthumanist thought, as outlined in the introduction) in Huxley's thought is not one of domination, but rather synthesis.

We can clearly distinguish Huxley from such a writer as Smith—or, indeed, Conan Doyle or London—on this basis: the complete mastery of the body, for example, in such characters as Seaton, Everhard, and (to a lesser extent) Challenger and Roxton—products of nineteenth-century notions concerning the ideal 'Man'—can be read as an expression of a broader imperial mastery over nature. Nature, in the works of these writers, is something simply to be conquered or instrumentalised. Huxley, conversely, is more concerned to emphasise a kind of organic relationship between mind and matter, or culture and nature, in which one is not allowed to rule over the other. Invested in the tradition of western intellectual thought, yet critical of instrumental rationalism as corrupting to a set of core human values, Huxley sees the solution in a rejection of old universals and narratives in favour of new forms of meaning (hallucinogenics, eastern humanist religions) and more dynamic and critical human communities. This is not a fully posthumanist image—Huxley rejects older forms of humanism, but seeks to reform rather than overturn them, and remains committed to a universalist notion of humanity—yet it does prefigure certain preoccupations that would later come under that heading.

The broadly optimistic tone and assimilative technocratic outlook of American pulp SF, meanwhile, would continue right up to the 1940s, when world events would force a revision of such technophilic attitudes. The United States, as we will see in the next chapter, becomes the undisputed centre of SF production in the mid-century period—a time when questions concerning the relationship between individual agency and autonomy in the context of mass society would continue to haunt writers, and their responses to the question of the human would take diverse new forms.

Chapter Three

Homo Gestalt: Atomics, empire, and the
supra-human in Isaac Asimov's *Foundation*
and Arthur C. Clarke's *The City and the Stars*

> Their memories, their projections and computations flooded in to Gerry, until at last he knew their nature and their function; and he knew why the ethos he had learned was too small a concept … Here was why and how humanity existed, troubled and dynamic, sainted by the touch of its own great destiny. Here was the withheld hand as thousands died, when millions might live. And here, too, was the guide, the beacon, for such times as humanity might be in danger; here was the Guardian of Whom all humans knew—not an exterior force, nor an awesome Watcher in the sky, but a laughing thing with a human heart and a reverence for its human origins. …
>
> He saw himself as an atom and his *gestalt* as a molecule. He saw these others as a cell among cells, and he saw in the whole the design of what, with joy, humanity would become.[1]

In his 1953 novel, *More Than Human*, Theodore Sturgeon depicts a radical new kind of human being: *homo gestalt*. *Homo gestalt* is perhaps best described as a compound individual, comprised of a group of persons who, over the course of the narrative, 'blesh'—that is, 'blend' and 'mesh'—to form a composite consciousness. Each individual within *homo gestalt* retains her unique self-identity—yet the group also functions as a hive mind, a unified collection of individuals that also share a single subjectivity. Initially, the *gestalt* depicted in the novel is limited to six individuals, but by the novel's close this group has in turn joined with others and still others, eventually forming a mass group of innumerable minds acting as a single *gestalt* consciousness. The function of *homo gestalt*, as indicated in the above passage, is one of benevolent guardianship: it has functioned throughout history to guide humanity along a course of progressive development, influencing the actions of figures as diverse as William Morris, Enrico Fermi, and even Henry Ford. With *homo gestalt* as custodian, it is suggested, humanity

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[1] Theodore Sturgeon, *More Than Human*, 1953, Ballantine Books, 1968, p. 188

is safe from annihilation: *'in terms of the history of the race'*, 'he' (the *gestalt* consciousness) states, *'atomic war is a ripple on the broad face of the Amazon!'*[2]

Sturgeon's novel offers a depiction of the 'supra-human', the archetypal human figure of this chapter which, as we will see, becomes an important vehicle for the exploration of questions concerning the fate of the human in mid-century SF. The mid-century was a period dominated by the political, social and cultural upheaval of the Second World War. As the twentieth century advanced, traditional notions of possessive individuality, agency, and autonomy came under ever increasing threat as a result of the growth of bureaucratic systems and mass social, political and technological regimes. The bombings of Hiroshima and Nagasaki, and the concentration camps of Europe, presented horrifying visions of the radically dehumanising consequences that could result from such anonymising processes. The supra-human emerges in response to these concerns: in keeping with the twentieth-century trend towards social massification, it is a composite human figure, an aggregate body comprising a huge mass—indeed, often a galaxy—of individuals. This human figure both encompasses and surpasses the individual—yet, significantly, the supra-human is also paternal, acting, like Sturgeon's *homo gestalt*, as a custodial figure to nurture humanity in its efforts to progress to a higher level of development or consciousness. As a result, the supra-human is also motivated by concerns familiar from the humanist tradition: human progress and evolution, technological advance, and the conflict between biological individualism and technological transcendence.

We will here examine two major works from the mid-century period: Isaac Asimov's *Foundation* series[3] (1942-1949) and Arthur C. Clarke's *The City and the Stars* (1956). Asimov was one of the most significant writers to emerge in the Golden Age of SF, and his subsequent influence on the field has been profound—as John Clute notes, 'his was the default voice of

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[2] Sturgeon, p. 188, emphasis in original

[3] The *Foundation* series originally appeared as a series of eight stories published in John W. Campbell's *Astounding Stories* between 1942 and 1949. These stories were later collected and republished, with an additional story written specifically for the republication, over three volumes: *Foundation* (1951), *Foundation and Empire* (1952), and *Second Foundation* (1953). Unless otherwise stated, the term '*Foundation*' should be understood to refer to the series as a whole, rather than to the 1951 novel of the same name.

the genre, the voice of SF speaking to itself'.[4] Like London's *The Iron Heel*, *Foundation* dramatises the conflict between two opposing conceptions of the individual: as free and active social agent and passive victim of socio-historical forces. Yet Asimov's resolution of this conflict differs greatly from London's idealisation of the human form. The social system that eventually emerges in the series takes the form of a kind of biopolitical 'empire', in which the needs of the individual are subordinated to those of the social mass, and in which human history travels along a set path towards a pre-determined future. The anti-humanist outlook implied by this system is, however, tempered by the presence of secret, paternalistic institutions that safeguard humanity from the violence of fascistic rule. In this way, Asimov ultimately assimilates the de-individualising tendencies of mass society into an optimistic vision of progressive and technocratic humanism.

We will then move on to consider the works of Arthur C. Clarke, the writer who, after Asimov, has had perhaps the greatest influence on the course of post-war SF. Clarke arrived at the field as the Golden Age was coming to an end, and was a major contributor to the more pensive mode of SF that began to emerge in the late 1940s and 1950s. Correspondingly, Clarke's *The City and the Stars* demonstrates a more subdued attitude towards technological progress than its Golden Age predecessors. This is a result, as we will see, both of the tradition of scientific scepticism in British SF and of the cultural impact of the atomic bomb. Although Clarke retains a conception of technology as the primary driver of social change, his works also demonstrate a sense of what might be termed ontological 'humility': humanity, he insists, must acknowledge both its own technological shortcomings and the possibility of radically more advanced beings than itself. This humility informs his vision of the galactic empire: as in Asimov's *Foundation*, it is a technological empire, made possible through ever-greater human command over the material world—yet it is also distinguished from the empire of *Foundation* by its symbiosis of individual and society. Whereas Asimov insists upon the need for external controls that undermine the individual's capacity for meaningful action, Clarke instead

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[4] John Clute, 'Isaac Asimov', *A Companion to Science Fiction*, edited by David Seed, Blackwell Publishing, 2005, p. 365

envisions a kind of transcendent cosmic 'body' made up of active and co-operating individuals 'cells'.

In both cases, we end with a vision of what I am here calling the 'supra-human'. We will first begin with a consideration of the major thematic concerns of mid-century SF. The SF of the period can be divided into two broad categories which roughly correspond to the technophilic and technophobic traditions that we have been tracing through the history of the genre. The first, 'Golden Age' SF, adheres to the technocratic precepts and Enlightenment rationalism inherited from pulp SF, while the second, which began increasingly to dominate SF after the end of the Second World War, exhibits an altogether more reflective and anti-progressive outlook. We will focus particularly on the consequences of the increasing bureaucratisation and massification of mid-century society on individual agency. This social trend can be fruitfully linked, I argue, to the appearance of a number of significant SF texts featuring technoscientific empires. Such empires, as we will see, provide a flexible icon with which to allegorise the human relationship to mass society.

Atomics and empire in the 'Golden Age' and beyond

In the introduction to *Adventures in Time and Space*, their important 1946 anthology of magazine SF, editors Raymond J. Healy and J. Francis McComas make some remarkable comments on the political and technological developments of their age:

> Our time is both conditioned and challenged by the quiet men in the laboratories. The war demonstrated that God is no longer on the side of the heaviest battalions, but on that of the heaviest thinkers. The atomic explosions have destroyed more than Japanese cities; they have broken the chains that have held man earthbound since his beginnings. The universe is ours. Over and above all problems of imperialism, racism, economic and political instability, is the question: what shall we do with that universe? For once in his history, the most average of men is concerned with more than his own immediate future.[5]

Following our discussion of the pulp SF of the 1920s and 1930s, many of the sentiments expressed in this brief passage will appear familiar. There is the appeal to the 'quiet men in the

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[5] Raymond J. Healy and J. Francis McComas, *Adventures in Time and Space: an anthology of science fiction stories*, 1946, Ballantine Books, 1974, par. 2

laboratory', reminiscent of the larger-than-life scientist-engineers who propelled humankind, willingly or not, into the interstellar age in the space operas of the previous decade. There is the prioritisation of the powers of abstract thought over the limitations of mere matter—of 'thinkers' over 'battalions'—in the history of human achievement. And there is a familiar sense of imperialist chauvinism: the 'universe', we are assured, is 'ours', ready to be entered and exploited for the sake of human progress. Who exactly falls under the category of 'we' is never explored: the uncomfortable 'problems' resulting from the long history of white patriarchal imperialism are as ever dismissed in the service of 'universal' human progress, codifying a western, and particularly US, imperial fantasy as the destiny of an abstracted and globalised 'man'.

Yet this passage, even as it invokes an image of humanity's interstellar destiny, also belies the presence of certain anxieties regarding the viability of that destiny. The year before the publication of the anthology saw the detonation of (as Truman put it) 'the most terrible bomb in the history of the world'.[6] In his editorial in *Astounding* in November 1945, John W. Campbell heralded the arrival of the 'Atomic Age', writing that 'the civilization we have been born into, lived in, and indoctrinated with, died on July 16, 1945'.[7] Healy and McComas' offhand reference to the destruction of Hiroshima and Nagasaki in the above passage recalls a familiar spectre that runs through much post-war SF: that of the destruction or corruption of humanity by means of atomic technologies, whether through radiation poisoning, mutation, or the ever-present threat of 'mutually assured destruction' between global superpowers. Little wonder, then, that 'average men' were turning their thoughts to the future: the shadow of the Cold War meant that, more than ever before, the future was no longer wholly certain.

In this section, I will be treating Healy and McComas' 1946 anthology as a kind of a watershed text, marking a symbolic culmination of the tropes and thematics that defined the 'Golden Age of SF'. This is the period beginning in or around 1937, the year in which Campbell

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[6] Quoted in Jonathan Glover, *Humanity: a moral history of the twentieth century*, 1999, Yale University Press, 2001, p. 101

[7] John W. Campbell Jr., 'Atomic Age', *Astounding Science Fiction*, vol. 36, no. 3, November 1945, p. 5, web, *The Luminist League*, www.luminist.org/archives/SF/AST.htm, accessed July 2017

took over as editor of *Astounding Science Fiction*, one of the most popular SF pulps of the 1930s. Following his appointment, Campbell moved quickly to remake the magazine into a more mature SF publication. In the process, he also helped to establish or consolidate the reputations of a number of significant mid-century writers, including Isaac Asimov, Robert Heinlein, A.E. Van Vogt, Clifford Simak, Lester del Rey, Theodore Sturgeon, and others. The term 'Golden Age' is used here as a convenience: there is no universal agreement as to when the Golden Age ended, and indeed the very validity of the term as applied to the period of the late 1930s and early 1940s has often been disputed.[8] Yet, as James Gunn remarks, 'the phrase itself is not as useful as the attitude towards science fiction that it implies', and the term 'Golden Age' serves a useful purpose in this regard: notwithstanding its perhaps dubious connotations regarding the quality of the work produced during this time, the term provides a means to distinguish between the outlandish super-science stories that filled the magazines of the 1930s and the more thematically complex and self-consciously sociological works that began emerging, under Campbell's tutelage, in the 1940s.[9]

One of the key characteristics of this mode of SF is its subordination of social and political processes to technological development. Albert I. Berger argues that atomic technology figures in magazine SF as the 'central component of the belief that technological innovation was the principal revolutionary force in the world'.[10] The scientific possibilities opened up by nuclear physics were, of course, grist to the SF mill since the earliest days of magazine fiction. By the end of the 1930s, however, tales of exciting new technologies developed by lone geniuses no longer dominated magazine SF—instead, a broader sociological focus and a greater appreciation of the potential dangers of technological advance began to emerge. This thematic is evident in such works as Heinlein's 'Blowups Happen' (1940) and

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[8] Lester del Rey, for example, gives the years from 1938 to 1949 as the 'Golden Age'; Adam Roberts, from the 'late 1930s to the early 1960s'; and Fredric Jameson, 'from the end of the 1930s to the beginning of the 1950s'. See Lester del Rey, *The World of Science Fiction: the history of a subculture*, Ballantine Books, 1979, pp. 89-157; Adam Roberts, *Science Fiction*, Routledge, 2000, p. 31; Fredric Jameson, *Archaeologies of the Future: the desire called utopia and other science fictions*, Verso, 2005, p. 314.

[9] James Gunn, *The Road to Science Fiction: from Heinlein to here*, Borealis, 1979, p. viii

[10] Albert I. Berger, 'Nuclear Energy: Science Fiction's Metaphor of Power', *Science Fiction Studies*, vol. 6, no. 2, 1979, p. 121

Lester del Rey's 'Nerves' (1942), both of which emphasise the potential social and psychological cost of exploiting atomic technology. Yet, while it was recognised that technology may be equally utilised in both creative or destructive ways, the continued centrality of technology to a certain form of human life and a certain conception of human progress, over and above other social or cultural processes, was rarely in question. As Walter J. Miller put it in 1954, 'A man could change his politics, his friends, his religion, his country, but Men's tools were a part of his body … Trading it for a stone would be like cutting off his arm. Man was a user of tool, a shaper of environments'.[11] Berger argues that such attitudes were typical of SF of the period, which 'minimized the ability [that] political, social, or economic institutions had to shape human life'. [12] Instead, these stories stressed the development of technology, 'rather than economic progress or social institutions', as 'the key … to civilisation and progress'.[13]

A basic assumption of many of the SF works from this period, then, was that technological developments, over and above political or cultural ones, would invariably determine the shape of human society or, alternatively, that technology would provide the most effective means to challenge ostensibly outmoded, inadequate, or unjust human systems. Such technological determinism, as Stefan Herbrechter argues, is 'grounded in the assumption that a new technology emerges more or less spontaneously because of technological development, experimentation or simply "invention." Subsequently, this new technology is "introduced" into society which then leads to society's transformation', without examining the value or context of such technologies. [14] This identification of technology with socio-political power and civilisational advance is widespread, evident in Van Vogt's 'The Weapons Shop' (1942), for instance, in which an underground organisation of arms dealers secretly combat the injustices of the decadent 'Empress' of the solar system, or in the stories of Heinlein's future history, *The*

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[11] Walter J. Miller, 'Way of a Rebel', 1954, sec. 5, par. 3, web, *Project Gutenberg*, www.gutenberg.org/files/32416/32416-h/32416-h.htm, accessed July 2017
[12] Berger, p. 123
[13] Berger, p. 123
[14] Stefan Herbrechter, 'Introduction', *Posthumanism: a critical analysis*, 2009, eBook, Bloomsbury, 2013, n.p.

Past Through Tomorrow (1939-62), which depict the dynamic effects of various technologies—'rolling roads' and 'atomic piles'—on the political and economic shape of US society. In such works, technology generally figures as a given, transparent tool, uncritically deployed to support human enterprises. As a result of such enterprises, humanity and human society may be radically changed—but the technology that underpins such change is rarely the focus of much sustained philosophical examination.

This trend towards the depoliticisation of social and economic issues, and the corresponding emphasis on the technological as the critical factor in determining human affairs, can be partly explained by the context in which the Golden Age stories appeared. As Michel Beaud argues, the global economic system of the mid-twentieth century was 'hierarchical … with the United States as the dominant imperialism in the economic, monetary, technical, military, political, and ideological domains, as well as its way of life and diffusion of information'.[15] The post-1945 economic boom—which for other developed nations, Eric Hobsbawm remarks, constituted a period of 'catching up'—was for the US merely 'a continuation of old trends'.[16] By the middle of the century, the US was firmly established as the world's dominant imperial superpower, and 'effectively exercised control of national politics in the states of the Caribbean and Latin America, the Pacific and Asia, the Middle and Near East, Africa, and to some extent even Europe'.[17] Moreover, as Carroll Pursell notes, the first decades of the twentieth century saw the gradual emergence in the US of a 'social hegemony' dominated by 'American technology'.[18] During the period from the 1920s up to the Second World War, Pursell argues, US social attitudes towards technology were characterised by the slogan adopted for the 1933 'Chicago Century of Progress' World's Fair: 'Science Finds—Industry Applies—Man Conforms'.[19] The techno-progressivism evident in this slogan,

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[15] Michel Beaud, *A History of Capitalism: 1500-2000*, 1983, Monthly Review Press, 2001, p. 251

[16] Eric Hobsbawm, *The Age of Extremes: 1914-1991*, 1994, Abacus, 2006, p. 263

[17] Richard H. Immerman, *Empire for Liberty: a history of American imperialism from Benjamin Franklin to Paul Wolfowitz*, Princeton University Press, 2010, p. 12

[18] Carroll Pursell, *The Machine in America: a social history of technology*, 1995, second edition, Johns Hopkins University Press, 2007, p. xiv

[19] Pursell, p. 230

and the peculiarly passive human figure that it conjures up, demonstrates the extent to which the emphasis not only in SF stories but also in wider US social and political life came increasingly to be placed on technology as the primary category of twentieth-century human life, with the added implication that humanity needs simply to submit itself to the needs of techno-progress. Even following the economic turbulence of the 1930s, attitudes towards such progress in the US were 'still understood in terms of cultural lag—that is, that society was lagging in its ability to deal with the material changes wrought by science and technology'.[20] This progress was evident not only in the ever-growing variety of consumer goods that had been appearing in American homes since the 1920s, but also in the gradual shift, after 1933, of scientific expertise in the natural sciences away from Europe towards the US.[21]

The Golden Age stories, many of whose authors had backgrounds in the natural sciences, appeared in the context of this growing technological hegemony that had characterised social life in the United States since the 1920s, and which, following the slump of the 1930s, was reinvigorated in the years prior to and during the Second World War. The Golden Age thus coincided with a period of US global domination: a time during which the transformation of everyday private and political life by advanced technology in the US was no longer exceptional but assumed, and so the need to highlight or critically examine the impacts of radical or revolutionary technology on the form of human existence was, for many writers, much less urgent. Atomic technology figured in these works not only, or even mainly, as a threat to human survival, but instead symbolised both the apex of human collective scientific effort and a springboard from which to launch the next stage in human development. As Raymond F. Jones put it in 1947, if the atomic bomb highlighted the dangers of human technological hubris, there always remained the 'benefits atomic energy can bring when properly utilized'.[22]

The technological transformation of social frameworks routinely depicted in Golden Age SF, then, is a result not merely of the stated desire of SF writers to shift the thematic

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[20] Pursell, p. 268
[21] Hobsbawm, p. 523
[22] Raymond F. Jones, 'The Person from Porlock', 1947, *A Treasury of SF*, edited by Groff Conklin, Bonanza Books, 1948, p. 285

emphasis of their works towards more explicitly sociological themes. It also demonstrates the extent to which radical technological advance had, in the climate of the mid-century US, come to be decisively framed as one of the most significant indices of human social and cultural progress. My use of the term 'Golden Age' in this chapter should thus be understood in a qualitative, rather than merely historical, sense: it refers not only to a specific period of SF dating roughly from the late 1930s to the early 1950s, but also and more significantly to a specific style of SF that mixed dynamic sociological thematics with a defiant technocratic humanism inherited from earlier pulp SF fiction.

This view of technology, however, came increasingly into question after the Second World War, and particularly following (as Thomas Disch describes it) the 'single, instantaneous Let There Be Death' of Hiroshima and Nagasaki.[23] Paul Boyer argues that 'Hiroshima ended the luxury of detachment' that had characterised cultural perceptions of atomic technology.[24] In contrast to the uncritical deployment of such technology as a means of social advance in the works of Asimov, Heinlein, Van Vogt and others, post-Hiroshima SF was forced more than ever to confront the possibility of mass human self-immolation as a result of atomic weaponry. This in turn led to the emergence of a more circumspect, pessimistic strain of SF that, like the works of the Golden Age, finds its roots in the earlier SF tradition, in the works of Wells, Huxley, Čapek and Zamyatin. Indeed, many of Campbell's own stories from the 1930s (published under the pseudonym 'Don A. Stuart') prefigured one of the primary concerns that would later come to dominate 1940s and 1950s SF: human technological self-destruction, whether through nuclear holocaust or the subversion of human creativity and agency through technological means.

We can see this dynamic at work in many SF texts from the period. The threat of atomic holocaust, for example, looms large over the fiction of the period, evident in George Pal's Cold War re-imagining of Wells's *The War of the World* (Paramount, 1953), with its scenes of mass global panic and urban destruction, and in more muted form in Ray Bradbury's evocative short

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[23] Thomas M. Disch, 'How SF Defused the Bomb', *The Dreams Our Stuff Is Made From: how science fiction conquered the world*, The Free Press, 1998, p. 80
[24] Paul Boyer, *By the Bomb's Early Light: American thought and culture at the dawn of the atomic age*, 1985, The University of North Carolina Press, 1994, p. 258

story, 'There Will Come Soft Rains' (1950), in which the peaceful image of a mechanised house, automatically preparing breakfast for its absent occupants, is contrasted with the silhouettes of children blasted in ash upon its exterior wall. Neville Shute's popular *On the Beach* (1957), too, disdains explicit images of violence or destruction in favour of the quiet gloom of a post-apocalyptic world, as a cloud of radioactive dust makes its inexorable way across the southern hemisphere towards the last remaining survivors of a nuclear conflict. Two other works, Simak's *City* (1952) and Leigh Brackett's *The Long Tomorrow* (1955), emphasise the long-term psychological and social consequences of atomic weapons for human individuals and society. Urban life in both works is rendered untenable by the menace of the 'atom bomb'—as Simak writes, 'if the cities of the world had not been deserted, they would have been destroyed', as they presented easy targets for mass civilian casualties (a theme that Campbell also touches on in his editorial mentioned above).[25] The result in each case is a fundamental upheaval of human society: *City* employs the familiar theme of the technological subversion of conventional human nature, depicting the entropic extinction of humanity as it escapes into 'The Sleep' (a form of suspended animation) or else undergoes the material and psychological transformation required for posthuman existence on Jupiter, whereas *The Long Tomorrow*, by contrast, depicts the emergence of a radical anti-rationalism and anti-progressivism as a fundamentalist Christian revival sweeps across a newly pre-technological American southwest. In both cases, atomic technology renders untenable the familiar social structures of the twentieth century.

In other works, the fear is not holocaust, but physical and psychological mutation. To a large extent, atomic mutation replaces eugenics as the primary means of conceptualising disability in mid-century SF: where disabled individuals were before treated as evolutionary aberrations that threatened to pollute the human gene pool, they now figured as symbols, both tragic and threatening, of humanity's technological hubris. This can be detected in two important stories, Judith Merrill's 'That Only a Mother' (1948) and Richard Matheson's 'Born of Man and Woman' (1950). Each story features a child victim of mutation: in the former, a

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[25] Clifford Simak, *City*, 1952, Gollancz, 2011, p. 22

disabled child and her emotionally disturbed mother are depicted as hapless by-products of nuclear fallout, while in the latter the mutated child, initially figured as a helpless victim of parental abuse, becomes by the end of the narrative an alarming and alien threat to the stability of one suburban household. Nuclear mutation also figures as a trope in the 1954 SF film, *Them!* In this film, concerns about mutations are generalised into an ontological anxiety concerning human supremacy over nature. Given the radical possibilities opened up by nuclear technologies in the 'Atomic Age', symbolised by the giant ants and prehistoric beasts of 1950s SF films, the future of human dominance on the planet became, as one character puts it, something that 'nobody can predict'.[26]

The crucial division within the SF field identified in previous chapters may therefore be tentatively maintained into this period. On the one hand, we have the Golden Age works, which can be distinguished from earlier pulp SF by their thematic complexity and greater emphasis on sociological themes, yet which also adhere to a tradition of technophilic humanism inherited from those pulps. On the other, there is a strain of more brooding and uncertain works, beset by a host of technophobic anxieties that, although also beholden to technology as the key engine of human transformation, challenged the traditional humanist tenets of progressive development and clear-sighted rationalism. This is, of course, not the only mode of categorising the thematic anxieties of mid-century works[27]—but it is a useful one for conceptualising the

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[26] *Them!*, directed by Gordon Douglas, performance by Edmund Gwenn, Warner Bros. Studios, 1954

[27] For example, an alternative classification is offered by Peter Fitting, who divides Golden Age SF into three broad categories: the technocratic SF of such hard writers as Asimov and Van Vogt; the pessimistic anti-technological SF of, among others, Ray Bradbury, James Blish, and Clifford Simak; and, finally, works which turn away from explicit depictions of technology altogether and focus instead on some fundamental alteration to human nature, as in Clarke, Wyndham, or Sturgeon. The working definition of technology outlined in my introduction— which views it as a principle of 'enframing' the world within systems of human thought—as well as my critical focus on the prevalence of humanist and posthumanist functions in SF allow us to loosely distribute the works in Fitting's final category among the former two. Hence Sturgeon's *More Than Human*, for example, which depicts the realisation of a radical new mode of human phenomenology, is framed within a teleological conception of human-centred history that enfolds both the triumphs and tragedies of human technological achievement within a grander narrative of human ascendance, while in the case of Clarke (as we will see), his SF works vacillate between a pessimistic conception of humanity as an immature race requiring external guidance to avoid technological suicide and an optimistic conception of human evolution as destined to climax in a state of universal technological transcendence. See

projected relationship in these works among humanity, technology, and the destructive natural forces rendered increasingly available to human exploitation. I suggest that Healy and McComas's 1946 anthology was something of a watershed text in this regard, since it marks a pivotal moment of transition: although both kinds of works existed side by side throughout the period from the late 1930s to the late 1950s, 'fearful' narratives increasingly became the dominant SF mode as the 1940s wore on. In each case, the overwhelming preoccupation is with atomic technology, onto which many mid-century SF writers now projected their hopes and anxieties regarding the future of the human race.

One of the most significant of these anxieties, and one that we will explore in some detail in relation to Asimov and Clarke, centres on the subjugation of the individual to mass society. This is reflected, as Scott Sanders argues, in the growing sublimation of character to thematic or ideological concerns in much SF of the twentieth century. Sanders argues that SF as a genre assumes the inconstancy of social forms, as a result of which 'Theme replaces character as the organizing principle'.[28] In particular, the genre of SF emerges in response to the 'dissolution' of the individual self in mass society. For Sanders, SF takes as its starting point the assumption that social processes, rather than individuals, are the key sites of dynamic change in society, and that the significance of the individual in society is correspondingly diminished.[29] Hence, SF can be read as a symptom of the increasing bureaucratisation and massification of US society in the twentieth century:

> the science fiction novel offers an extension and restatement of the central problem with which the modernists wrestled—namely, the fragmentation and anonymization of the self in modern society … The primacy of system over individual appears formally in the genre in the subordination of character to plot; in the use of stereotypical characters; in the preference for technical and discursive (and therefore anonymous) language.[30]

Sanders overstates the insignificance of character in SF, particularly as the genre became more stylistically and thematically sophisticated in the post-war period—yet his assessment offers a

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Peter Fitting, 'The Modern Anglo-American SF Novel: utopian longing and capitalist cooptation', *Science Fiction Studies*, vol. 6, no. 1, 1979, pp. 59-76.

[28] Scott Sanders, 'Invisible men and women: the disappearance of character in science fiction', *Science Fiction Studies*, vol. 4, no. 1, 1977, p. 14

[29] Sanders, p. 15

[30] Sanders, p. 15

useful approach to thinking about the context of mid-century works. The intensifying mechanisation that characterised the interwar years, culminating in the unprecedented techno-industrial warfare of the Second World War—a conflict typified, as Alex Goody remarks, by 'aloof perpetrators and an undifferentiated mass of victims'[31]—did much to emphasise the intense vulnerability of the individual to large-scale, anonymous social processes. As Daniel Bell argues, the 'pervasive cultural theme' of the 1940s and 1950s 'was the depersonalization of the individual and the atomization of society'.[32] There could be no better demonstration of this than the dropping of the atomic bombs over Japan (although Bell also highlights the cultural impact of the concentration camps as archetypal technologies of massification). Indeed, Jonathan Glover suggests that the very decision to deploy nuclear weapons was at least partly enabled by the 'fragmentation of responsibility' engendered by the distributed power networks of modern political systems. As a result of such fragmentation, Glover remarks, 'the sense of personal responsibility' in the atomic bombings 'was reduced by the way agency was fragmented'.[33] Both facets of the bombings—the decision-making process, and the atrocious outcome—thus demonstrate the continued fragmentation of individual autonomy and agency in the mid-twentieth century.

Such themes are explored in many works of the period. The stultifying effects of mechanisation on human creativity, for example, are evident in Jack Williamson's 'With Folded Hands…' (1947), in which the spread of benevolent helper robots brings about the dystopian infantilisation of humanity. Conversely, the mechanisation of the human itself can be seen in such stories as C.L. Moore's 'No Woman Born' (1944), William Tenn's 'Child's Play' (1947), and Cordwainer Smith's 'Scanners Live in Vain' (1950), each of which depict the penetration of the human body by various technological systems. The suppression of individuality and persecution of deviancy also appears in a variety of works. In Van Vogt's *Slan* (1940), for instance, a race of telepathic, physically powerful humans are hunted down and slaughtered by a dictatorial government in a clear allusion, as R.D. Mullen argues, to the

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[31] Alex Goody, *Technology, Literature and Culture*, Polity Press, 2011, p. 85
[32] Daniel Bell, 'The Cultural Contradictions of Capitalism', *Journal of Aesthetic Education*, vol. 6, no. 1/2, 1972, p. 20
[33] Glover, p. 103

treatment of the Jews in Nazi Germany[34]—in both cases, the persecution rests on the assumed inhumanity of the suppressed population, which is then reworked as a threat to the social and cultural 'purity' of the dominant 'race'. Themes of social conformism and alienation may also be found in Jack Finney's *The Body Snatchers* (1954, filmed in 1956 as *Invasion of the Body Snatchers*) and Philip K. Dick's 'The Father Thing' (1954), which betray a fear of oppressive social and cultural conformity suggestive of McCarthy-era persecution. Such anxieties are further expanded, in such works as Richard Matheson's *I Am Legend* (1954) or John Wyndham's *The Chrysalids* (1955), to encompass a broader fear of the assimilation of the autonomous individual into an anonymous and sterile mass society. And, finally, Poul Anderson's *Brain Wave* (1954) emphasises the growth of invasive bureaucratic systems (a theme we will take up in more detail in the next chapter). Scientific research in the mid-century, he writes, suffers from 'projectitis', that is, the stultification of creativity by mass bureaucratic and administrative systems, a theme also evident in William Tenn's 'The Brooklyn Project' (1948) and Raymond F. Jones's 'The Person from Porlock' (1947).[35]

Istvan Csicsery-Ronay Jr. offers one potentially useful way of conceptualising this quest for new ways to represent the subjugation of individual to social forces in SF. Drawing on Michael Hardt and Antonio Negri's *Empire* (2000), Csicsery-Ronay argues that SF 'has been driven by the desire for the imaginary transformation of imperialism into Empire', the latter understood 'as a technological regime that affects and ensures the global control system of de-nationalized communications'.[36] Following the First World War, the SF empire increasingly came to take the form, as Csicsery-Ronay argues, of 'technoscientific Empire—Empire that is managed, sustained, justified, but also riven by simultaneously interlocking and competing technologies of social control and material expansion'.[37] It is, in other words, an increasingly post-nationalist empire, one underpinned by a recognisably US ideology of

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[34] R.D. Mullen, 'Review: The Garland Library of Science Fiction', *Science Fiction Studies*, vol. 2, no. 3, 1975, p. 284

[35] Poul Anderson, *Brain Wave*, 1954, *Poul Anderson: SF Gateway Omnibus*, Gollancz, 2013, p. 9

[36] Istvan Csicsery-Ronay Jr., 'Science Fiction and Empire', *Science Fiction Studies*, vol. 30, no. 2, 2003, p. 232

[37] Csicsery-Ronay, p. 236

technocratic imperialism whose expansion is registered in its ever-growing command over matter, particularly interstellar space—'a cosmos', as Csicsery-Ronay puts it, 'governed by the laws and right of technoscience'.[38] Such empires can, of course, take on both utopian and dystopian qualities: indeed, as Csicsery-Ronay argues, 'Most serious sf writers are sceptical of entrenched power, sometimes because of its tyranny, sometimes because it hobbles technological innovation'.[39] Hence, while writers such as Heinlein or Smith celebrate the libertarian possibilities opened up by technocratic rule, others such as Huxley or Čapek warn of the existential cost of substituting technological for political or cultural power in society.

The key phrase in Csicsery-Ronay's outline of the SF 'Empire' is 'technological regime'. In this study, we have been interested in how technology underpins humanist and posthumanist conceptions of nature, society, and humanity itself. SF, as we have seen, can be read as an aesthetic response to the overlapping ontologies of the human and the technological—a relationship between 'man and machine … in which neither can be reduced to the other' but instead co-exists in 'a reciprocal relationship'.[40] As Andreas Huyssen remarks, the experience of technology in the former half of the twentieth century can be divided into the 'aestheticization of technics … on the one hand and the horror of technics inspired by the awesome war machinery of World War I on the other'—what Peter Childs describes as 'a championing as well as a fear of technology' that echoes the distinction between technophilic and technophobic works that has so far informed this study.[41] These contrasting perceptions of technology are incorporated in various ways into the SF works we have examined: in the valorisation of technology in the works of Verne and Smith, the authority granted to scientific and technical discourse in Verne and Doyle, and the contrasting condemnations (from quite different standpoints) of the technological and industrial transformation of human nature in

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[38] Csicsery-Ronay, p. 238
[39] Csicsery-Ronay, p. 241
[40] Tim Armstrong, *Modernism, Technology, and the Body: a cultural study*, Cambridge University Press, 1998, p. 86
[41] Andreas Huyssen, *After the Great Divide: modernism, mass culture, postmodernism*, Indiana University Press, 1986, p. 10; Peter Childs, *Modernism*, Routledge, 2000, ch. 4

Huxley and London. Each of these works must be understood as aesthetic responses to the conditions of modernisation in the nineteenth and early twentieth centuries.

The rapid development of technological and bureaucratic systems in the decades leading up the Second World War and beyond brought about a certain alteration in SF conceptions of the individual. Within the 'technoscientific regimes' of many SF works, as in the real biopolitical regimes of the mid-century, the question becomes one of how the relationship between individual and society is to be imagined or realised. The liberal humanist model of the active and autonomous agent, endowed with the capacity for meaningful social action, seems ill-equipped to deal with the realities of mid-century mass society—with the growing technological empires that came ever more to dominate social and political life. One potential alternative, as we will see in the works of Asimov and Clarke, may be found in the figure of the supra-human. The supra-human comprises the natural citizen of the SF empire: by transferring the capacities and anxieties of the individual human being to the mass social body, the supra-human offers one way to allegorically resolve the conflict between humanist individualism and mass, anonymous social and political forces. In order to explore this possibility in more detail, we turn first to Asimov's *Foundation*.

Benevolent biopolitics in Asimov's *Foundation*

We begin our discussion of Asimov with a passage from a 1987 interview which, as I will demonstrate, usefully captures a number of Asimov's views regarding the significance and fate of the human species. Responding to the possibility that robots may one day become 'sufficiently intelligent to replace us', Asimov responds:

> I think they should. We have had many cases in the course of human evolution, and the vast evolution of life before that, in which one species replaced another, because the replacing species was in one way or another more efficient than the species replaced. I don't think Homo sapiens possesses any divine right to the top rung … As a matter of fact, my feeling is that we are doing such a miserable job in preserving the Earth and its life-forms that I can't help but feel the sooner we're replaced the better for all other forms of life.[42]

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[42] Earl G. Ingersoll et al, 'A Conversation with Isaac Asimov', *Science Fiction Studies*, vol. 14, no. 1, 1987, p. 69

Asimov here summarises two distinct narratives of human progress. The first is biological, situating humanity as the dominant species of evolutionary history. Asimov's notion of humanity here is marked by a sense of paternal stewardship: positioned on the 'top rung' of the biological ladder, humanity is burdened with the responsibility of 'preserving' the rest of the natural world, with the corresponding implication that the continued survival of nonhuman nature is therefore an outcome of human munificence. The second, in contrast, is technological: there is no doubt in Asimov's mind that such a time will come when technological artefacts have gained the sentience required to sustain themselves, and may at that point supersede humanity as the rightful lords of nature. This is no Frankensteinian moment, however: Asimov is nothing if not a 'rationalist', as he himself puts it, and so is committed to embracing the supersession of humanity if it arises as the logical outcome of an evolutionary process.[43]

Asimov's words suggest a great deal about his views concerning the human being and human society: we can glimpse key elements here of his beliefs concerning paternalism, rationality, mechanism, and the emphasis on mass population over the individual. These themes inform Asimov's best-known work, his *Foundation* series. *Foundation* is one of the most well-known series in western SF, beating even Tolkien's *The Lord of the Rings* (1954-55) to claim the Hugo Award for 'Best All-Time Series' in 1965.[44] Patterned on Gibbon's *The Decline and Fall of the Roman Empire*, the series centres on the rise and fall of the 'Galactic Empire', an imperial system comprising the millions of inhabited worlds of the Milky Way. At the outset of the series, Hari Seldon, a mathematician on the planet of 'Trantor' (central planet of the Empire), has developed a set of techniques for predicting the future evolution of any given society, a branch of applied mathematics and sociology he names 'psychohistory'. After applying the principles of psychohistory to the 'Galactic Empire', Seldon realises that the Empire is on the verge of social and political collapse. In response, he establishes a colony of intellectuals on an isolated planet, with the ostensible aim of collating and preserving the massed knowledge of the galaxy. In reality, this colony, called the 'Foundation', is intended to

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[43] Isaac Asimov, *I, Asimov: a memoir* [henceforth *IA*], 1994, Bantam Books, 1995, p. 13
[44] The 'Hugos', named after Hugo Gernsback, are a set of annual awards given by the World SF Society to the year's best SF and fantasy works, as determined by reader polls.

act as the germ for the second Galactic Empire, with its historical development following the course of a secret 'Plan' devised by Seldon himself. The original trilogy then follows the fortunes of the Foundation over the first four centuries of its development. *Foundation* (the novel) depicts the early years of the colony, as the inhabitants of Terminus establish control over their more powerful neighbours and overcome a series of economic and political 'crises' predicted by Seldon. In *Foundation and Empire* and *Second Foundation*, the citizens of the Foundation face further crises, both predicted and unforeseen, including a final confrontation with the dying Empire, the rise of the 'Mule'—a mutant who can manipulate the emotions of those around him, and who threatens to use this power to seize control of the galaxy—and the discovery of the 'Second Foundation', a community of telepaths secretly established by Seldon to guide the course of the First Foundation along the 'Seldon Plan'.

The human characters that populate Asimov's trilogy are, as we will examine in greater detail, successors to the 'supermen' of the early pulps: rational, active beings, intent on the continuation and expansion of human technological enterprise. As described in the previous section, this is in part a result of the technological hegemony and economic domination of the US in the mid-century period, a context which informed the largely uncritical technophilic attitude evident throughout Asimov's series. At the same time, however, the increasing trend towards bureaucratic management, massification, and mechanisation in US society, as well as the traumatising impact of the Second World War, led also to anxieties centred on the susceptibility of the individual to suppression by faceless social processes. In response, *Foundation* advocates a kind of biopolitical social system in which the desires of the individual are sublimated to the continuation of the species—yet a continuation guided, importantly, by benevolent, rational, and paternalistic institutions. Individual agency must be sacrificed for the sake of such social well-being, and so the view of the individual that emerges in Asimov's works is mechanistic: like his famous robots, constrained by the 'Three Laws' that dictate their range of possible behaviours, Asimov's humans are determined by fixed, calculable behaviours, and subject to mass biopolitical control by faceless organisations.[45] In the end, we arrive in

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[45] The 'Three Laws of Robotics' play a fundamental role in Asimov's *Robot* series of stories and novels. This series began with in 1940 with 'Robbie' (published as 'Strange Playfellow',

Foundation at a vision, not of posthumanism, but rather of *supra*-humanism, in which the central focus of the humanist narrative shifts from the level of the individual to that of the whole species, while retaining the central emphasis on rational development as the key mechanism for human progress.

We begin this analysis by examining the genesis of Asimov's series, which, as with his famous *Robot* stories, appeared early in his writing career. Like many Golden Age writers, Asimov was a protégé of Campbell, and *Foundation* first appeared as a series of related stories in the pages of *Astounding* between 1942 and 1949. Campbell had a major impact on the form of the works: Asimov had originally intended to write only a single story about the collapse of a 'Galactic Empire', but Campbell encouraged him instead to produce a 'long open-ended saga' covering thousands of years of galactic history.[46] At the same time, according to Asimov, it was Campbell who was primarily responsible for the exclusive focus on *human* society and individuals, as opposed to non-human beings or worlds, in the works. As Asimov notes, Campbell was intensely anthropocentric—indeed Eurocentric—in his attitudes towards SF, and would not publish any story suggesting that humanity might not be the supreme species of the universe:

> John could not help but feel that people of northwest European descent (like himself) were in the forefront of human civilization and that all other people lagged behind. Expanding this view to a galactic scale, he viewed Earthmen as the 'northwest Europeans' of the galaxy. He did not like to see Earthmen losing out to aliens, or to have Earthmen depicted as in any way inferior. Even if Earthmen were behind

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Super Science Stories, September 1940), and Asimov continued to add to it throughout his life, eventually merging the *Robot* universe with that of his *Foundation* series. The 'Three Laws' are a set of rules created by humans to control the behaviour of robots, articulated in *The Complete Robot* (1982) as follows:

> *1. A robot may not injure a human being, or, through inaction, allow a human being to come to harm*
> *2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law*
> *3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law*

A Zeroth Law was eventually added to supplement the original three: '*A robot may not injure humanity, or, through inaction, allow humanity to come to harm*'. See Isaac Asimov, *The Complete Robot*, 1982, HarperCollins, 1995, p. 635, emphasis in original.
[46] Asimov, *IA*, p. 117

technologically, they should win anyway because they invariably were smarter, or braver, or had a superior sense of humor, or *something*.[47]

Asimov, as a Russian Jewish immigrant to the US, did not necessarily share Campbell's chauvinistic viewpoint on Anglo-Saxon superiority, particularly as he fell victim to the anti-Semitic prejudice widespread in the US in the lead-up to the Second World War. In order to sidestep Campbell's dogmatic insistence on human triumph in the stories published in *Astounding*, Asimov decided simply not to include any aliens at all in his *Foundation* works. Instead, he depicts an 'all-human galaxy', a format which allowed 'the play and interplay of human beings [to] be followed on an enormous canvas'.[48] (In *Foundation's Edge*, the 1982 sequel to the *Foundation* series, the absence of non-human entities is explained to be the result of galactic engineering by the 'Eternals', a secretive group of human individuals who exist outside of time.)

Asimov's reluctance to depart too radically from Campbell's strict Eurocentric norms perhaps accounts for the fact that, despite the vast spatial and temporal frameworks employed in the stories of *Foundation* (the Galactic Empire is described as having persisted for more than twelve thousand years), Asimov's human characters remain as familiar as if they had stepped straight out of his own 1940s New York. The humans that populate Asimov's Galactic Empire correspond to a recognisable type common to much Golden Age SF, and particularly the stories published in Campbell's *Astounding* by writers such as Heinlein, Del Rey, Van Vogt, and so on: conservative, pragmatic, technically-minded males, committed to rational thought and discursive exposition as a means to resolve conflict. In this, Golden Age SF betrays its pulp ancestry: the heroes of such stories are the natural successors to the Seatons and Arcot-Morey-and-Wade's of the early space operas, although the superscience elements of the 1920s and 1930s pulps had, by the mid-century, been toned down in favour of 'softer' sociological themes.[49]

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[47] Isaac Asimov, *Gold: the final science fiction collection* [henceforth *G*],1995, HarperCollins, 1996, pp. 243-244

[48] Asimov, *G*, p. 246

[49] Arcot, Morey and Wade are the protagonists of Campbell's space operatic series of stories and novels (including *Islands of Space*, discussed in the last chapter) originally published in the 1930s.

As a consequence of Asimov's devotion to this type, however, all the human characters depicted in the *Foundation* series appear remarkably and implausibly alike. As Charles Elkins argues, despite the incredible technological and scientific innovations depicted in the series— 'traveling faster than light, developing atomic technology, predicting and controlling human events, controlling minds'—'Man' in Asimov's series 'remains essentially the same; the springs of human action are unchanged'.[50] Even the cadences of speech throughout the vast reaches of the galaxy remain firmly rooted in the vernacular of Asimov's mid-century American dialect: Salvor Hardin, for instance, mayor of the Foundation in its early years, warns his fellow council members against 'jolly[ing] along' a neighbouring enemy planet, before lamenting that '*the Galaxy is going to pot*!'[51] Such an apparently unwavering attachment to one very local version of the human may partly stem, of course, from Asimov's self-confessed lack of knowledge concerning human psychology. As he remarked in 1987, he is 'illiterate in psychology', while elsewhere he has also commented on his own poor grasp of the complexities of the human psyche: 'I have to make my characters act according to my own feel, my own intuition, which isn't good enough. I haven't studied people that well … I wish better maps were drawn'.[52] Coupled with his avowed lack of interest in the development of literary style, this leads him to neglect any novelistic exploration of psychological depth or complexity.[53]

Yet James Gunn also defends the 'strategic narrative value' associated with the 'maintenance of contemporary characteristics' evident in the relatively static and unsophisticated depiction of human individuals in *Foundation*: by assuming the existence of an unchanging human nature, Gunn argues, Asimov frees himself to instead focus on the

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[50] Charles Elkins, 'Isaac Asimov's "Foundation" series: historical materialism distorted into cyclical psycho-history', *Science Fiction Studies*, vol. 3, no. 1, 1976, p. 27
[51] Asimov, *Foundation* [henceforth *F*], 1951, Panther Books, 1977, p. 46, 48, emphasis in original
[52] Alan C. Elms, 'From "Nightfall" to *Dawn*: Asimov as Acrophobe', 1987, *Conversations with Isaac Asimov* [henceforth *CIA*], edited by Carl Freedman, University Press of Mississippi, 2005, p. 127; Isaac Asimov and Frank Kendig, 'A Conversation with Isaac Asimov', *CIA*, p. 104
[53] Asimov's views on literary style are best summarised by himself: 'It is well-known that I know nothing about the craft of writing in any formal way' (Asimov, *G*, p. 381).

'evolution of an idea'.[54] Donald M. Hassler makes a similar point in relation to the depiction of technology in the series: Asimov, he argues, by declaring his major interest to be 'the influence of social change and history', and thereby fixing his interest on the 'why' of social forces rather than the 'how' of purely technological wizardry, 'effectively disassociates himself from the "gadget" materialism of [other] SF writers'.[55] Indeed, in a 1953 essay, 'Social Science Fiction', Asimov himself states as much, defining three types of SF—'gadget', 'adventure', and 'social'—before placing himself squarely in the final category. In doing so, he characterises himself as a writer whose interest lies neither in the description of richly-realised human characters nor of new technologies, but in the human societies in which such technologies have 'already [been] perfected' and are therefore 'already a problem'.[56]

This is a claim that warrants some investigation. Throughout his fiction, Asimov displays little serious interest in exploring the potential impacts of technological advancement on the human condition. Even his *Robot* stories, which explicitly focus on the development of revolutionary new technologies (the robots themselves), do not seriously interrogate questions of technological or human ontology, comprising instead exercises in mere problem-solving as Asimov works his way through a host of scenarios involving the Three Laws. Berger, as noted above, places Asimov's works squarely within a mode of SF writing that treats technology uncritically, accepting its role as the primary driver of societal change over and above other human institutions or ideologies. Indeed, despite the evident dangers associated with it, Asimov was a firm believer in the widespread deployment of atomic technology until the end of his life, maintaining a clear distinction between constructive and destructive uses of such technology. In his *New Guide to Science* (1987), for example, after lamenting the possibility of 'all-out thermonuclear war between the two superpowers', Asimov goes on to describe the various

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[54] James Gunn, *Isaac Asimov: the foundations of science fiction*, Oxford University Press, 1982, p. 47

[55] Donald M. Hassler, 'Some Asimov Resonances from the Enlightenment', *Science Fiction Studies*, vol. 15, no. 1, 1988, p. 40

[56] Isaac Asimov, 'Social Science Fiction' [henceforth 'SSF'], 1953, *Science Fiction: the future*, edited by Dick Allen, Harcourt Brace Jovanovich Inc., 1971, 266-267

ways that 'fission products can be put to good use', including such small-scale innovations as atomic batteries that would not look out of place in his *Foundation* universe.[57]

Consequently, in *Foundation* we can clearly detect an emphasis on technology as an emblem of human civilisational power. At the outset of the trilogy, for example, Trantor, the central planet of the collapsing Galactic Empire, has been entirely enclosed within a cocoon of 'lustrous, indestructible, incorruptible metal'—an image of the total technological enclosure of human environments that Asimov was later to reuse in his *Robot* novels, *The Caves of Steel* (1953) and *The Naked Sun* (1956).[58] Trantor is described as 'the mightiest deed of man: the complete and almost contemptuously final conquest of a world' by means of advanced tools and machines.[59] Following the collapse of the Empire, however, and the subsequent looting of the great machinery of Trantor by nearby worlds, the planet is transformed into a barren wilderness whose citizens are forced to return to the soil, selling off the metal of their planet 'for seed and cattle' and returning the planet 'to its beginning [in] primitive agriculture'.[60]

The symbolism here is blatant: human civilisational progress is equated with extensive or sophisticated technological capacities, without which human populations are left exposed to both the aggression of hostile enemies and the ravages of nature. In a similar way, the eventual imperial conquest of the galaxy by the Foundation is driven by its superior knowledge of nuclear science, which allows the tiny colony to swiftly establish economic control over the surrounding 'Four Kingdoms', despite vastly inferior material resources and a near-total lack of military assets. The takeover of the despotic planet of Korrell, for example, exploits the appeal of superior technology as a means for establishing the relative dominance of human populations: having made the Korellians dependent on the products of their culture—'the machines in the factories', as well as the 'household gadgets', the 'woman's atomic knife' and 'Automatic Super-Kleeno Atomic Washing Machines'—the Foundation succeeds in fostering a culture of technological consumerism without relinquishing the means or method of

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[57] Isaac Asimov, *Asimov's New Guide to Science*, Penguin Books, 1987, p. 444, 451
[58] Isaac Asimov, *Foundation and Empire* [henceforth *FE*], 1952, Grafton Books, 1987, p. 75
[59] Asimov, *F*, p. 14
[60] Isaac Asimov, *Second Foundation* [henceforth *SF*], 1953, Panther Books, 1979, p. 152

production.[61] They can then deploy the threat of technological embargo as an effective means of economic control over the planet, a tactic that mirrors the shape of US economic imperialism throughout much of the twentieth century.

Furthermore, Asimov's insouciant deployment of a vast galactic setting for his stories of imperial intrigue is an indication of his relatively uncritical acceptance of the continuation of human, and particularly American, technological and imperial capacities: it is no longer necessary to describe or examine the material means by which humanity fulfils its imperial ambitions, since it is simply assumed that the technology will exist, and will be available when needed. The technological conquest of space is, of course, a recurrent trope of much early SF, as we have seen, and in a sense the move from earthly through interstellar to galactic dimensions may be viewed as simply the next step in a logical expansion of imperial spatial frameworks in SF dating from the *voyages* of Verne. But Nemo's twenty thousand leagues at least take time to clock up—ten months, to be precise—while even Smith's *Skylark* works stress the cognitive dissonance produced by the contrasting scales of human and galactic spatial experience. [62] There is, in other words, a tangible 'sense of wonder' generated by the technological collapse of human spatial frameworks in these earlier works. This sense diminishes significantly in later SF: the prevalence of interstellar travel, and particularly the trope of the galactic empire that forms the background to much mid-century SF—in Asimov's *Foundation* and *Empire* series, for instance, but also in Smith's *Lensman* (1934-48), James Blish's *Cities in Flight* (1955-1962) and *A Case of Conscience* (1958), and Clarke's *The City and the Stars*, in films such as Fred M. Wilcox's *Forbidden Planet* (1956), and in stories such as Van Vogt's 'Black Destroyer' (1939), Fredric Brown's 'Arena' (1944) and Tom Godwin's

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[61] Asimov, *F*, pp. 185-186

[62] Consider, for example, the following passage from Smith's *The Skylark of Space*: 'Awed by the immensity of the universe, the two at the window were silent, not with the silence of embarrassment, but with that of two friends in the presence of something beyond the reach of words. As they stared out into the infinity each felt as never before the pitiful smallness of even our whole solar system and the utter insignificance of human beings and their works' (p. 546). See E.E. Smith and Lee Hawkins Garby, 'The Skylark of Space: Part 2', *Amazing Stories*, vol. 3, no. 6, September 1928, pp. 528-559, web, *Internet Archive*, archive.org/details/ Amazing_Stories_v03n06_1928-09, accessed June 2017.

'The Cold Equations' (1954), to name only a few examples—indicates the diminishing role of space within SF as a recognised material limitation to human technological or imperial advance.

We can relate these developments to the Enlightenment model of human hegemony over time and space described in the previous chapter. The vast scale of *Foundation*, the fleeting sketches of entire planets and worlds, and the sweeping scale of narrative timelines all suggest the radically homogenised temporal and spatial frameworks that characterised the Enlightenment conception of time and space—a rationalist worldview that has left behind embedded or material experiences of time and space in its transition to the stars. We can further link this depiction to Csicsery-Ronay's conception of the technoscientific SF 'empire' outlined above—Asimov's imperial Foundation dramatises the '[v]iolent … overcoming [of] obstacles placed in its way by "nature"' that Csicsery-Ronay describes as characteristic of such imagined imperial formations.[63] In *Second Foundation*, for example, Asimov describes 'the Lens', a piece of cartographic apparatus that can generate 'a reproduction of the night sky as seen from any given point in the galaxy'.[64] The Lens empowers the Galactic Empire by giving it complete command over space and time, as a result of which the authority of the Empire, as Asimov writes, must be understood 'scientifically and culturally' rather than 'politically'.[65] The Lens takes the modernising concept of the 'destruction of space through time' to its extreme logical limits: Asimov's reduction of the galaxy to a set of discrete, interchangeable, and easily negotiated worlds is an extreme example of the 'conquest and rational ordering of space [which] became an integral part of the modernizing project'—a demonstration of what David Harvey terms 'time-space compression', the 'overcoming of spatial barriers' to the extent that 'the world sometimes seems to collapse inwards on us'.[66] Space as a phenomenological category— that is, as a material obstruction to human action that must be overcome through the forward motion of time—is thus effectively neutralised in Asimov's *Foundation* works.

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[63] Csicsery-Ronay, p. 238
[64] Asimov, *SF*, p. 26
[65] Asimov, *SF*, p. 26
[66] David Harvey, *The Conditions of Postmodernity: an enquiry into the origins of cultural change*, 1990, Blackwell, 1992, p. 249, 240

We can see, then, that Asimov's complacent attitude towards technology in *Foundation* not only reflects the context of US technological hegemony in which he was writing, but also echoes the perceptions of triumphant human command over material space and time characteristic of earlier imperialist works. Whereas Conan Doyle's *The Lost World* deploys evolutionary theory in order to dramatise the civilising mission that underpinned the moral narratives of European colonial imperialism, the irresistible expansion of human technological enterprise in Asimov's trilogy enacts the 'manifest destiny' of US economic and technological imperialism. It is no coincidence that the primary drivers of the imperial expansion of the Foundation are the 'traders'—domineering technocrats whose technological wares are shrouded in religious 'mummery' intended to encourage a reverential attitude towards technology among the subjects of the Foundation.[67] The eventual evolution of the traders into sovereign 'merchant princes' completes an image of linked economico-political and human technological supremacy which typifies the era.

So far, then, the *Foundation* trilogy appears set to recapitulate the buoyant techno-humanism of the earlier space operas of Smith, Hamilton, and Campbell, in which technology provides the material and ideological means to extend (western) human hegemony beyond the terrestrial plane, and thus enact human imperial destiny among the very stars themselves. To return to Asimov's self-identification as a 'social' SF writer concerned with the 'problem' of technological development, we can see that technology seems *not* to be a problem at all in his *Foundation* works, at least not on the level of human manipulation of material nature in the service of its own ends. Far from being a source of narrative tension, as Asimov claims, it more closely resembles a largely unexamined structural motif deployed to underpin a vision, familiar from earlier SF, of human galactic imperialism.

Yet *Foundation* is also marked by the distinct shift in emphasis away from the larger-than-life supermen that populated the SF of the 1920s and 1930s, and towards a much broader focus on social and historical evolution. This shift was mirrored in the growing prominence of 'future histories' within the genre in the mid-century—including Simak's *City*, Heinlein's *The*

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[67] Asimov, *F*, p. 73

Past Through Tomorrow, Cordwainer Smith's *Instrumentality of Mankind*, James Blish's *Cities in Flight*, and others—of which Asimov's *Foundation* is perhaps the most famous example. As discussed above, this trend stems at least partly from a number of anxieties centred on the changing relationship between the individual and society in the mid-century US—yet we can also begin to trace this shift from individual to thematic or ideological concerns within Asimov's own literary preoccupations. In an essay published in 1995, Asimov distinguishes between narratives concerned with developing 'an insight into the characters of the individuals who people the story' and those more concerned with the exploration of 'ideas'.[68] In this latter category, he remarks, characters are intended to behave not as well-rounded and complex individuals, but rather as representations of specific ideological viewpoints whose role within the work is to 'champion alternative views of life and the universe'.[69] This is the category of story in which Asimov places his own works: 'I am so intent on presenting my opposing ideas', he writes, 'that I make no serious attempt to characterise brilliantly'.[70] We can extrapolate from this preoccupation to take account also of the expansive timelines of Asimov's works: his early interest in history (Asimov briefly considered undertaking a Ph.D. in that subject before switching to chemistry)[71] leads him to explore not only social or political ideas, but the evolution *over time* of such ideas.

Such a thematic—the dynamic movement of human society through time—was for Asimov the natural subject of the most compelling SF. In his 1953 essay, Asimov wrote that, since it is obvious to any 'post-Napoleonic … educated man that human society not only could change but that it did', SF should and indeed must engage with this trend if it is to add up to anything 'more than let's-pretend object lessons'.[72] The historical format of his *Foundation* series—a collection of nine stories comprising snapshots of a four-hundred year history— obviously limits the extent of characterisation feasible within the series, as a result of which, for example, Hari Seldon, founder of the Foundation, directly appears in only one story, while

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[68] Asimov, *G*, pp. 314-315
[69] Asimov, *G*, p. 315
[70] Asimov, *G*, p. 315
[71] Asimov, *IA*, p. 116
[72] Asimov, 'SSF', p. 273

the primary antagonist of the series, the 'Mule', features in only two. As Hassler puts it, 'the real hero of the trilogy is the sublime history of humankind itself', with distinctive and fully-realised human characters sacrificed to Asimov's preoccupation with grand historical developments.[73]

This erosion of individuality is perhaps best encapsulated in *Foundation* by the science of 'psychohistory' that underpins the development of the Foundation. In 'The Psychohistorians', the first story of the series, psychohistory is defined as 'that branch of mathematics which deals with the reactions of human conglomerates to fixed social and economic stimuli'.[74] It involves the application of theories derived from sociology, history, and statistical mathematics to human society in order to predict future events on a galaxy-wide scale, and underpinned by 'the mathematics of human behaviour that can neither be stopped, swerved, nor delayed'.[75] The diminished significance of the individual human is intrinsic to the formulation of psychohistory since, as described by the *Encyclopaedia Galactica* (a fictional work within the series), the 'conglomerate' under psychohistorical observation must be 'sufficiently large for valid statistical treatment'.[76] The comparison is made between populations and gases: although individual actions cannot be predicted 'any more than you could apply the kinetic theory of gases to single molecules', when dealing with 'mobs, populations of whole planets', social progress can be charted with apparent precision.[77] The scientific analogy is fitting, since the manifold permutations of human society are in this way boiled down to a set number of predictable variations, all of which spring from the primary ordering principle of human progress: human history itself. It is from history that Seldon extracts his rationalist plan for the future of humanity, and thus the periodic 'Seldon crises' undergone by the Foundation are, predictably enough, 'not solved by individuals but by historic forces'.[78]

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[73] Hassler, p. 44
[74] Asimov, *F*, p. 16
[75] Asimov, *FE*, p. 31
[76] Asimov, *F*, p. 16
[77] Asimov, *F*, p. 81
[78] Asimov, *F*, p. 184

The implications of Asimov's formulation of psychohistory here appear quite startling. If the soma of *Brave New World* is emblematic of the threat to the 'courageous individuality' of liberal humanism posed by the stultifying effects of mass society and culture, the psychohistory of *Foundation* signifies a turn away from heroic individuality altogether in favour of determinist—and anti-humanist—conceptions of society and history.[79] In particular, given its prioritisation of mass populations over individuals, we can characterise psychohistory, and in particular the formulation of the Seldon Plan, as a kind of biopolitical system that treats conglomerations of human individuals—in this case, the whole of the galaxy—as a quantitative problem to be managed by technological means. Biopolitical technologies, as Foucault notes, operate in relation to 'phenomena' that, like the gas cloud metaphorically employed by Asimov, 'are aleatory and unpredictable when taken in themselves or individually, but which, at the collective level, display constants that are easy, or at least possible, to establish'.[80] The Seldon Plan can thus be viewed in terms of what Foucault calls a 'technology of security': a regulatory tool designed to ensure the normalisation of the 'mechanics of life' in a society, judged according to an aggregate of parameters within which the possibility of individual deviation or nonconformity becomes statistically irrelevant.[81] The 'calculated management of life' undertaken by the 'Second Foundation'—a secret society of telepathic psychologists established by Seldon to maintain the course of the Seldon Plan—reveals its biopolitical function: its role is not to actively govern but rather to ensure the normalisation of the galactic population so that the progressive development of society is not interrupted.[82]

It is the Second Foundation which successfully neutralises the 'Mule', an unpredictable mutant who, over the course of two stories, threatens to upset the Seldon Plan and, in consequence, expose humanity once again to the arbitrary conditions of unchecked historical change. The threat posed by the Mule is registered in his distorted body. Again and again

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[79] Tony Davies, *Humanism*, Routledge, 1997, p. 47

[80] Michel Foucault, *Society Must Be Defended: lectures at the Collège de France 1975-76*, 1997, translated by David Macey, Picador, 2003, p. 246

[81] Thomas Lemke, *Biopolitics: an advanced introduction*, translated by Eric Frederick Trump, New York University Press, 2011, pp. 36-37; Michel Foucault, *The History of Sexuality, Volume 1: an introduction* [henceforth *HS*], translated by Robert Hurley, Pantheon Books, 1978, p. 139

[82] Foucault, *HS*, p. 140

throughout the two stories in which he appears, the emphasis is placed on his peculiar physical appearance: he is variously described as 'not a man to look at without derision', 'one hundred and twenty pounds … stretched out into his five-foot-eight length', with 'bony stalks' for limbs and 'a fleshy beak that thrust three inches outward' from his face; a 'spindly figure' with 'beaked face'; and again, a 'grotesque', with 'pipestem limbs' and a 'beak of a nose'.[83] These bodily mutations serve to highlight his status as a social aberration, in sharp contrast to the perceived intellectualism of the telepathic Second Foundation. It is significant that the trope of telepathy, widespread in mid-century works, is deployed in *Foundation* primarily in relation to the all-powerful Second Foundation. (The Mule also demonstrates telepathic powers, but these are dismissed as a 'freak' accident of nature.[84]) Telepathy in *Foundation*, as in *Skylark*, offers an index of the greater prioritisation given to transcendent intellectualism over and above the material world and, in particular, the human body. In contrast, the deformed aspect and sterility (hence his name) of the Mule emphasise the perceived redundancy of the individual human body in the narrative schema of *Foundation*, which seeks to suppress individuality in its quest for the grandeur of a vast, overarching history of the human species.

This, too, we can read in biopolitical terms. 'Biopower', as Hardt and Negri argue, operates to 'alienate' individuals from a 'sense of life', which imposes an ever more pervasive system of external controls that overrun the very material-biological processes—the 'brains' and 'bodies'—of 'bare life' itself.[85] For Foucault, the material body constitutes the final site of resistance in biopolitical regimes, the location upon which technocratic discipline and surveillance is ultimately enacted, and from which liberation must begin.[86] The overthrow of the Mule in *Foundation* thus dramatises the suppression of the biological body in favour of abstracted systems of technocratic control enacted by the Second Foundation.

Yet *Foundation* goes even further than this in its subversion of the individual, since not only the mass of the population but also the individual human mind may be subject to rationalist analysis and control. For Asimov, the human mind is characterised by a set of (as he puts it)

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[83] Asimov, *SF*, p. 14; Asimov, *FE*, pp. 111-112, 234
[84] Asimov, *SF*, p. 167
[85] Michael Hardt and Antonio Negri, *Empire*, Harvard University Press, 2000, p. 23
[86] See Harvey, pp. 213-214

'rules' equated with 'the motions [emotions?] and impulses of humanity: hate, love, fear, suspicion, passion, hunger, lust, and so on'—rules that, it is assumed, 'will not change while mankind remains Homo sapiens'.[87] Correspondingly, the human brain in *Foundation* is principally conceived not as a dynamic, organic mass, but as a piece of electrical apparatus that may be both known and improved upon by means of technological intervention. The 'electroencephalographs' of the First Foundation can, for example, with 'feathery electrodes' and 'vacuum-encased needles', 'reveal the thoughts and emotions of the subject, to the last and least', transcribed onto 'neatly squared paper'.[88] The telepathic abilities of the Second Foundation, too, are developed on the basis of 'mental science' developed from 'the facts of neural physiology and the electro-chemistry of the nervous system' all the way down to 'nuclear forces'.[89]

In this, Asimov once again cites Campbell's influence, who, he claims, insisted that elements of 'symbolic logic' be incorporated into the *Foundation* stories. Symbolic logic is a means of communicative analysis that employs logical symbols, rather than language, to express denotative statements. Campbell believed that, if 'further developed', such a mode of expression 'would so clear up the mysteries of the human mind as to leave human actions predictable'.[90] Yet the blame can hardly be wholly passed onto Campbell here: throughout Asimov's fiction there appears a view of human behaviour as determinable through the rational application of the laws of cause and effect. Hassler describes Asimov's *Robot* stories as characterised by 'continual games of "if this, then the next,"' by means of which Asimov can explore all the 'combinations and permutations' of the Three Laws of Robotics.[91] This is a facet not only of the stories of *I, Robot* (1950), but of *all* of Asimov's works, throughout which the ability to accurately predict the behaviour of other individuals routinely provides the basis for resolving narrative conflict. Indeed, Asimov himself says as much, stating that he 'tend[s] to see the world mechanistically. I don't want to suppose that there are problems that are inherent

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[87] Quoted in Gunn, p. 47, bracketed content in original
[88] Asimov, *SF*, pp. 94-95
[89] Asimov, *SF*, p. 84
[90] Isaac Asimov and James Gunn, 'An Interview with Isaac Asimov', *CIA*, p. 40
[91] Hassler, p. 39

and insolvable'.[92] The typical Asimovian story pits mutually opposing antagonists against one another in an extended game of logical one-upmanship, and is resolved only when one party succeeds in accurately pre-empting the behaviours or responses of the other. This is the structure, for example, of the two stories collected in *Second Foundation*: each of these tales culminates with a twist ending in which it is revealed that Preem Palver, leader of the Second Foundation, has successfully predicted the future behaviours of his antagonists—the Mule in the first story, the First Foundation in the second—and pre-emptively arranged appropriate counter-responses.

Ultimately, then, the view of the human that emerges from Asimov's SF works is that of a mechanistic being, determined by fixed 'rules' that may be uncovered and manipulated. Such a situation relegates the individual human being, as one general of the Galactic Empire indignantly notes, to the status of 'a silly robot following a predetermined course into destruction', a point with which his Foundation adversary enthusiastically agrees.[93] This reconceptualisation of the individual in mechanistic terms is threaded throughout the stories of *Foundation*, in the biopolitical emphasis of psychohistory. Psychohistory applies the principle of reason on a galactic scale, treating the population of the galaxy in supra-humanist terms: as a composite body comprising the whole galactic population, whose individual components move, or are made to move, in harmony with one another. This shift in emphasis—from the sanctity of the individual to that of the mass population—is condensed in Asimov's formulation of the 'Zeroth Law of Robotics', which expands the emphasis of the First Law from the individual human to the whole of humanity: 'No robot shall injure humanity, or, through inaction, allow humanity to come to harm'.

Social engineering of the sort described by Sanders above, then, does not come much grander than the Seldon Plan, in which the combined might of fatalistic historical forces and the biopolitical manipulation of the Second Foundation sweep the population of the galaxy along a predestined line towards a set future. Individual agency within such a system, it seems, is destined to become subsumed within the authoritarian anti-humanism of mass biopolitical

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[92] Asimov and Kendig, 'A Conversation with Isaac Asimov', p. 104
[93] Asimov, *FE*, p. 31

structures, administered from afar by seemingly omniscient and pervasive authority figures such as Hari Seldon.

So can we then characterise the *Foundation* trilogy as a quintessentially anti-humanist work— a mid-century expression of biopolitical determinism, written in an age of mass oppressive regimes, in which the agency of the individual must necessarily be subverted to ensure the survival of the population? This question cannot be answered with a simple affirmative. I noted above that Asimov's central focus on *human* (as opposed to non-human) societies and individuals in his *Foundation* works was a reflection of Campbell's insistence on the supremacy of European humanity, and that the form of his human characters—active, rational, pragmatic men—was a reflection of a more general human 'type' in Golden Age SF. At the same time, however, as mentioned above, Asimov did not share Campbell's northern European ancestry, being of Russian and Jewish heritage, and indeed the emergence of National Socialism in Germany during the 1930s meant that he was 'no great admirer of … northwest European stock'.[94] Asimov had been the victim of 'mild' anti-Semitic prejudice (as he describes it) in his youth, and during the 1930s was keenly aware, as 'no American Jew could fail to be … that the Jews, first in Germany, then in Austria, were being endlessly humiliated, mistreated, imprisoned, tortured, and killed, merely for being Jewish'.[95] In his autobiography, he goes even further than this, linking the persecution of the Jews in Europe to that historically suffered by African Americans in the US, even long after the abolition of slavery.[96] Asimov was, then, acutely aware of both the possibility and the consequences of the widespread oppression of human beings, and of the many forms of violence necessary to maintain such oppressive regimes.

In responding to such disquieting trends, the question becomes one not only of ensuring the survival of the species, but also, and more importantly, of protecting the individual from institutional violence. One way of achieving this was through the simple application of reason,

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[94] Asimov, *G*, p. 244
[95] Asimov, *IA*, p. 20
[96] Asimov, *IA*, pp. 21-22

as demonstrated in Asimov's formulation of psychohistory. Indeed, as Gunn notes, 'the theory of psychohistory was for Asimov a way to make Hitler's persistent victories bearable': no matter how cruel or senseless events may appear, 'reason had to eventually prove its supremacy'.[97] Yet reason alone is not enough to guarantee human happiness or survival—indeed, the 'final solution' undertaken by the Nazis, as Davies argues, sounded a death knell for a certain form of rationalist humanism since, unlike the carnage of the First World War, it was not possible to view the systematic, structured and ultra-rational operation of the Holocaust as 'the result … of some inexplicable descent into irrational, atavistic barbarity'.[98]

Such reason must also be tempered by a universalising sense of human identity and compassion. Whereas the ideological project of the Nazis rested upon a myth of biological nationalism underpinned by a cognitive framework derived from social Darwinist eugenics, Asimov's rationalism is universalist in its scope, and benevolent in its operations. For him, not one particular nation or creed but all of humanity was to be subject to the paternalistic control of social institutions such as the Second Foundation—yet these were institutions whose management of society would be characterised by a sense of paternal stewardship rather than indifference or hatred. Indeed, the manner in which the Second Foundation eventually neutralises the threat of the Mule is indicative of Asimov's emphasis on the need for compassion in the management of social progress: the Mule is not punished, but psychologically manipulated so as to simply forget his plans for galactic domination, after which he returns to his home planet 'a far happier man'.[99]

It is extremely important, then, to distinguish Asimov's biopolitical systems in his *Foundation* works from those implemented by the fascist systems emerging in Europe in the lead-up to the Second World War. Asimov's *Foundation* can be read as the inverse of the biopolitical regime of National Socialism: it is all-encompassing, rather than exclusive, in its outlook on the entire human species (although, as noted above, and in line with most of the SF from the period, in practice overwhelming focussed on white males), and marked by universal

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[97] Gunn, p. 46
[98] Davies, p. 51
[99] Asimov, *SF*, p. 69

benevolence rather than racist parochialism. The Seldon Plan demonstrates a form of *paternal* biopolitics, one which, though anti-humanist in its characterisation of the human as a mechanistic being subject to anonymous manipulation by social forces, nevertheless preserves a conception of human progress that is universal in its application. The Second Foundation figures as the symbol of this paternalism: in conversation with one of his 'Students', the 'First Speaker' of the Second Foundation states that, in the face of 'accidents, unforeseen and individual … *we* [the Second Foundation] will exist', as a result of which 'the huge Galaxy … was now safe forever'.[100] For Asimov, it was necessary for the individual to be protected from the potential violence of social, political, and technological authority. It may also be necessary to relinquish human agency in the service of ensuring continued biological survival—but for Asimov, in the context of the persecution and suffering that marked the 1930s and early 1940s, this was perhaps a price worth paying. Indeed, M. Keith Booker points out the significance in the fact that the two benign institutions—the First and Second Foundations—depicted in the novel respectively command 'precisely the technologies about which Americans in the 1950s were most anxious: atomic power and mind control', thus reassuring readers that 'we have nothing to fear from science'—provided that it is in the right hands.[101]

Asimov's view of humanity, then, is characterised by a technocratic yet compassionate imperial regime in which individual human agency is subordinated to the will of totalitarian yet virtuous institutions. The goal, as ever, is human progress, but a very different kind of progress to that evident in the pulp SF of the previous decade. Where those earlier texts are concerned, not with social or political developments, but with the self-actualisation of heroic individuals, Asimov's *Foundation* instead emphasises the progressive development of a mass social body—a shift of emphasis from individual to social survival that is perhaps best explained by reference to the new horrors of warfare and genocide with which the world was trying to come to terms in this period.

Ontological humility and the body as metaphor in Clarke's *The City and the Stars*

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[100] Asimov, *SF*, p. 184, 187, italics in original
[101] M. Keith Booker, *Monsters, Mushroom Clouds, and the Cold War: American science fiction and the roots of postmodernism, 1946-1964*, Greenwood Press, 2001, p. 38

In this next section, we move on to Clarke, a writer who, as Edward James notes, was one of a small number of British writers active in the field of American SF by the end of the 1950s.[102] Although some attempts had been made to establish a magazine SF tradition in Britain, such publications were still largely American affairs. C.S. Lewis, following the publication of his *Space Trilogy* (1938-1945), had turned largely to fantasy, and, like Stapledon, was sceptical of the value of American magazine SF, at least in its earlier incarnations.[103] The other major British writers of this period were Eric Frank Russell, who appeared regularly in the US magazines throughout the 1940s and 1950s, and John Wyndham, who, as James argues, is more properly read in dialogue with Wells than with the SF magazines to which he occasionally contributed.[104]

Clarke is, in certain ways, a difficult SF writer to classify. Much of his fiction—such as the early trilogy of novels comprising *Prelude to Space* (1951), *The Sands of Mars* (1951) and *Islands in the Sky* (1952)—demonstrates a clear fondness for hard SF themes, expounding at length, and with obvious affection and knowledge, on a host of scientific and technological themes. Clarke was a mostly self-educated expert in numerous fields of scientific inquiry, and a key member in the 1930s and 1940s of the British Interplanetary Society, an organisation whose time was largely spent attempting to convince a sceptical public about the usefulness of rockets and the viability of landing a man on the moon. Throughout his long career, Clarke published non-fiction articles and works on a wide variety of scientific topics, to the point where, like Asimov, his non-fiction output exceeds that of his fiction.

This interest in the hard facts of science was at least partially fuelled by an early familiarity with SF writing. As a young boy, Clarke had read the works of Verne and Wells—the 'great masters', as he later described them[105]—and had encountered his first SF pulp

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[102] Edward James, *Science Fiction in the Twentieth Century*, Oxford University Press, 1994, pp. 58-59

[103] See C.S. Lewis, 'On Science Fiction', *From Narnia to Space Odyssey: the war of ideas between Arthur C. Clarke and C.S. Lewis*, edited by Ryder W. Miller, ibooks, inc., 2003, pp. 70-81

[104] See James, pp. 59-61

[105] Quoted in Neil McAleer, *Odyssey: the authorised biography of Arthur C. Clarke*, Gollancz, 1993, p. 179

magazine, a 1928 copy of Gernsback's *Amazing Stories*, at the age of eleven. Within eleven more years, he had amassed a sprawling collection, including every copy of *Astounding* printed up to that point. Through his familiarity with *Astounding*, *Amazing Stories*, and the other SF pulps, Clarke became well-versed in, as he writes, 'all the clichés of pulp science fiction'.[106] In his own work, these clichés are tempered with the more complex narratives typical of Golden Age SF, as well as a careful adherence to scientific realism. Although his tales do not go quite so far as to become Gernsbackian 'tales of instruction', his fidelity to the accepted paradigms of scientific thought is evident throughout his science-fictional *oeuvre*: from the careful incorporation of time dilation into the Overlord's light-speed journeys in *Childhood's End* (1953), through the detailed technical descriptions of the 'Orbital Tower' in *The Fountains of Paradise* (1979), all the way up to the attempt, in *The Songs of Distant Earth* (1986), to 'create a wholly *realistic* piece of fiction on the interstellar theme' to counterbalance the more fantastical treatments emerging from Hollywood at the time.[107] Indeed the 'Author's Note' to this latter novel might be said to sum up Clarke's lifelong attitude to writing SF: this work, alongside all his others, largely contains 'nothing … which defies or denies known principles'.[108]

Although Clarke dates his 'initiation to the genre' of SF to the early pulps that made their way across the Atlantic, he was also influenced by the science-fictional works that had appeared in Britain in the late nineteenth and early twentieth centuries.[109] The British tradition of scientific romance, as discussed in the last chapter, tended towards a more metaphysical outlook on notions of human progress than their US counterparts, as evident in the works of such writers as Wells, George Allen England, E.V. Odle, and C.S. Lewis (with whom Clarke had a brief correspondence).[110] In his autobiography, *Astounding Days*, Clarke pays respect to Wells as the innovator of several of the key ideas of SF, and also served for a time as vice-

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[106] Arthur C. Clarke, *Astounding Days: the science fictional autobiography* [henceforth *AD*], Gollancz, 1989, p. 23
[107] Arthur C. Clarke, *The Songs of Distant Earth* [henceforth *SDE*], Grafton Books, 1986, p. xiv
[108] Clarke, *SDE*, p. xiv
[109] Clarke, *AD*, p. 11
[110] For an account of this correspondence, see Miller.

president of the H.G. Wells Society.[111] Of greater importance in influencing Clarke's writings, however, was Olaf Stapledon. The influence of Stapledon on Clarke has been well-noted: Neil McAleer, for example, notes a clear Stapledonian influence on several of Clarke's early works, and indeed Clarke himself describes the profound effect that Stapledon's *Last and First Men* had on his young mind, writing that 'No book before or since ever had such an impact on [his] imagination'.[112] We will return to Stapledon's influence on Clarke in more detail later in this discussion.

It can be seen, then, that Clarke is essentially a product of two distinct traditions. Although steeped in the 'technoporn', to borrow his own term, of the US pulps—tales of spaceships, gadgetry, bizarre aliens, and masculine adventure—he was equally influenced by the more sceptical and circumspect texts emerging from the British speculative tradition.[113] Even his earliest works—stories such as 'Rescue Party' (1946), in which a group of aliens explore the dying Earth only to discover that humanity has already departed, or 'The Sentinel' (1951), in which a lunar explorer discovers a beacon on the Moon deposited by a race of aliens in the distant past—demonstrate the sort of philosophical tone, expansive spatial and temporal frameworks, and recurrent focus on the theme of human pathos in the face of unknowable universal forces familiar from the works of Wells and Stapledon. It is as a result of these highly varied influences that Clarke's works seem so effectively to straddle the divide between scientific positivism on the one hand and ontological or epistemological scepticism on the other—clearly gesturing towards the possibility for bold and expansive human enterprise, yet also postulating the existence of worlds, entities, and realities that lie, perhaps forever, beyond the horizons of human understanding.

The twinned influence of these two traditions is evident in Clarke's *The City and the Stars*, a novel set on a barren Earth in the distant future. Following a supposed conflict with a mythical alien race called the 'Invaders', the megacity of Diaspar seals itself off from the rest of the planet, remaining in isolation for one billion years and becoming, or so its citizens believe,

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[111] Clarke, *AD*, pp. 28-30
[112] Qtd. in McAleer, p. 21
[113] Clarke, *AD*, p. 99

the last civilisation on Earth. The novel follows the adventures of Alvin, a rebellious youth from Diaspar who is unaffected by the agoraphobia that afflicts his fellow citizens. Alvin escapes from the city and unexpectedly encounters another earthly society, the pastoral utopia of 'Lys', whose citizens are telepathic. The ramifications of Alvin's discovery slowly reawaken Diaspar to humanity's role in the history of the universe. It is eventually learned that, during the years of the 'Galactic Empire' in the ancient past, human technological experimentation had led to the creation of a malevolent disembodied intelligence, the 'Mad Mind', which wreaked untold havoc throughout the galaxy before being finally stopped. Soon after this, the citizens of the galaxy made contact with a powerful race of unknown beings located, it is suggested, at the far end of the universe. While most races of the galaxy set out to locate these beings, earthly humanity instead returned to their home planet, separating into the two societies of Diaspar and Lys and fashioning the myth of the 'Invaders' as a way of subduing the human impulse towards technological progression and galactic exploration. With this myth thus dispelled, and human curiosity reawakened as a result, the novel ends with Diaspar and Lys joining forces to undertake the regeneration of Earth and the resumption of interstellar travel.

For Tom Moylan, *The City and the Stars*, appearing as it did in the early years of the Cold War, must be understood predominantly as a thematic response to that particular conflict. Indeed, Cold War themes recur in several of Clarke's other works from the 1950s. They are evident, for example, in *Childhood's End*, one of Clarke's other most highly regarded works, which depicts the apparent 'end of history' as a race of paternal aliens known as the 'Overlords' assume stewardship over the earth in preparation for humanity's next evolutionary leap. *Childhood's End* begins with a brief segment featuring two engineers and former World War Two comrades, the American Reinhold and Russian Konrad, whose opposing efforts to put a rocket in space in the name of their respective nations embodies 'the cleavage between East and West'.[114] This preoccupation is also evident in *The City and the Stars*, in which, as Moylan argues, the division between Diaspar and Lys—between a technologically advanced but spiritually void city and a utopian network of self-reliant, pastoral villages—is symbolic of that

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[114] Arthur C. Clarke, *Childhood's End* [henceforth *CE*], 1953, London, 1970, p. 6

between a spiritually exhausted capitalist materialism and the reinvigorating simplicity of a rustic communist system.[115] Hence, Moylan argues, where 'Diaspar is a flawed utopia, Lys is a perfectly realized one … a medieval pastoral utopia' which, though 'it must be surpassed by the return to empire', also denotes 'the negation of the returning capitalist empire'—that is, the nullification of the destructive or alienating tendencies of capitalism by way of the mediating influence of pastoral communism.[116] For Moylan, in other words, Clarke in *The City and the Stars* is seeking 'the benefits of communism without having to pay the historical price of struggle and revolution', or without sacrificing 'capitalist, "free-world" hegemony', through his utopian depiction of the union of Lys and Diaspar at the novel's conclusion.[117]

Yet Clarke himself takes issue with such politico-economic readings of his novel. Responding directly to Moylan's assessment, he points to both his own notebooks, which date the inception of the novel in the mid-1930s, and to the 1968 preface to *Against the Fall of Night*, the 1948 novella later expanded as *The City and the Stars*, as evidence countering such an interpretation.[118] In the preface, Clarke identifies his own 'transplantation from the country … to the city'—from his native Somerset to London, where he took up a post with the British Civil Service in 1936—and 'the conflict between a pastoral and an urban way of life' as the original inspiration for the story.[119] Certainly, several features of *The City and the Stars* seem to demonstrate a longing for a lost connection to nature—what Raymond Williams terms 'a myth functioning as memory', a nostalgic longing for a past 'Golden Age' of 'peace, innocence, and simple virtue' lost to Clarke in the busy metropolis of London.[120]

This preoccupation can be clearly seen in the opposition between urban Diaspar and rural Lys. Like the 'World State' of Huxley's *Brave New World*, Diaspar is conceived as a post-historical civilisation characterised by technological alienation and the loss of genuine

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[115] See Tom Moylan, 'Ideological Contradiction in Clarke's *The City and the Stars*', *Science Fiction Studies*, vol. 4, no .2, 1977, p. 154
[116] Moylan, p. 154
[117] Moylan, p. 154
[118] Arthur C. Clarke, 'On Moylan on *The City and the Stars*', *Science Fiction Studies*, vol. 5, no.1, 1978, pp. 88-90
[119] Arthur C. Clarke, 'Introduction', *The Lion of Comarre and Against the Fall of Night*, 1968, Corgi Books, 1975, par. 4
[120] Raymond Williams, *The Country and the City*, Oxford University Press, 1975, p. 43, 1

human contact. The whole of Diaspar is figured as a unitary technological system: an eternal and inert 'artificial womb' which comprises 'a universe itself', monitored and preserved by an omniscient 'Central Computer' that maintains the material condition of the city in a state of perfection. [121] Like the technology of the World State, the machinery of Diaspar has transformed the ontological condition of its citizens, who as a result have become more technological than biological—and, correspondingly, less human. The inhabitants of Diaspar, for example, have left behind the 'complex and apparently uncontrollable process' of natural birth.[122] The information required to bring any individual into being is instead simply saved in the records of the Central Computer, while births are conducted by means of 'memory units [and] matter organisers'.[123] Through such techniques, the inhabitants of Diaspar have become effectively immortal: by disconnecting consciousness from its corporeal form and thereby overcoming the limitations of transient embodiment, they have remade themselves as post-historical and post-biological beings, free from ideological dissent and abstracted from the material realities of their environment. The result, however, is that the countless lives of each person lack 'real emotions … deep passions', with even an individual's parents being merely 'assigned' to provide material care.[124]

In contrast to the technological ontology of the citizens of Diaspar, the inhabitants of Lys, by rejecting advanced technology, have instead continued along a familiar track of human evolution, developing powers of telepathy 'once common to all man' but left dormant in Diaspar owing to its citizens' total dependency on machinery. The social structure of Lys is 'based largely on the direct use of [such] mental power', a common trope, as we have seen, in the SF of the mid-century. In the last chapter, I argued that telepathy was employed in pulp SF as an embodied metaphor for material transcendence and the expansion of human consciousness beyond the limits of the body. Clarke's works, however, lack the imperialist triumphalism of *Skylark*: in contrast with Smith's series, the telepathy of Lys must be understood less as a signifier of material transcendence than as a tool for facilitating more

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[121] Arthur C. Clarke, *The City and the Stars* [henceforth *CS*], Gollancz, 2001, p. 16, 9
[122] Clarke, *CS*, p. 20
[123] Clarke, *CS*, p. 20
[124] Clarke, *CS*, p. 152

immediate and profound modes of human inter-communion—as Moylan argues, it provides 'one more way to overcome individual isolation'.[125] Whereas the technical achievements of Diaspar have led to the atomisation of its citizens within isolated living quarters—near the beginning of the novel, Alvin laments that, 'In a city of ten million inhabitants … there was no one to whom he could really talk'—the need in Lys for social co-operation in the production of material necessities has made 'mutual understanding … the very basis of their lives'.[126] Mental communion thus facilitates the development of 'love based on absolute unselfishness', free from the possibility of 'false impressions'.[127] Telepathy in Lys, in other words, functions not as an expression of human intellectual mastery over matter, but rather as the enabling condition for a more penetrating mode of interpersonal union, underpinned by and conflated with a nostalgic vision of a 'Golden Age' of pre-technological rurality.

Lys, then, is clearly intended to function as a foil to the technological alienation and sterile urbanity experienced in Diaspar, with this latter representing a mode of being that has departed radically from 'natural' forms of human life. This allegorical role is emphasised by the imagery employed to describe Lys, which highlights the simplicity and wholesomeness of the pastoral life. The village buildings, for example, are described as being of 'clean, straight-forward design', the inhabitants move with 'unconscious grace', clothed in a 'single sheet draped around the body', and the air around them hums with 'unknown, throbbing life'.[128] Clarke clearly makes no bones about which of the two categories—the technological and the biological—offers the most appropriate basis for human ontology: as Alvin examines a fish in a lake outside Lys, he realises that 'Evolution and science had come to the same answers; and the work of Nature had lasted longer'.[129] Clarke's ambiguous stance on technological advancement, coupled with his affirmative depictions of pastoralism in rural Lys, thus suggest a normative reading of these opposing societies. The structural contrast between the sterile technopolis of Diaspar and the georgic communes of Lys can be interpreted as an opposition

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[125] Moylan, p. 154
[126] Clarke, *CS*, p. 14, 110
[127] Clarke, *CS*, p. 110, 109
[128] Clarke, *CS*, pp. 90-91
[129] Clarke, *CS*, p. 90

between a dehumanising and spiritually void urban technocracy and a revitalising rural pastoralism.

The first major thematic opposition in *The City and the Stars* thus seems to be that between the two major utopian modes of SF up to this point. On the one side, there is technocracy, realised within the 'New Jerusalem' (to borrow Samuel Delany's terminology), the 'technological super-city', of Diaspar, and on the other there is pastoralism, realised in the 'Arcadia' of Lys.[130] At the same time, however, the novel also takes in a broader perspective which concerns not only the interactions between these two societies but also their unified place within a grander cosmological order—the 'stars' of the title against which they are contrasted. Indeed, much of the narrative impetus in *The City and the Stars* derives from the ambiguity surrounding Diaspar's origins and the role played by humanity in the wider galaxy in the far distant past, an enigma that eventually takes Alvin, in a plundered spaceship, to the centre of the galaxy itself. As we saw in the last chapter, interstellar space figures in much SF as a metaphor for a number of humanist concerns, in particular imperial conquest and technological transcendence. In the case of Clarke's novel, however, as we will now see, this broader perspective, and the central role played by extra-terrestrial space within the novel, shifts the thematic focus of the novel away from a simple conflict between rural and urban modes of life towards a more metaphysical concern for humanity's future within a wider cosmic order.

For the citizens of Diaspar and Lys, the 'stars' denote the terror of the Invaders, the mysterious beings whose apocryphal destruction of terrestrial civilisation one billion years earlier spurred the enduring quarantine of Diaspar. Towards the end of the novel, it is revealed that the Invaders are mere legend, a defensive myth created to ensure the continued isolation of the city and thereby suppress the memory of the real destroyer of ancient galactic society— the 'Mad Mind', a disembodied being created as a result of human experimentation into the limits of their technological capacities. Given that the Mad Mind is eventually exposed as a product of human innovation, it is possible to interpret the real peril of the novel as situated within human technological progress itself—specifically the capacity of such progress to

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[130] Samuel R. Delany and R.M.P., 'On *Triton* and Other Matters: an interview with Samuel R. Delany', *Science Fiction Studies*, vol. 17, no. 3, 1990, p. 303

unwittingly bring about the circumstances of humanity's downfall. The context of the Cold War, and the shadow of atomic apocalypse looming large over the western cultural imagination, suggests the metaphorical register in which the figure of the 'Mad Mind' should be read: it functions as a symbol for the atomic bomb, with the downfall of the 'Galactic Empire' signifying the human self-immolation that, in Boyer's view, became an increasingly plausible outcome of the 'nightmare of an atomic arms race'.[131] Indeed, as Clarke later wrote, after the deployment of atomic weapons in 1945 'two of the main themes of science fiction—space travel, and the ultimate weapon—ceased to be playthings of the mind', but had instead become 'realities: perhaps … waking nightmares'.[132] As a result, 'science fiction writers had … lost their innocence'—the 'realities' of the post-atomic age 'would be reflected in all their work, whether they intended it or not'.[133] In the foreword to a 2000 edition of his collected short stories, Clarke's forebodings regarding human technological self-destruction go even further than this: 'The dinosaurs disappeared because they could not adapt to their changing environment. We shall disappear if we cannot adapt to an environment that now contains spaceships, computers—and thermonuclear weapons'.[134]

These comments inform the ambiguous stance on technological and civilisational progress evident in *The City and the Stars*. As Moylan notes, the novel demonstrates a commitment to imperial exploration, with the technological hegemony of the US underpinning a 'renewal of the American frontier myth to carry on the white man's burden and establish a new empire, first in the solar system and then the entire galaxy'.[135] At the same time, however, Clarke demonstrates a highly guarded outlook on technological progress: the 'Mad Mind', the *telos* of technological civilisation, whose formation constituted 'the greatest sustained effort in all history', signifies at once the apex and the fatal subversion of human progress, as the 'dream' of human mastery of natural forces is quickly converted into 'a disaster that almost wrecked

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[131] Boyer, p. 126
[132] Clarke, *AD*, p. 197
[133] Clarke, *AD*, p. 197
[134] Arthur C. Clarke, *The Collected Stories*, Gollancz, 2000, p. x
[135] Moylan, p. 152

the Galaxy'.[136] The influence of the British tradition of scientific scepticism can be clearly felt here, magnified by the exponential increase in human destructive capabilities made possible in the post-war period by nuclear weapons. Technology developed for its own sake, it is suggested, has the nasty habit of turning on its creator, and so any deployment of atomic capabilities must be underwritten by a sound moral and social sensibility. Taken in this light, the pessimistic conception of technological development outlined in *The City and the Stars* appears to follow the pattern laid down by Carl Sagan and L.S. Shklovskii in their famous work, *Intelligent Life in the Universe* (1966)—a work, incidentally, that Clarke read and praised[137]—specifically their comments regarding the fate with which all 'technical civilizations' are eventually confronted: that such civilisations, as their technical capabilities increase, face the increasing possibility of 'self-destruction'.[138]

Clearly, then, the figure of the 'Mad Mind' in this novel is inspired by fears about the atomic bomb, which problematised progressivist views of human history as tending towards constant growth and ascendancy. Like Verne and Conan Doyle, Clarke incorporates cyclical historical frameworks into his novel, evident in the cycles of galactic imperial collapse and renewal, or of life and death in Diaspar. Yet this incorporation reflects not (as in the former two writers) a level of bourgeois humanist conceit, but rather comprises an attempt to salvage the whole notion of human social progress by refashioning it in terms of cycles of progress and decadence. The germ of this impulse is to be found in the historical shape of the twentieth century, which, as Alan Bullock notes, had dramatically demonstrated such a tendency towards periodic collapse and regeneration, with the emphasis heavily on the former term:

> For a short period from 1924 through 1928, it seemed possible that the cycle of violence and repression which had lasted from 1914 to the end of 1923 might be broken. It was not. The cycle began again with the Great Depression; Stalin's second Russian Revolution (the collectivization of agriculture and the purges); Hitler's rise to power, and the outbreak of the Second World War in 1939. At the end of that war there was no

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[136] Clarke, *CS*, p. 239
[137] For Clarke's commendation of the work, see *SDE*, p. xv
[138] Carl Sagan and L.S. Shklovskii, *Intelligent Life in the Universe*, Holden-Day Inc., 1966, p. 358

remission: the division of Europe, the Cold War and the threat of a third nuclear war followed straight on.[139]

Clarke's own direct experience of such events was minimal: 'If I had planned it deliberately', he later wrote, 'I could not have done a better job of avoiding World War II; at its most, it was never more than a background inconvenience'.[140] Nevertheless, it is difficult not to read into the cyclical timeframes of *The City and the Stars* a desire to incorporate, and thereby neutralise, the violent failures of western humanity into a grander historical framework characterised by an inexorable cycle of civilisational ascent and descent.

At the same time, Clarke makes clear that the appropriate response to the violence of the mid-century period of post-war nuclear consolidation—the historical moment at which technological suicide becomes a material possibility for the human race—is not to backpedal from the possibilities opened up by scientific research, but rather to infuse technological imperial expansion with an enhanced sense of critical and moral awareness. It is to this end that Clarke instigates the utopian union of Lys and Diaspar in *The City and the Stars*. Diaspar's shortcomings as a mode of human civilisation lay in the fact that, 'when power and ambition and curiosity were satisfied, there still were left the longings of the heart'.[141] The role of Lys is to infuse 'warmth and understanding' into the technological might of Diaspar, thereby guiding humanity towards a more organic relationship with 'his world'.[142] The key, as Clarke writes in *Imperial Earth* (1975), is to recognise that nature 'was not designed for the convenience of Man, and that presumptuous creature's attempt to use it for his own advantage would often be foiled by laws beyond his control'.[143] Far from the Enlightenment ideal of a 'human empire' over nature, then, Clarke implicitly recognises human vulnerability to the destructive capacities of both natural law and technological progress.

Indeed, in *The City and the Stars*, Clarke goes even further in his subversion of the Enlightenment scientific narrative, questioning the very limits of human epistemology at the

[139] Alan Bullock, *The Humanist Tradition in the West*, W.W. Norton & Company, 1985, p. 176
[140] Clarke, *AD*, p. 187
[141] Clarke, *CS*, pp. 250-251
[142] Clarke, *CS*, pp. 252
[143] Arthur C. Clarke, *Imperial Earth* [henceforth *IE*], 1975, Pan Books, 1977, p. 86

level of the body itself. It is impossible, he writes, for any one race—including the human race—ever to obtain a 'true picture of the Universe', since 'a race's world-picture depended on its physical body and the sense organs with which it was equipped'.[144] Clarke here rejects the possibility of scientific empiricism ever operating as an epistemological path to 'true' knowledge: the human mind, he argues, is a 'by-product of an immensely intricate arrangement of brain cells', material entities which limit the human capacity to gather objective information regarding the external world. This characterisation of human subjectivity as contingent upon its material basis prefigures the conception of autopoietic subjectivity later characteristic of posthumanist thought. In the terms used by Maturana and Verala, the mind 'does not "pick up information" from the environment …. On the contrary, it brings forth a world' on the basis of the capacities of its biological sensorium.[145] In other words, as Clarke writes, 'the eye had to be educated before it could pass intelligible impressions to the brain'.[146] Human knowledge, for Clarke, will always have this quality of partiality or contingency—incapable of ever realising the imperial dominion over nature championed by the thinkers of the Enlightenment.

This quality of Clarke's fiction—its emphasis on the necessary partiality of human knowledge—is evident in many of his works, often taking the form of an encounter between humanity and some inhuman *thing*—be it an entity, being, concept, or otherwise—that cannot be accounted for within the parameters of human knowledge. It can be seen, for example, in *Childhood's End* in the figure of the 'Overmind', a powerful and enigmatic being that instigates a process of evolutionary transcendence among the children of Earth, destroying the planet— and the last remnants of terrestrial humanity—in the process. It is evident again in *2001: A Space Odyssey* (1968), in which astronaut David Bowman, led by a beacon deposited on Iapetus (a moon of Saturn) by an unknown race of beings, enters a spatio-temporal wormhole that takes him to unknown regions of the galaxy before being inexplicably transformed into a powerful immortal being, the 'Star-Child'. And it can be detected again in *Rendezvous with Rama* (1974), in which a huge alien cylinder passes through the solar system, resisting all

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[144] Clarke, *CS*, 239

[145] Quoted in Cary Wolfe, *Animal Rites: American culture, the discourse of species, and posthumanist theory*, University of Chicago Press, 2003, p. 82

[146] Clarke, *IE*, p. 107

human attempts to comprehend its origin or function before disappearing again into interstellar space. In these examples, Clarke's works generate a clear tension between the 'known unknowns', to borrow a famous phrase, of human empirical and rational knowledge on one side, and on the other the 'unknown unknowns' of the wider universe—those sudden encounters with some element of the universe located outside the boundaries of human epistemology.

So it may be seen that Clarke rejects any notion of unquestioned human authority over nature. The utopian union between the two societies of *The City and the Stars* suggests the need to temper technocratic hegemony with an organic humanism that emphasises the value of human intersubjective communion and the independence of nature, and prioritises the social and moral use-value of technological artefacts. The incorporation of interstellar space, meanwhile, in contrast to the technocratic triumphalism of earlier pulp fiction, functions instead to recontextualise human evolution within an expansive universal framework within which humanity, far from being the pinnacle of evolution, is instead figured as merely one of a multitude of—often radically more advanced—races and beings. Clarke's humanism is thus permeated by a sense of ontological humility—a tendency towards human self-deprecation when confronted with the expanses and mysteries of the cosmos. As he writes in *Childhood's End*, 'The stars are not for Man'.[147]

Yet, at the same time, Clarke's works also consistently employ certain metaphysical or mystical themes which have the effect of imbuing his understanding of the terms 'Man' or 'Humanity' with more transcendental meaning. *Childhood's End*, for example, though it ends with an image of the destruction of most of terrestrial humanity, also depicts the children of humanity undergoing a form of transcendental evolution that takes them *beyond* matter: '*they're* [the children] on their way at last, to become part of the Overmind. Their probation is ended: they're leaving the last remnants of matter behind'.[148] Here, the children of Earth undergo a sublime evolutionary culmination, a process of material disembodiment that leaves

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[147] Clarke, *CE*, p. 184
[148] Clarke, *CE*, p. 186, emphasis in original

Jan—the last remaining biological human, who witnesses the transcendence—with a 'sense of fulfilment, achievement'.[149]

In *the City and the Stars*, too, there is a distinction that must be made between humanity in its material and immaterial modes: while Alvin recognises that the citizens of Diaspar and Lys 'aren't ready to go out to the stars', nevertheless the novel ends with an air of optimistic conviction regarding the future of 'Man': '*along the path he once had followed, Man would one day go again*'.[150] The 'path' referred to here is that of the 'Galactic Empire', a collective product of 'Man' and '*the thousand other races*' of the galaxy.[151] This inconsistency between the sense of ontological humility in the face of human epistemological limitations identified above and a progressive optimism regarding humanity's capacities for complete evolutionary fulfilment, can perhaps be better clarified by the inclusion of an additional word in the passage from *Childhood's End* above: 'The stars are not *only* for Man'. Or, in other words, 'Man' must be understood to refer not merely to a collection of biological beings, but also to a set of abstract qualities that set 'Man'—in whatever biological guise it adopts—in opposition to the rest of nature.

We have encountered such a division between humans as *material* beings and, in contrast, humanity as a set of abstract qualities in the works of Smith and the other early pulp writers—yet this concept also has a rich heritage in British philosophical thought. It stretches back to Arnold, Huxley, and Spencer in the nineteenth century, each of whom stressed the 'higher' qualities of the spirit—'those gifts of thought and feeling', as Arnold put it—that distinguish humanity from the rest of nature.[152] A more direct influence on Clarke in this regard may be found in Stapledon, for whom the evolution of humanity was primarily conceived as a process of spiritual growth. Like Smith and the other early pulp writers, Stapledon abstracted the concept of 'human' from its specific biological basis, instead conceiving of humanity as a set of 'higher' intellectual qualities that may be realised in a diverse range of biological sensoria.

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[149] Clarke, *CE*, p. 187
[150] Clarke, *CS*, p. 252, 255, emphasis in original
[151] Clarke, *CS*, p. 242, emphasis in original
[152] See Maurice Mandelbaum, *History, Man, & Reason: a study in nineteenth-century thought*, 1971, The John Hopkins Press, 1974, p. 203

Hence, for example, the narrative of *Star Maker* (1937) essentially tracks an ever-more-expansive abstraction of this intellectual 'spirit' from its basis in actual material entities. Beginning with a single human individual who finds himself suddenly and inexplicably disembodied, the novel depicts the gradual merger of this individual with a number of other floating consciousnesses throughout space, converging towards a group consciousness made up of an ever-larger number of sentient entities (including, eventually, the stars and galaxies themselves, revealed to be sentient beings), and resulting in a final 'cosmical mind' comprising the shared consciousness of all thinking beings in the universe. This mind then encounters the 'Star Maker', an impartial deity who undercuts the grandiosity of the 'cosmical mind' by treating the universe it has created as simply another experiment in world-building. (The influence of this novel on many features of Clarke's works—the 'Overmind' of *Childhood's End*, for example, or the 'Star-Child' of *2001*—is clear here.) *Star Maker* thus expresses both a radical anti-humanism—humanity, it is suggested, is by no means the apex of all creation—*and* a radical humanism: humanity, unlike the rest of terrestrial nature, contains within itself the germs of the 'cosmical mind', and so are participants in a universal process of (to borrow a phrase from Mandelbaum) 'spiritual Evolutionism'.[153]

In a lecture delivered (at Clarke's invitation) to the British Interplanetary Society in 1948, Stapledon is even more explicit on this point. The individual human, Stapledon remarks, 'is very small, an inconceivably minute parasite on a minute planetary grain floating in an immense void'.[154] What separates humanity from 'the sub-human creatures', however, is 'the power of abstraction, of attending to a particular character and relating it to other instances of the same character, and giving the identity a name, such as "red," "two," [or] "pleasant"'.[155] This we may recognise as a manifestation of the Heideggerian 'enframing' mindset—the impulse to structure the perceived world according to human systems of cognition that characterise the technological mentality. The highest form of such abstraction, for Stapledon,

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[153] Mandelbaum, p. 223
[154] Olaf Stapledon, 'Interplanetary Man' [henceforth 'IM'], *Journal of the British Interplanetary Society*, vol. 7, no. 6, 1948, p. 223, web, *Internet Archive*, archive.org/details/OlafStapledonInterplanetaryMan, accessed August 2017
[155] Stapledon, 'IM', p. 224

is that of 'the spirit, the ideal way of life … which is implied in, and emerges from, the actual experienced nature of personal beings'.[156] This 'spirit', Stapledon argues, 'is essentially the way of life in which we strive towards full, comprehensive, and true awareness of the objective universe', and is furthermore underpinned by 'the distinctly human social relationship, in which individuals are united in mutual respect for each other *as persons*'.[157] In other words, Stapledon imagines the spirit as an expression of the 'higher' human values, abstracted from the lived experience of interpersonal communion and fellowship. From here, it is a short step to imagining a 'cosmical community of worlds' throughout the galaxy, united in such spiritual communion and striving towards 'the final result of the cosmical process': 'the complete awakening of consciousness in the cosmos', which comprises the *telos* of Stapledon's spiritual evolutionism.[158]

The dialectic between the social and the individual that underpins Stapledon's vision of cosmic transcendence here can be clearly detected in Clarke's work. On the level of the individual, *The City and the Stars* reaffirms the central role of the material body in ontologies of the human, a quality that can be seen in the opposing depictions of Diaspar and Lys. The city of Diaspar can be read as an illustration of what Rosi Braidotti calls 'the trans-humanist fantasy of escape from the finite materiality of the enfleshed self'.[159] The citizens of Diaspar flit from body to body, their intellectual beings immortalised in electronic form within the memory banks of the Central Computer. In Diaspar, in other words, the body has become little more than a convenient ampule, a temporary resting place for the artificially immortal consciousness. It is precisely this consciousness that provides continuity to the 'human', while the material form remains in constant flux. However, the price paid for technological empowerment is social atomisation: the body is not merely a resting place for the mind, but also a site of intergenerational connection. Hence, although each person is free 'to shape his own amusements and his own life', Alvin reflects that 'he would give all his achievements if

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[156] Stapledon, 'IM', p. 227
[157] Stapledon, 'IM', pp. 227-228
[158] Stapledon, 'IM', p. 231
[159] Rosi Braidotti, *The Posthuman*, Polity Press, 2013, p. 91

he could hear the cry of a new-born child, and know that it was his own'.[160] The citizens of Lys, conversely, embrace embodiment: in posthumanist terms, they are 'embedded' within a network of familial and social relations, instances of inimitable spatio-temporal materiality. Here Alvin encounters old age, infancy, and the other visual and physical markers of the effects of time on the human body—yet he also recognises the value of 'the cycle of life and death', and particularly of progeny, which arouse in him 'a feeling he had never known before … tenderness'.[161] The decision at the end of the novel, in the union of these societies, to shut down the memory banks of Diaspar thus reaffirms the central role of the transient, material body in individual and social fulfilment.

In addition to this, however, the human body functions in the novel not merely as a material instantiation of each human individual, but also as a symbolic reference point through which all other forms of life in the novel may be conceptualised. Consider, for example, the disembodied entities created by the ancient Galactic Empire: the Mad Mind, and also the childlike 'Vanamonde' encountered by Alvin during his journey to the centre of the galaxy. These beings exist in a post-material state: their 'brain[s]', Clarke writes, are comprised of 'components [that are] not material, but patterns embossed on space itself … completely free from the tyranny of matter'.[162] The disembodied intelligences are thus 'not located anywhere—perhaps not even *anywhen*'—yet their ontological condition is figuratively rendered using a comparison drawn from the human body: the intelligences, Clarke writes, are 'embossed' upon space much like the human mind is embossed upon 'an immensely intricate arrangement of brain cells'.[163] The same metaphor concerning the human body is employed in describing the 'Central Computer' of Diaspar, the 'all-but-infinite intellect' that makes up the administrative core of the city, and which 'possesses at least as much awareness and self-consciousness as a human being'.[164] The Central Computer, though 'not alive in a biological sense', nevertheless possesses a fully flexible consciousness, distributed throughout the network of computers and

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[160] Clarke, *CS*, p. 14, 251
[161] Clarke, *CS*, p. 250, 106
[162] Clarke, *CS*, p. 239
[163] Clarke, *CS*, p. 224, 239, emphasis in original
[164] Clarke, *CS*, p. 66

robots that populate Diaspar.[165] As Clarke writes, just as a 'brain was the sum of many billion separate cells, arrayed throughout a volume of space a few inches across, so the physical elements of the Central Computer [are] scattered through the length and breadth of Diaspar'.[166] And, finally, there is the 'protean polyp' encountered by Alvin in a lake as he travels through the lands outside Diaspar.[167] Consisting of 'a colony of independent creatures' operating as a single intelligence, the polyp is a cyclical creature, existing for a time as a single intelligent being before degenerating into its constituent parts—'tiny, greenish specks [no] larger than an inch across'.[168] In due course, the polyp will be 'reborn' as its constituent specks reassemble, acting under the influence of 'unknown forces that had never failed to do their duty in the past'.[169] The polyp, Clarke writes, is a victim of the 'tyranny' of material forces, tied forever to a single discrete location and helpless to resist its cyclical existence. Though it tries without success to 'force its dissolving body to obey its will', it nevertheless crumbles helplessly into the lake.[170] The polyp is perhaps as physically inhuman as a being can be—yet Clarke once again resorts to a human analogy to explain the workings of this peculiar entity: was the bizarre lifecycle of the polyp, though 'a strange and wonderful phenomenon … so much stranger than the organization of the human body, itself a vast colony of separate, living cells?'[171]

This recurrent recourse to the human body as a metaphor to describe the lifeworlds of inhuman entities—the intelligences, the computer, and the polyp—is highly suggestive: the use of this metaphor illuminates the dialectical relationship between individual and society that informs Clarke's works. The body, as Clarke's numerous examples above demonstrate, is what might be called a composite unity: a mass of individual units acting in unison towards the achievement of a shared goal. The same may be said about the social organism, which is viewed neither as a mere collection of atomised units nor a singular entity that transcends its individual parts. The social body, like the human body, is conceived as existing in dialectical accord with

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[165] Clarke, *CS*, p. 66
[166] Clarke, *CS*, p. 161
[167] Clarke, *CS*, p. 130
[168] Clarke, *CS*, p. 130, 138
[169] Clarke, *CS*, p. 138
[170] Clarke, *CS*, p. 138
[171] Clarke, *CS*, 138

the individual being—as in the example of Lys, individuals exist, not in tension, but in harmony with the social order, each directed towards a commonly shared goal. The deployment of the body as a metaphor to describe each of the inhuman beings described above indicates the metaphorical significance of the body in Clarke's thought: it is, we might say, the arch-metaphor that informs his conception of the ideal human society as an association of co-operating individuals whose self-realisation accords with the realisation of the mass social organism.

It is through the deployment of the body as arch-metaphor for society that we arrive at the figure of the supra-human as the culmination of human civilisation in Clarke's novel. The supra-human pervades Clarke's works: the polyp or Central Computer, for instance, exist as unitary consciousnesses comprised of millions of individual beings, an image that also invokes Stapledon's 'cosmic consciousness'. The Overmind of *Childhood's End*, too, is described as 'Potentially infinite, beyond mortality … absorbing race after race as it spread across the stars', in a process of civilisational culmination experienced by the absorbed races not as 'tragedy, but fulfilment'.[172] And the Star-Child of *2001*, though 'master of the world', is 'never … alone', but exists instead in constant communion with the beings that made it.[173] Clarke, then, turns away from the national, political or economic ideologies of the mid-century towards a post-ideological form of technological or scientific empowerment, evident in the figures of the Overmind, the Star-Child, or the 'Great Ones' of *The City and the Stars*. Yet it is a power infused with a humanist ethos: in the mode of Stapledonian 'personality-in-community', it is an organic form of technocratic rule, a humanist 'Empire' that derives its power not from the imposition of the human will *on* the cosmos, but from the transcendental merger of the human will *with* the cosmos—'human' here understood in both the material *and* immaterial senses outlined above. In this sense, we can see, the supra-human offers the ideal figure for Clarke's conception of the culmination of human evolution: as a sort of Stapledonian 'cosmic consciousness', an organic union of individual and society.

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[172] Clarke, *CE*, p. 178
[173] Arthur C. Clarke, *2001: A Space Odyssey*, 1968, Arrow Books, 1988, p. 224, 222

Conclusion

In the figure of the supra-human, then, SF writers of the mid-century found one way of resolving the conflict between the individual and mass society. In Asimov's *Foundation*, as we saw, the entire population of the galaxy becomes such an entity, guided along the course of human history by paternalistic and technocratic institutions. The agency of the individual human subject is sacrificed in the service of preserving human society as a whole—a necessary sacrifice, perhaps, in the wake of the fascistic biopolitical regimes that threatened to undermine *all* humanist values. In Clarke's *The City and the Stars*, conversely, the destiny of humanity lies in a conscious transcendence of materiality, leading to unification with a host of non-human entities in a Stapledonian 'cosmic consciousness'. Here the human is writ in large galactic terms as the body is deployed as a metaphor for the ideal form of society: a harmonious union between individual 'cell' and social 'body'.

In both cases, the supra-human provides one potential solution to the urgent need, as Braidotti puts it, to find 'new and alternative modes of political and ethical agency for our technologically mediated world'.[174] Yet, as with each of the modes of the human that we have examined so far, it does so in a way that attempts to recoup, rather than radically rethink, the traditional liberal humanist subject. Even an entity as radically non-human as Clarke's Overmind or Star Child can ultimately be read as an intensification, rather than a transcendence or transformation, of the precepts of liberal humanism. Both the biopolitical determinism of the Seldon Plan in *Foundation* and, in particular, the post-material consciousness of *The City and the Stars* must ultimately be placed on a spectrum between assimilative humanist and transformative posthumanist conceptions of the individual and society, neither fully one nor the other—or, more accurately, gesturing towards the latter while ultimately falling back on the former.

Nor did the Second World War mark the end of the troubled trajectory of the human in Anglo-American SF. As we will see in our final chapter, the ever-growing power of bureaucratic regimes, coupled with emerging concerns about the environmental future of the

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[174] Braidotti, p. 58

planet, gave rise to a whole host of hopes and fears centred on the human. Our final human figure is the 'post-human', with 'post' understood in the sense of both 'beyond'—and 'after'.

Chapter Four

Disaster and Redemption: Utopia, nature, and the post-human in J.G. Ballard's *The Crystal World* and Ursula K. Le Guin's *The Dispossessed*

> Oh my God. I'm back. I'm home. All the time, it was... We finally really did it. You maniacs! You blew it up! Ah, damn you! God damn you all to hell![1]

In the same year that Charlton Heston was lamenting the destruction of human civilisation in this famous ending to Franklin J. Schaffner's *Planet of the Apes* (1968), Stanley Kubrick was imagining a very different kind of 'post-human' in *2001: a space odyssey*. Where the former film depicts the literal demise of (one version of) humanity as a result of its own technological hubris, the latter instead offers an equivocal vision of seeming posthuman transcendence in the form of the ambiguous 'Star Child'. Nor were these the only post-humans to be found in Hollywood in 1968, a key year in the history of SF film: George A. Romero's *Night of the Living Dead* was released in the same year, and, like these others, hinted at a coming posthuman world, although this filmic apocalypse—with its African-American protagonist and guerrilla-style conflict between humans and newly revived 'ghouls'—owes more to the specific context of the Vietnam War and contemporary race relations in the United States than to the more general Cold War anxieties that fuel Schaffner's work.[2] *Night of the Living Dead*, too, offers a distinct vision of a posthuman future, one in which the presumed human epistemological mastery of the natural world fails in the light of the bizarre and inexplicable reanimation of the uncanny revenants.

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[1] *Planet of the Apes*, directed by Franklin J. Schaffner, performed by Charlton Heston, 20th Century Fox, 1968

[2] In addition to these more sombre cinematic works, 1968 also saw the release of what has since become the best-known SF-themed erotic comedy—Roger Vadim's *Barbarella*, starring Jane Fonda—which, like these others, since gone on to acquire a devoted fan base.

This figure of the 'post-human', widespread within the SF movies emerging from Hollywood in the 1960s, will be the subject of this concluding chapter. The SF of this period engages with a number of familiar sociocultural concerns: the prevalence of rationalistic bureaucratic structures within western society, and the resulting massification and anonymisation of human populations; the subversion of human agency and individuality by pervasive consumerism; the explosion of hyperreal media and advertising images that undermined the distinction between 'real' and 'unreal'; and the accelerated rate of sociocultural and technological change that undermined the individual's capacity to cognitively adapt to their social environment. The archetype of the post-human functions within such a context in two distinct and opposed ways, which will be respectively examined in our two primary works from the period: J.G. Ballard's *The Crystal World* (1966) and Ursula K. Le Guin's *The Dispossessed* (1974).

Ballard is one of the most significant British SF writers of the second half of the twentieth century, and achieved a high level of mainstream and critical success for both his SF and non-SF works. Together with Michael Moorcock, Ballard was also one of the most influential figures in the British 'New Wave', a movement within SF that saw writers explore new forms, styles, subjects and themes that departed radically from older SF modes. *The Crystal World*, I will argue, presents what we might call a utopic dystopia: although his work hints at the end of human civilisation as a result of a bizarre crystallisation phenomenon that has begun to appear in various parts of the world, Ballard's attitude towards this phenomenon is ambiguous. On the one hand, these bizarre events may be said to reflect a common Ballardian theme: the transformation of the individual as a result of the technological and bureaucratic structures that had come to dominate late twentieth-century life. Such oppressive trends are allegorised in the crystallisation process depicted in the novel. In this sense, the novel appears to critique the anti-humanist tendencies of such developments, as Ballard's characters become increasingly alienated from social and cultural institutions and structures, progressively atomised and stripped of all agency by the massifying and anonymising processes of post-industrial society. Yet, on the other, Ballard's response to these late twentieth-century trends is neither to challenge the exploitative processes that gave rise to them nor to envision a means

of re-establishing human individuality or agency—rather, *The Crystal World* depicts a metaphorical submission of the human to the all-encompassing medium of technological rationality. Through his rejection of the external material world as a site of true significance in favour of the subjective world of the mind, and his concurrent emphasis on the utopian potential of the natural disaster to alter the inner landscapes of his characters, Ballard ultimately envisages the end of humanity as a utopian moment of material transcendence. Yet this is a version of utopia that, in *The Crystal World*, requires the complete subordination of the natural world in the service of the human utopian moment.

In contrast, Le Guin's *The Dispossessed*, I will argue, explicitly rejects such a version of rationality in favour of more holistic notions of embedded subjectivity, partial knowledges, and what I am here calling 'ontological parity'—the moral and ethical equivalence of the human and natural worlds. Like Ballard, Le Guin is a major figure in the SF of the second half of the twentieth century, and has received significant critical attention both in SF studies and in wider literary criticism. *The Dispossessed*, in turn, is one of her best-known works. I will here argue that this novel offers a suggestive example of Le Guin's holistic views of human/nature relations. On one level, the novel demonstrates her rejection of universal knowledge, and her insistence on the need for ethical consideration in scientific processes. Her conceptions of language and subjectivity as being intrinsically related to place and culture offer a corrective to the universal and chauvinist humanism of much earlier SF. At the same time, Le Guin's depictions of the symbiotic relationship between humanity and nature in her novel point to more egalitarian modes of ethical practice that recognise the equivalence of the natural world and natural beings. Through its incorporation of Taoist principles, *The Dispossessed* resonates with the environmental discourse that was beginning to emerge throughout the 1970s. As I will argue, although Le Guin's novel reproduces some of the weaknesses of the more radical modes of environmental thought, it ultimately offers a vision of a functioning human society that neither instrumentalises nor romanticises the natural realm, but rather treats it as a distinct and independent realm with its own intrinsic value, within which humanity must learn to live. In this, Le Guin's novel comes closest of all our examined works to offering a truly posthumanist vision—not in the sense of moving past the human, nor, as in Ballard's work, of

doing away with the human altogether, but rather with critically examining and reconceptualising the basic concepts that have underpinned humanist ethical frameworks.

In this way, as we will see, the term 'post-human' has two distinct inflections—one defeatist and escapist, the other critical and productive. Before we investigate the post-human in more detail, we will begin with an overview of the SF of the period. In particular, we will briefly examine the growth of environmental and ecological themes in SF during this period, as well as the increased popularity of utopian works during the 1970s. These will inform the readings of our two main works, each of which falls uneasily somewhere on the spectrum between utopian and dystopian writing.

Utopia and the rejection of 'Faust' in 1960s and 1970s SF

'Previously', writes British SF author M. John Harrison in a 1975 essay, 'we've had a special fondness for Faust, our test tube clown':

> Now we execrate him. We trusted him, and he gave us DDT; we put up with his absent-mindedness and his cranky white haircut, and he got strontium in the milk; 'glutted now with learning's golden gifts', he invented Lewisite and the unburnt hydrocarbon. We made sure he ate his breakfast, wiped the egg off his tie and managed his bank account; he introduced us to phenacetin, to the MIRV and the core-melt … His Magic Food all turned bad, his wings flew *us* a little too near the sun'.[3]

Harrison here offers a checklist of dubious technological achievements of the twentieth century, including harmful chemical agents (DDT, strontium, Lewisite, phenacetin) and nuclear technologies (MIRV, 'core-melts'). His examples—and the implication that much modern technological advancement has not, after all, been in humanity's best interests—inform the pall that, by the 1960s and 1970s, had firmly settled over the utopian technocratic visions of earlier Golden Age SF. Dreams of humanity's technological triumph over the galaxy had, for the most part, gone out of fashion within literary SF by the early to mid-1960s.

During this period, in place of the sweeping space operas and transcendent humanist mysticism of Asimov, Clarke, Heinlein, and others, we instead find Kurt Vonnegut lampooning

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[3] M. John Harrison, 'Sweet Analytics', 1975, *New Worlds: an anthology edited by Michael Moorcock* [henceforth *NW*], edited by Michael Moorcock, Flamingo, 1983, p. 341, emphasis in original

space travel, in 'The Big Space Fuck' (1972), as 'a serious effort to make sure that human life would continue to exist somewhere else in the Universe'.[4] Such space travel, in Vonnegut's story, has become an urgent priority—one underpinned not by any noble motives concerning the realisation of human evolutionary potential, but by simple material necessity: unchecked capitalist production has meant that 'Everything had turned to shit and beer cans and old automobiles and Clorox bottles', as a result of which human life simply 'couldn't continue much longer on Earth'.[5] To complete this ignoble take on the typical space opera venture, the colonising ship in Vonnegut's story, carrying the freeze-dried semen of thousands of approved donors, is christened 'in honor of a famous space pioneer': Arthur C. Clarke.[6]

Vonnegut's story epitomises the new, more self-consciously critical mode of SF that gained popularity in Britain and the United States during the 1960s, informed by the social and cultural dynamics of that decade. In an afterword to a 1999 republication of Norman Spinrad's *Bug Jack Barron* (1969), Michael Moorcock summarises the impasse at which western society had found itself in the decades following the Second World War:

> Tired of the familiar hypocrisies and the empty moralising of the middle-class, bored with the sententious orthodoxy of the official Left, suspicious of the motives of big business, especially the arms trade, hearing the first intimations of a very noisy uncontrollable cyberspace, a virtual universe of spin and image manipulation, understanding how popular media can become a sinister instrument of public brainwashing, how easily the culture of consumerism buys and sells our representatives … Spinrad put his finger to the pulse of the times.[7]

These social and cultural developments inform the humanist concerns of the SF of this period: the rapid transformations of individual and social life as a result of the continuing 'technological earthquake' (as Hobsbawm terms it) of post-war scientific research and development, given its most visible—and ideological—expression in the heated 'space race'

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[4] Kurt Vonnegut, 'The Big Space Fuck', *Again, Dangerous Visions* [henceforth *ADV*], edited by Harlan Ellison, 1972, Kindle edition, Gollancz, 2012, par. 2
[5] Vonnegut, par. 2
[6] Vonnegut, par. 3
[7] Michael Moorcock, 'Afterword', 1999, *Bug Jack Barron*, by Norman Spinrad, 1969, Toxic, 1999, p. 253

between the US and USSR[8]; the expansion of government bureaucracy and corporate entities, and the resulting clash between consumer conformism and the individualism promoted by a growing, youth-oriented, anti-capitalist counter culture; the pervasive influence of mass media in determining individual and social values; and the disorientating impacts—as Alvin Toffler outlines in his well-known 1969 study, *Future Shock*—of globalisation and technological acceleration on perceptions of space and time. Toffler characterises the average citizen of such 'super-industrial societies' as arose in the west during the post-war boom as a 'stranger in a strange land', unable to comprehend or cope with the 'novelty' and 'transience' that, as he sees it, typified 'the most rapid and deep-going technological revolution in history'.[9]

Such volatile conditions—the 'idea of change' that, as Daniel Bell argues, had come to dominate economics, technology, and culture[10]—had significant ramifications for the kinds of SF that were produced in the period. For Harrison, many SF writers and readers, lacking the capacity to meaningfully engage with the complexities of such a rapidly changing technological society, had instead retreated into mere escapist world-building, generating ever-more multifaceted and comprehensive *alternative* societies whose social, political and cultural configurations could nevertheless be more readily comprehended than those of the real world. Hence, he goes on, 'we have the World of Tolkien, the World of Michael Moorcock, the Worlds of *Dune* and *Star Trek*'.[11] Other works from the period, however, confront head on the complex issues of the age, and their ramifications for conceptualising the human. Anxieties concerning overpopulation, for example (a common concern of the 'baby boomer' generation of SF writers), recur in many works, including Harry Harrison's *Make Room! Make Room!* (1966), John Brunner's *Stand on Zanzibar* (1969), Larry Niven's *Ringworld* (1970), Le Guin's *Lathe of Heaven* (1971) and Thomas Disch's *334* (1972). Each of these texts stress the devaluation of human life and its subjection to instrumentalist bureaucratic control—the 'birth controls' and 'death controls' that frame human life, as Harrison puts it—that result from ballooning

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[8] Hobsbawm, p. 265

[9] Alvin Toffler, *Future Shock*, 1970, Bantam Books, 1971, pp. 186-187

[10] Daniel Bell, 'The Cultural Contradictions of Capitalism', *Journal of Aesthetic Education*, vol. 6, no. 1/2, 1972, p. 12

[11] Harrison, p. 344

populations and resource scarcity. At the same time, the familiar symbol of apocalyptic techology that had previously haunted 1950s SF—nuclear weapons and the doctrine of 'mutually assured destruction' (fittingly abbreviated to 'MAD'), reaching its pitch in the Cuban Missile Crisis of 1962—remained a common SF thematic, bubbling under the surface of SF works throughout the 1960s and 1970s, and contributing to the popularity of Stanley Kubrick's avowedly anti-nuclear satire, *Dr. Strangelove* (1964).

The prevalence of a variety of specifically nonhuman Others in well-known works of the period also led to extensive probing of chauvinistic western visions of human rationality, universality, and competence characteristic of older SF. Joe Haldeman's *The Forever War* (1974), for example, a hard SF novel written partly in response to the Vietnam War, depicts a soldier who participates in a protracted—and, it is eventually revealed, meaningless—war with an alien species for a full millennium. Alongside brutal depictions of the dehumanising conditions of warfare and the suppression of individuality in the service of military bureaucratic needs, *The Forever War*, like Lem's *Solaris* (1961, English translation 1970), also rejects universal conceptions of 'mind' in favour of a mutually determining relationship between subjectivity and embodiment. The 'Taurans' (the alien race of the novel) are initially unable to communicate with humanity because, as clones, their subjectivity is based on communal, rather than individual, identity—not until humanity also turns to cloning as a means of propagation (the majority of individuals having become homosexual) is communication established between the warring races, and the war brought to an end.

Elsewhere, in *Do Androids Dream of Electric Sheep?* (1968), Philip K. Dick exposes the ethical limitations of traditional definitions of the human through his depictions of 'androids'—mechanical beings designed as workers, not fully human yet possessing an irrefutable subjectivity—and 'specials'—cognitively limited individuals employed as menial labourers on an ecologically ruined Earth. These 'near-human' beings reveal the fault lines that lie within humanist understandings of subjectivity, as they are exposed to the cruelty and prejudice of 'normal' humans on the basis of their perceived lack of 'true' (rational, biological) humanhood. Conversely, in Kate Wilhelm's *Where Late the Sweet Birds Sang* (1976), the reverse thematic may be seen. The novel depicts a post-apocalyptic world in which biological

reproduction has been replaced by more 'efficient' cloning techniques. Mark, the illegitimate child of an ostracised clone, rejects the conformism, sterility, and lack of individuality that characterise the society of the clones. Mark's revolt against the clones takes the form of a reactionary humanism: his ultimate goal is the reaffirmation of possessive individualism to contrast with the enforced socialism of the clone society. To this end, Mark establishes a pastoral society in which 'the joys of men and women, and their agonies, were private affairs', conducted within an ostensibly utopian—although in actuality traditional and patriarchal—social framework.[12]

Many of the new modes of SF that began to appear at this time have been gathered under the heading of the 'New Wave', a movement usually dated from (in Britain) Moorcock's editorship of *New Worlds* from 1964 to 1969 and (in the US) the appearance of *Dangerous Visions* (1967), a seminal anthology of original stories edited by Harlan Ellison. The stories and novels of the 'New Wave' demonstrated a turn away from the clichéd 'hard' SF tropes of scientific realism, futuristic technology, and space travel—instead, there appeared more self-consciously literary works, committed to a more rigorous analysis and examination of philosophical and political topics, and explorations of the 'soft' sciences of psychology and sociology. The preoccupations of the New Wave are demonstrated in the movement's most characteristic concept, 'inner space', a term credited to J.B. Priestley. In a 1953 essay, Priestley wrote that 'society, like a rocket ship bound for some distant nightmare planet, is hurrying at full speed in the wrong direction; and … dangerously over-extraverted, we are refusing to deal justly with the unconscious side of our minds'.[13] This turn towards the psyche as a legitimate site for speculative extrapolations resulted in more insular modes of SF writing devoted not to the elaboration of ever more complex technological systems and human societies, but rather to an exploration of the nature of the subjective realities resulting from these systems, and the psychological worlds generated by them.

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[12] Kate Wilhelm, *Where Late the Sweet Birds Sang*, 1976, Gollancz, 2006, p. 250
[13] J.B. Priestley, 'They Come from Inner Space', 1953, *Thoughts from the Wilderness*, Heinemann, 1957, pp. 25-26

The highly experimental style of this mode, its preoccupation with the internal landscapes of late twentieth-century individuals, its liberal explorations of issues of sex, sexuality, race and gender, and its frequent recourse to psychedelic themes under the inspiration of the Beat Generation (particularly Burroughs), led to the emergence of a quite different notion of the human than that previously encountered in SF. Some works, for example, deployed radically non-realist prose styles to capture the increasing difficulties confronting individuals attempting to cognitively adapt to the conditions of late twentieth-century life. In Spinrad's *Bug Jack Barron*, for example, a talk show host finds himself embroiled in a complex conspiracy involving immortality, party politics, and racial prejudice in a future, media-saturated, and racially segregated America. The novel emphasises the role of the mass media in constructing and manipulating realities, and the collapsing boundaries between reality and 'realer than real' media images—the 'non-event history that existed only on the screen'.[14] This disorientation is mirrored in the frenzied vernacular of the novel:

> the traffic inched at a foot a second toward Bleecker, past souvenir stands, bare-box strip joints, state-license acid parlours, furtive street-corner schmeck dealers local action fading Slum Goddess tourist trade whores, through a miasma of grease-fried sausage smells, pot-musk, drunken-sailor piss, open air toilet aroma of packaged disaster'.[15]

The clashing imagery and rapid-fire run-on phrasing of such passages imply sensory overload, as grammar and syntax are abandoned in the effort to keep pace with the flow of information from the external environment.

In another work, Dick's *Ubik* (1969)—alongside a satirical depiction of a thoroughly commodified world in which individuals are liable to become trapped in their homes if they lack the toll required to activate the front door—Dick also raises deeper questions concerning the epistemological blurring of reality and unreality as a result of technological manipulation. The characters of his novel, set in a future United States, experience an ever greater sense of cognitive alienation from the world around them, finding themselves increasingly confronted with phenomena—time travel, spontaneous and inexplicable deaths, rapidly decomposing

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[14] Spinrad, p. 226
[15] Spinrad, p. 72

consumer items, 'ghosts' who feed on the 'half-lives' of the cryogenically frozen 'dead'—that neither they nor the reader are able to intellectually process or rationalise. The novel's ambiguous ending refuses to resolve even the question of which of the characters remain living, and which are technologically maintained in a state of hallucinatory 'half-life'. Both characters and readers are thus left, as Spinrad puts it in another story (riffing on Dylan), with 'no direction home'—that is, bereft of any absolute means of confirming the objective basis of their psychological realities.[16]

Other writers rendered these processes in even more radical ways, depicting the complete dissolution of the human within technological systems. In 'The Four-Colour Problem' (1971), for example, Barrington J. Bayley depicts society as an 'oven' designed to maintain individuals at a state of maximum psychological pressure: 'human society' in Bayley's story is conceived as a 'machine' in which individuals are 'translated' into 'social logic units', their behaviours in any social context understood as an outcome of binary 'vectors' such as 'Praise/ Blame, Like/Dislike, Admiration/Contempt, Esteem/Disgust, Enthusiasm/Apathy, Why-hello-there/Get-out-of-my-sight-you-disgusting-little-man'.[17] 'Humans', in any traditional sense, are thus absent from Bayley's story, substituted by 'vectors' that 'outliv[e] the units [i.e., individuals] that process and transmit them'.[18] At the same time, Bayley's juxtaposition of standard narrative prose with passages of dense pseudo-scientific discourse, all contained within a perplexing nonlinear narrative, reproduces the sense of temporal and spatial disorientation experienced by individuals in the 'oven', a technique also employed in Pamela Zoline's 'The Heat Death of the Universe' (1967), Langdon Jones's 'The Eye of the Lens' (1968), Ballard's *The Atrocity Exhibition* (1970), and numerous other New Wave works. Zoline's story is well-known for its elaboration of the theme of entropy—the key concern, according to Colin Greenland, of much New Wave writing.[19] In this story, a housewife, Sarah

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[16] See Norman Spinrad, 'No Direction Home', 1971, *No Direction Home: an anthology of science fiction stories by Norman Spinrad*, 1975, Fontana/Collins, 1977, pp. 9-24

[17] Barrington J. Bayley, 'The Four-Colour Problem', 1971, *NW*, p. 45

[18] Bayley, p. 45

[19] See Colin Greenland, *The Entropy Exhibition: Michael Moorcock and the British New Wave in Science Fiction*, 1983, Kindle edition, Gollancz, 2013, chap. 11

Boyle, undergoes an existential crisis centred on the apparent meaninglessness of all existence and the universal tendency towards decay and dissipation. This crisis subtly collapses the distinctions between Sarah and the technological environment in which she resides: her eyes are described as a 'fine, modern, acid, synthetic blue', while the dissolution of her personal identity—'Sarah has at times felt a complete unity with her body, at other times a complete separation … Sometimes, at extremes, her Body seems to her an animal on a leash, taken for walks in the park by her Mind. … Sometimes Sarah can hardly remember how many cute, chubby little children she has'—comprises a metaphorical enactment of the 'heat death of the universe' as the boundaries between Sarah and her surroundings slowly dissipate.[20]

The impact of all these works is to both critically address the humanist legacy of older SF modes and expand the field to encompass new forms of subjective and cognitive experience. The reaction against bland technocratic utopianism is evident—the general attitude towards the traditional SF tenets of universal human progress, instrumental rationalism, and technological determinism is overwhelmingly a sceptical one. As Harrison puts it, it would appear, from the tone of SF works in the 1960s and 1970s, that 'Rationalism … has sold us up a very muddy backwater indeed'.[21]

As may be noted from the selection of works mentioned above, the general tone of post-war works was dystopian, with many SF works from the 1960s and 1970s offering markedly pessimistic visions of the future. The New Wave's preoccupation with entropy, the ubiquitous threat of nuclear apocalypse, the collapsing distinctions between personal and public life, the presence of ever-growing technological systems that reduced the individual to a unit within a bureaucratically managed social equation, and the obsessive concern (as Greenland puts it) with 'the disruption of history and the end of man': each of these contributed to a sense of the period—in the words of Philip José Farmer—as 'The Age of the Plugged-In Man', or 'The Age of Complete Interconnectedness.[22]

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[20] Pamela Zoline, 'The Heat Death of the Universe', 1967, *England Swings SF*, edited by Judith Merrill, Ace Books, 1968, p. 319, 322, 324
[21] Harrison, p. 342
[22] Philip José Farmer, 'Riders of the Purple Wage', *Dangerous Visions*, edited by Harlan

This dystopian trend can be particularly seen in the depiction of humanity's relationship to the natural environment—a relationship that, in the 1960s and 1970s, was rapidly moving to the fore of the cultural and political consciousness of western consumer society. The post-war period of skyrocketing production and manufacture that unfolded roughly between the end of the Second World War and the early 1970s also saw human ecological destruction on an unprecedented scale: as Marshall Berman remarks, societies in the 1970s in particular '[had] to learn fast how to use their diminishing energies to protect the shrinking resources they had and keep their whole world from running down'.[23] The publication of popular works of environmentalism—such as Rachel Carson's influential study of the destructive environmental impacts of pesticides, *Silent Spring* (1962), or Stewart Brand's *Whole Earth Catalog*, an American magazine first published in 1968 that contained articles, features, and reviews broadly centred around a theme of anti-consumerist ecologism—generated a sharp rise in public awareness of and interest in ecological and environmental issues (the first 'Earth Day', for example, was held in 1970), and eventually culminated in the growth of western environmental politics throughout the 1970s.

The post-war period hence brought human attitudes towards nature to the fore, a concern that can be charted through the rise of ecological themes in SF. Brian Aldiss' *Hothouse* (1962), for example, depicts a far-future Earth on which human life has been brought near to extinction by environmental change. These changes lie beyond human control: lunar gravity has halted the planet's rotation, while the ageing sun has also expanded enormously, rendering the sunward side of the now-stationary planet inhospitably hot. Humans—reduced to tiny, tree-dwelling beings—fight for survival in this world against a plethora of carnivorous plant species. The novel is, in certain ways, typical of New Wave fiction: the pantropic decline of the human species, the loss of higher cognitive and linguistic functions, and the passivity of protagonist Gren as he considers, at the close of the novel, the approaching extinction of the species, epitomise the entropic structure of the work, an evolutionary fading-out of humanity that owes

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Ellison, 1967, Gollancz, 1987, p. 52; Greenland, chap. 11
[23] Marshall Berman, *All That Is Solid Melts into Air: the experience of modernity*, 1982, Penguin Books, 1988, p. 330

as much to Wells's *The Time Machine* as to contemporary environmental discourse. Aldiss'
novel, however, is not so much defeatist as merely anti-idealist: his rejection of human
rejuvenation or easy technocratic solutions to environmental crises entails a confrontation with,
rather than an escape from, humanity's material place in the planetary ecosystem. By contrast,
Frank Herbert's *Dune* (1965)—'one of the most influential examples of ecological sf', as Chris
Pak notes—although it explores themes of resource scarcity and ecological balance, ultimately
espouses a 'strong instrumental approach to nature' that denies the natural world objective
ontological value.[24] The natural environment in the novel becomes an instrument of human
self-actualisation, subject to transformation in the service of human needs, and in this way may
be linked to the intense training of the fighting 'Mentats', a group of highly trained warriors
whose minds are also capable of rapid and complex calculations. Just as the Mentats exercise
complete control over mind and body, the extension of human control over the arid landscape
of Arrakis (the planet of the novel), encompassing even the giant carnivorous sandworms that
roam this landscape, illuminates the supposedly necessary subordination of nature to human
needs.

In general, however, many of the allusions to the natural world in SF works from this
period reflected a sense of environmental gloom, the experience of nature diminished (to
borrow an image from John Brunner) to 'a design of dead leaves embedded under a clear plastic
surface'.[25] This gloom, however, began to be challenged with the resurgent popularity of
utopian fiction in the 1970s. These utopias differed significantly from their classical
counterparts. Peter Fitting argues that, with contemporary utopian fiction, it is necessary 'to
examine the effectiveness of this writing about alternate societies in terms of concrete social
change: how to link a poetics of the future with a politics of the future'.[26] Utopian writing was
no longer conceived as arbitrary wish fulfilment or escapism, but instead regarded as 'keep[ing]
alive the possibility of a world qualitatively distinct from this one', and as registering 'a

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[24] Chris Pak, *Terraforming: ecopolitical transformations and environmentalism in science fiction*, Liverpool University Press, 2016, p. 118, 122
[25] John Brunner, *Stand on Zanzibar*, 1969, Arrow Books, 1984, p. 150
[26] Peter Fitting, 'Positioning and Closure: on the "reading effect" of contemporary utopian fiction', *Utopian Studies*, vol. 1, 1987, p. 24

stubborn negation of all that is'.[27] Jameson echoes this point, writing that the 'fundamental dynamic' at the heart of all contemporary utopian texts is 'the dialectic between Identity and Difference, to the degree to which such a politics aims at imagining, and sometimes even at realising, a system radically different from our own'.[28] Thus such utopian visions, even as they departed from the present system towards some estranging future alternative, remained ultimately directed back towards the society from which they sprang—as Jameson argues, utopias, and SF more generally, can in this way be thought of as 'collages of experience, constructs made up of bits and pieces of the here and now'.[29] If we think in this way about the genre, Jameson claims, the focus shifts onto questions of form and representation in utopian writing, rather than content, since 'what cannot be said' in a critical utopian text, or more accurately, what cannot be represented, is often of more significance than what can.[30]

Hence more recent utopian works tend, as Fitting notes, to 'depict … the struggle for utopia rather than the image of a finished and harmonious Utopian society'.[31] This shift away from the inert, completed utopia towards a more dynamic notion of the utopian work-in-progress, and towards utopian texts that engage more seriously with questions of form and representation, has been widely noted: Suvin, for example, highlights Wells' contrast between the 'static', perfect utopia and the 'kinetic' utopia, 'more perfect' than the empirical world of the author but not necessarily represent perfection itself.[32] Tom Moylan has been the most significant scholar of utopia in this regard, introducing the influential notions of the 'classical' utopia and the 'critical' utopia to describe these notions of the static and evolving utopias respectively.[33] For Moylan, while the classical utopia offered a 'blueprint' of the perfect society which utopian practitioners had merely to put into practice, the critical utopia depicts instead an ongoing dialectic between 'the originary world and the utopian society', itself marked by

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[27] Fitting, 'Positioning and Closure', p. 24
[28] Fredric Jameson, *Archaeologies of the Future: the desire called utopia and other science fictions* [henceforth *AF*], Verso, 2005, p. xii
[29] Jameson, *AF*, p. xiii
[30] Jameson, *AF*, p. xiii
[31] Fitting, 'Positioning and Closure', p. 25
[32] Suvin, p. 45
[33] See Tom Moylan, *Demand the Impossible: science fiction and the utopian imagination*, by Moylan, 1986, edited by Raffaella Baccolini, Peter Lang, 2014, pp. 1-11

'difference and imperfection'.[34] Hence the critical utopia acknowledges 'the limitations of the utopian tradition' while retaining the 'dream' of perfection.[35] This evolution in the form, according to Moylan, becomes evident particularly in the 1970s, as a critique of 'corporate and allied state interests':

> Inspired by the movements of the 1960s and finding new imagery in the alternatives being explored in the 1970s, the critical utopia is part of the political practice and visions shared by a variety of autonomous oppositional movements that reject the domination of the emerging system of transnational corporations and post-industrial production and ideological structure … The new opposition is deeply infused with the politics of autonomy, democratic socialism, ecology, and especially feminism.[36]

Hence the critical utopia emerges as a potent political literary form as part of the general wave of anti-authoritarian movements that marked the 1960s and 1970s, while the anti-patriarchal utopian radicalism shared by environmentalism and feminism would lead to the emergence, towards the end of the decade, of a critical framework that united these two fields.[37]

Whereas works like Wilhelm's 'The Funeral' (1972) and Suzy McKee Charnas' *Walk to the End of the World* (1974) draw on dark visions of brutal patriarchal dystopias—in Charnas' novel, situated explicitly within an ecologically devastated world—others such as Le Guin's *The Dispossessed*, Joanna Russ's *The Female Man* (1975), Ernest Callenbach's *Ecotopia* (1975), Samuel Delany's *Triton* (1976), and Marge Piercy's *Woman on the Edge of Time* (1976) offer more holistic utopian visions of human/nature co-existence that explicitly reject masculinist views of nature as an inert resource whose only value derives from its usefulness in serving the rapacious human desire to consume. Such critical utopian fiction is instead committed to exploring such questions as how technology should be deployed in a more balanced human society, and how that society should in turn conceive of a natural environment that can no longer be viewed simply as either enemy or resource. This, of course, also involves speculation regarding the kind of human individual who might inhabit such a society. With this

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[34] Moylan, p. 10
[35] Moylan, p. 10
[36] Moylan, p. 11
[37] See Carolyn Merchant, *The Death of Nature: women, ecology, and the scientific revolution*, Harper & Row, 1980

in mind, we turn now to the first of our two works under consideration in this chapter, Ballard's *The Crystal World*.

Alienation and human transcendence in Ballard's *The Crystal World*

The Crystal World is the last of Ballard's early trilogy of psychological disaster novels, having been preceded by *The Drowned World* (1962) and *The Burning World* (1964; later revised as *The Drought*, 1965).[38] *The Crystal World* represents, according to the author himself, the culmination of his literary output up to that point. As noted by W. Warren Wagar, Ballard divided his early work into two distinct phases: the first, which concludes with *The Crystal World* in 1966, 'offered descriptions of "imaginary places," under the direct inspiration of the surrealist painters', while the second, which Ballard dated from the publication of *The Atrocity Exhibition* in 1970, focusses more exclusively on media and technology.[39]

This division is, in a sense, a misleading one: while there are clear differences between these two phases of Ballard's writing, certain key themes recur consistently throughout his early fiction. The most significant of these is Ballard's preoccupation with the experience of time. Despite his oft-repeated commitment to exploring 'inner space' in his works, it is time that comprises perhaps the major thematic concern of Ballard's fiction. Indeed, 'inner space' itself is understood by Ballard as a function of time: he defines it as an 'internal landscape of tomorrow that is a transmuted image of the past'.[40] In his much-cited essay, 'Which Way to Inner Space?' (1962), Ballard goes further, arguing that, in order to prevent it from becoming

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[38] Prior to *The Drowned World*, Ballard had published an earlier work of disaster fiction, *The Wind from Nowhere* (1961). Although this was Ballard's first published novel, he had little regard for it, dismissing it as a 'piece of hackwork' (Brigg, p. 43) and subsequently referring to *The Drowned World* as his 'first novel' (Ballard, p. 84). Given the significant stylistic and thematic differences that separate this novel from the later trilogy of disaster novels, *The Wind from Nowhere* will be excluded from considerations of Ballard's disaster fiction for the remainder of this chapter. Terms such as 'the disaster trilogy' or 'the disaster novels' should thus be understood to refer to the latter three works, unless otherwise stated. See Peter Brigg, *J.G. Ballard*, Borgo Press/Wildside Press, 1985, and J.G. Ballard, *Miracles of Life: an autobiography* [henceforth *ML*], Harper Perennial, 2008.

[39] W. Warren Wagar, 'J.G. Ballard and the Transvaluation of Utopia', *Science Fiction Studies*, vol. 18, no. 1, 1991, p. 53

[40] J.G. Ballard, 'Time, Memory and Inner Space' [henceforth 'TMIS'], *The Women Journalist Magazine*, 1963, par. 6, web, *JG Ballard*, www.jgballard.ca/non_fiction/jgb_time_memory_innerspace.html, accessed August 2017

stale and uninteresting, SF must 'turn its back on space, on interstellar travel, extra-terrestrial life forms, galactic wars', and other standard motifs of the genre.[41] In place of these tired tropes, he suggests that writers should instead concentrate on 'the elaboration of such concepts as the time zone, deep time and archaeopsychic time. I'd like to see more psycho-literary ideas, more meta-biological and meta-chemical concepts, private time-systems, synthetic psychologies and space-times'.[42] In this, Ballard reflected a wider social preoccupation with 'future shock' and the shattering of the notion of even-paced historical development in the 1960s: as Toffler argues, social and cultural life in the 1960s was characterised by the collapse of the future into the present as a result of 'the incessant demand for change' that marked capitalist society and was especially evident in the rapidly accelerated rate of technological development.[43]

We can see this collapse at work in Ballard's fiction. In 'The Terminal Beach' (1964), for example, one character notes how thermonuclear weapons have 'fused the sands' of a nuclear testing site into 'layers', resulting in 'pseudo-geological strata'.[44] In contrast to the long durations of time required to form natural geological strata, these weapons have instead 'condensed the brief epochs, microseconds in duration, of *thermonuclear* time'.[45] Ballard's blurring of geological and technological time here dramatises the accelerated temporal ontologies of the late twentieth century: the speed and far-reaching impacts of technological developments have obliterated the course of natural time, overlaying it with the sediments of humanity's technological pursuits. Nuclear technologies—the archetypal technologies of the Cold War era—have thus 'inverted the geologist's maxim, "The key to the past lies in the present." Here, the key to the present lay in the future'—that is, the future of humanity's technological initiatives, rapidly collapsing in upon the present.[46]

[41] J.G. Ballard, 'Which Way to Inner Space?' [henceforth 'WWIS'], *New Worlds*, May 1962, p. 117, web, *The Luminist League*, www.luminist.org/archives/SF/NW.htm, accessed August 2017
[42] Ballard, 'WWIS', p. 118
[43] Toffler, p. 9
[44] J.G. Ballard, 'The Terminal Beach' [henceforth 'TTB'], 1964, *The Complete Short Stories: volume two* [henceforth *CSS2*], 2001, Fourth Estate, 2014, p. 33, my emphasis
[45] Ballard, 'TTB', p. 33
[46] Ballard, 'TTB', p. 33

Ballard's concern with time is highly evident in the work under consideration here. Expanding on a concept first depicted in 'The Illuminated Man' (1964), *The Crystal World* follows the efforts of Edward Sanders, an English leprosy doctor based in Africa, to come to terms with a strange natural phenomenon that is slowly crystallising the rainforests of the Cameroon Republic. The crystallisation process freezes everything in its path, solidifying animals, plants and objects within a static 'house of jewels'.[47] The cause of this mysterious transformation is eventually revealed to be rooted in time itself: the appearance of 'anti-time', a temporal corollary to anti-matter, is causing a decrease in the 'total store of time' remaining in the universe.[48] In turn, this decrease is causing objects to produce 'spatial replicas of themselves, substance without mass, in an attempt to increase their foothold on existence'.[49] Affected matter, attempting to compensate for its sudden loss of temporal qualities, begins instead to proliferate along spatial coordinates, causing a literal spatialisation of time. The full catastrophic consequences of this phenomenon are made violently apparent to Sanders when he attempts to rescue a soldier who has become encased within crystals. Sanders shatters the mineral formations covering the man's face and arms, only to later realise that the crystals *were* the man—he had in fact been destroying parts of the man's body.

Ballard's preoccupation with reversing time or escaping from it altogether is thus clearly in evidence in *The Crystal World*. Each of the disaster novels follows the protagonist as he undergoes an intense psychological regression following some apocalyptic natural disaster, unearthing a long-buried psychic connection to the distant biological past. Ballard's recurring depiction of psychological and biological regression offers a way to reintroduce his characters into more meaningful 'time-systems' rendered unavailable by the technological and cultural conditions of the late twentieth century—in many cases, the temporal ontologies of the biological past. Time within Ballard's fiction is thus figured as 'a primitive mental structure', with the temporal experiences of his characters mediated through spatial metaphors.[50] In this, Ballard's works reflect the structure of earlier imperialist fiction in which, as we saw in the

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[47] J.G. Ballard, *The Crystal World* [henceforth *TCW*], 1966, Triad Panther, 1978, p. 69
[48] Ballard, *TCW*, p. 85
[49] Ballard, *TCW*, p. 85
[50] J.G. Ballard, 'Memories of the Space Age', 1982, *CCS2*, p. 594

first chapter, time becomes a qualitative category only within the 'primitive' peripheral spaces of empire. Ballard, however, rejects the spatial framework adopted by earlier imperialist SF. Rather than travelling from 'advanced' to 'primitive' spaces in order to achieve movement backwards through time, the advanced and technologically sophisticated spaces of the western world are themselves made to regress to the 'archaeopsychic past' through the incursion of invasive natural forces. As a result, Ballard's characters themselves appear to adopt the role of 'pre-humans' who must undergo psychological transformation in order to adapt to their new 'primitive' natural environments.

Yet *The Crystal World* is ultimately more concerned with humanity's possible futures than with its evolutionary past. As I will argue here, *The Crystal World* can be read as a response to the growth of mass technological institutions and structures within the context of late twentieth-century western society. In particular, the crystallisation process offers an allegory for the dehumanising processes of the scientific imagination, characterised by qualities of detachment and alienation, that was slowly coming to determine western societies. The impacts of these processes for human individuals are depicted in Ballard's 1975 novel, *High-Rise*, in which he describes a 'new social type', characterised by 'a cool, unemotional personality', which 'thrived like an advanced species of machine in the neural atmosphere' of the post-war period.[51] This type, and the 'psychological pressures' that afflict it, was generated by a set of phenomena characteristic of a 'new kind of late twentieth-century life': 'the invasion of … privacy by government agencies and data-processing organizations', the 'rapid turnover of acquaintances [and] lack of involvement with others', and the 'impersonal steel and concrete landscape[s]' of urban space—built 'not for man', Ballard writes, 'but for man's absence'.[52] The human itself figures within the mass technological structures of the late twentieth century not as a living being, but rather as a cog in 'a huge machine', with the offices and high-rises of the late twentieth century functioning on the basis of 'a social hierarchy as rigid and formalized as an anthill's'.[53]

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[51] J.G. Ballard, *High-Rise* [henceforth *HR*], 1975, Fourth Estate, 2014, Kindle edition, ch. 3
[52] Ballard, *HR*, ch. 2-3
[53] Ballard, *HR*, ch. 1, 7

Yet *The Crystal World*, as with each of the disaster novels, is also concerned with human transcendence, viewing the natural catastrophe as a means for the isolated human individual to achieve a mode of solipsistic utopian self-actualisation. This stress placed on the utopian qualities of the catastrophe undercuts the force of Ballard's critique of the alienation and detachment that characterise late twentieth-century life, particularly since the utopian moment, as we will see, ultimately comes at the cost of the sanctity and ontological independence of the natural world.

We begin this analysis with an examination of Ballard's depictions of technological alienation in the late twentieth century. At first glance, *The Crystal World* seems the least concerned of all the disaster trilogy novels with technology, or indeed with human environments at all. Whereas both *The Drowned World* and *The Drought* take place within urban spaces, and so focus on the disintegration of the structures of the western world as a result of natural forces, *The Crystal World* takes place, for the most part, in the natural landscapes of the Cameroonian rainforests. (The other two sites of crystallisation mentioned in the novel—the Florida everglades and the Pripyat marshes of Russia—are also natural spaces.) This choice of a decolonised nation-state as a setting for the novel is significant: for H. Bruce Franklin, the waves of decolonisation and national independence movements that followed the Second World War are crucial to understanding the trend towards apocalyptic fiction that dominated SF in the post-war period, of which Ballard was one of the key producers. Following 'the devastation of the European empires' in the post-war decades, Franklin argues, there was 'an increasingly widespread belief, pulsating outward from England, that disintegrating homeland of a collapsed global empire, that the world [was] coming to an end'.[54] Just as pre-war fiction embodied the technocratic utopian impulses of western societies, Franklin argues, so post-war fiction embodies the technophobic dystopian fears of the post-colonial and post-nuclear generation. The symbol of the crystal in *The Crystal World* is, for Franklin, emblematic of Ballard's ultimate fatalism, representing his own deep-seated desire, as an imperial subject,

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[54] H. Bruce Franklin, 'What Are We to Make of J.G. Ballard's Apocalypse?', 1979, par. 2, web, *JG Ballard*, www.jgballard.ca/criticism/ballard_apocalypse_1979.html, accessed August 2017

to check this process of imperial disintegration—the crystal symbolises a literal 'desire to stop time', within which is submerged a deeper desire 'to stop history' itself.[55]

This assessment of Ballard as both elegist for the fall of empire and herald of a new dystopian consciousness requires some investigation. Certainly, the colonial past of Cameroon forms part of the contextual background to *The Crystal World*: at one point, Sanders sees a 'French military landing-craft' moored in Port Matarre, while later he takes shelter in an extravagant western-style mansion belonging to a former mine-owner, having arrived at this location in an imported Chrysler.[56] These details signal the lingering European presence within the former colony. Yet the choice of Cameroon as setting for *The Crystal World*, I would argue, also plays a more fundamental role in the text, serving to dramatise the sense of estrangement from social and cultural institutions and processes that, for Ballard, came increasingly to permeate individual life in the late twentieth century. The humans that populate such mass technological societies, permeated and determined by pervasive bureaucratic and media institutions and structures, demonstrate the extent to which, as Althusser argued in 1964, the 'myth of man'—that is, the notion of the autonomous, self-identical, and self-actualising agent familiar from liberal humanism—had been reduced 'to ashes'.[57] The impact of the socio-technological structures of the late twentieth century was to shift social agency away from the individual towards massive bureaucratic systems. Ballard's introverted characters resemble Jameson's 'schizophrenic', 'isolated, disconnected', unable either to comprehend the volley of 'discontinuous material signifiers' emanating from pervasive media platforms, 'which fail to link up into a coherent sequence', or to retain a hold on a personal or cultural past in the context of a constantly shifting present.[58] These subjects are left without a 'feeling of identity', manipulated to conform to the rationalisation and efficiency required by western social and economic institutions, as a result of which, as Greenland remarks, 'the mind ceases to balance

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[55] Franklin, par. 37

[56] Ballard, *TCW*, p. 11, 79

[57] Louis Althusser, 'Marxism and Humanism', 1964, *For Marx*, translated by Ben Brewster, 1969, Verso, 2005, p. 229

[58] Fredric Jameson, 'Postmodernism and Consumer Society', *The Anti-Aesthetic: essays on postmodern culture*, edited by Hal Foster, Bay Press, 1983, p. 119

itself and social communication is paralysed'.[59] This process is captured throughout Ballard's fiction, evident, for example, in the fragmented and shifting character (whose name changes with each chapter) at the heart of *The Atrocity Exhibition*. This character repeatedly attempts, and fails, to 'obtain a valid unit of existence'—that is, a meaningful grasp on their personal and historical identity—by reinterpreting their subjective experience in terms of anonymous geometrical patterns.[60]

In particular, Ballard confronts this alienating new environment through a series of images of human interactions with unsettling and ambiguous landscapes. In *High-Rise*, for example, the tenants of a forty-storey apartment block react against the pressures of their crowded living quarters by reverting to a violent and tribal social formation that, as one character muses, merely makes explicit the concealed 'ruthlessness and aggression' that define twentieth-century life.[61] A recurring theme of the disaster trilogy, meanwhile, is that of the estrangement of the individual from familiar social relations and structures in the face of catastrophic natural forces, and the resulting confrontation with a new, and initially incomprehensible, social environment. *The Drowned World*, for example, depicts a post-apocalyptic world in which the melting of the polar ice caps has severely flooded all major cities, with scientific expeditions dispatched from humanity's last strongholds to survey the abandoned regions. Within the 'primitive' space of an—initially unnamed—European city, biologist Robert Kerans finds himself becoming gradually alienated both from his companions and from the increasingly absurd rituals of scientific investigation and military administration. He is haunted by dreams of psychological regression and dissolution into the environment: 'Kerans felt, beating within him like his own pulse, the powerful mesmeric pull of the baying reptiles … he felt the barriers which divided his own cells from the surrounding medium dissolving'.[62] This sense of estrangement from the self, of the collapse of previously stable boundaries between subjective self and objective world, is anticipated in the contrast, at the beginning of the novel, between the artificiality of the 'black marble basins and gold-plated

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[59] Jameson, p. 119; Greenland, chap. 7
[60] J.G. Ballard, *The Atrocity Exhibition*, 1970, Fourth Estate, 2006, p. 57
[61] Ballard, *HR*, ch. 16
[62] J.G. Ballard, *The Drowned World* [henceforth *TDW*], 1962, Fourth Estate, 2012, p. 71

taps and mirrors' of the 'Ritz' in which Kerans is staying, symbolic of advanced human culture, and the 'strange mournful beauty' of the natural lagoon immediately outside the hotel.[63] The ambiguous identity of the city—'had it once been Berlin, Paris or London?'—and the collapse of familiar spatial distinctions echo the sense of individual disorientation that, as a result of continued globalisation, bureaucratic growth and rapid technological acceleration, had become characteristic of all the 'unreal cities' (to borrow T.S. Eliot's term) of twentieth-century western societies.[64]

The choice of Cameroon as the setting for *The Crystal World* serves in part to make these processes of individual estrangement from social structures more explicit. Ballard dramatises the disconnect that has arisen between the familiar western structural apparatus of state and society historically imprinted on the nonwestern space of Port Matarre and the individuals that must navigate these structures. When Sanders arrives at his hotel in Port Matarre and begins making queries about Mont Royal—his final destination in the region, to which all local transport has suddenly and mysteriously been halted—he is met with highly ambiguous responses from local workers and officials. The 'evasive' porter at his hotel, for example, responds to his queries with a 'studied shrug', while a ticket taker in a nearby booking office tells him 'dreamily' that 'Nothing's going on'.[65] Later, when he enquires to the local police chief, an 'African charge-captain', about the 'atmosphere of mystery' hanging over the town, he is met with the vague response that the locals of Port Matarre are leaving because of 'the forest … It frightens them, it's so black and heavy all the time'.[66] From the outset, then, Sanders encounters everywhere in this African port town an air of uneasy bureaucratic inefficiency and dysfunction that he struggles to understand—a familiar trope of imperial fiction as far back as Conrad's *Heart of Darkness*. This perception is further intensified by a bizarre event witnessed in a local market: a missionary priest, who had travelled into Port Matarre alongside Sanders, grabs a crystallised crucifix from a stall and inexplicably begins to

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[63] Ballard, *TDW*, p. 9, 10
[64] Ballard, *TDW*, p. 9
[65] Ballard, *TCW*, p. 22, 26
[66] Ballard, *TCW*, p. 27

shake it violently, evidently 'intent … on exorcizing whatever powers it held for him'.[67] The police officer and the priest, familiar social emblems of the institutions of civil and religious authority, have thus here become erratic, even volatile, figures within the defamiliarised world of the novel.

This sense of creeping individual alienation from the social and cultural institutions of western authority may to some extent have been informed by Ballard's own experiences of European colonialism, which (in his account of them) were marked by a distinct sense of unreality or illusoriness. Ballard spent his formative childhood years in Shanghai, gaining direct experience of this 'bright but bloody kaleidoscope …. 90 per cent Chinese and 100 per cent Americanized', where the 'French Concession' sat alongside his father's own British textile factory, and where the incredible wealth of European and American expats existed alongside the bodies of starved Chinese labourers in the streets.[68] For Ballard, Shanghai was a world of extremes: a 'cruel and lurid world' of 'gangsters and pickpockets … Chinese dragon ladies [and] hawkers', in which all the excesses of human existence could be witnessed.[69] In particular, Ballard recalls the 'enormous ancient alligator' of Shanghai zoo, a spectre who 'seemed to have been dragged forward reluctantly so many millions of years into the twentieth century', now absurdly surrounded by 'cigarette packets and ice-cream cartons'.[70]

Later, in Lunghau internment camp where he and his family spent the war years, Ballard was exposed to the tales and memories of his fellow British internees, who painted a nostalgic picture of the English homeland to which Ballard was soon to return: a place of 'first nights and dancing till dawn … a comfortable Beverley Nichols world of market towns and thatched roofs'.[71] In contrast to the typical colonial narrative, which might envision such a setting as Shanghai as a fantastic and romanticised Orientalist landscape, for Ballard it was instead Britain itself that took on these 'unreal' characteristics. The reality of post-war English society, however, quickly shattered this wistful view: Ballard found England to be 'derelict, dark and

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[67] Ballard, *TCW*, p. 35
[68] Ballard, *ML*, p. 4, 6
[69] Ballard, *ML*, p. 29
[70] Ballard, 'TMIS', par. 3
[71] Ballard, *ML*, p. 38

half-ruined', a grim society in which 'hope itself was rationed'. [72] Ballard's formative experiences of Britain were thus marked by disillusionment—he was witness not to the strength and vitality of the British empire, its economic and technological conquest of the colonies, but rather to its decline and collapse.

We can see that Ballard's experiences of both Shanghai and England were marked by a sense of unreality: Shanghai as a lurid and polarised cosmopolis, and England as a nostalgic fantasy punctured by the disappointing realities of post-war British society. Hence, although Franklin may be correct in declaring Ballard to be the writer of the apocalypse, who '[more] than any other writer … incarnates the apocalyptic imagination running riot in Anglo-American culture today', this preoccupation with the ruin of society must be put into its specific context.[73] His apocalypse is informed not so much by a sense of the mournful *loss* of empire as of its *absence* in the first place—for Ballard, the British empire never quite existed as a lived reality, and its destruction figures not as an index of Ballard's imperial pessimism but rather as a literalisation of its (for Ballard) unreal qualities. As a result, Ballard's apocalyptic images are of a very different order from, for example, the nostalgic 'cosy catastrophes' of that other great British writer of the end of the world, John Wyndham. The choice of decolonised Cameroon as the setting for *The Crystal World*, and the sense of ambiguity and estrangement that hangs over the institutional structures depicted in the text, simply makes explicit the alienation that for Ballard hangs over *all* modern technological, urban, or humanmade spaces. What emerges from Ballard's descriptions of Cameroon and London in his disaster novels, as much as from his recollections of the Shanghai of his boyhood, is a fundamental sense of *un*reality—of an unsettling distance between the individual and the social and cultural institutions by which they are surrounded.

Of course, Cameroon serves in Ballard's text not merely as an example of a decolonised nation-state, but also as a specifically natural space, with Port Matarre surrounded on all sides by rainforests. Yet here, too, we can detect these processes of alienation at work, as nature itself is transfigured into a technological landscape. We have seen how technological 'enframing',

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[72] Ballard, *ML*, p. 122, 123
[73] Franklin, par. 1

in Heidegger's use of the term, can be understood as a process of spatialisation—that is, of situating otherwise mutable and fluctuating phenomena within the static structures of scientific and technological thought. As noted above, the process of crystallisation itself is a literal draining of dynamism and vibrancy—of time itself—from the substance of the forest. Given this, the petrification of the Cameroonian rainforest thus more closely resembles a technological, rather than natural, process: the merger of all the natural world within one atemporal and homogenous structure, such as occurs during the crystallisation process, serves as an effective allegory for scientific procedure itself.

Indeed, it is significant to note the seeming facility with which one character frames the phenomenon within a scientific vernacular. The process is the result, this character claims, of 'atomic' forces: 'this Hubble Effect, as they call it, is closer to a cancer as anything else … an actual proliferation of the sub-atomic identity of all matter'.[74] A similar scientific gloss is provided to account for each of the natural apocalypses depicted within the disaster trilogy, although, as Franklin argues, this often amounts to little more than 'some vague pseudo-scientific theory, presented like a magician's patter'.[75] As Ballard has noted, however, even though the details themselves are often vague ('Accuracy', he states elsewhere, is the 'last refuge of the unimaginative'[76]), the '*scientific imagination* is … very, very important in [his] fiction'.[77] This imagination, he notes, is defined by amorality, detachment, and the meticulous dissection of the natural world—the 'core of science', Ballard says, 'is a shedding of all responsibility by the scientist who is just *looking* at a particular subject with a tendency to ignore the contingent links'.[78] It places science 'outside of time and space, and outside the social and human', on a universalising plane where all phenomena can be placed within its purview.[79] The process of crystallisation in *The Crystal World* literalises this impulse towards universalisation and totalisation inherent in scientific thought: it is not a natural process at all,

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[74] Ballard, *TCW*, p. 66
[75] Franklin, par. 5
[76] Ballard, 'WWIS', p. 117
[77] J.G. Ballard and Jeremy Lewis, 'An Interview with J.G. Ballard', *Mississippi Review*, vol. 20, no. 1/2, 1991, p. 35, my emphasis
[78] Ballard and Lewis, p. 28, emphasis in original
[79] Ballard and Lewis, p. 29

but rather an allegorical rendering of these very processes of scientific discourse. The novel depicts a process of literal objectification and petrification of the natural environment whose every element becomes rearticulated in the universal and fixed 'medium' of the crystal structure, symbolic of the sterile and detached language of the scientific imagination.

We can also read the scientific outline of the crystallisation phenomenon as a reflection of, in particular, the anti-humanist qualities of the scientific imagination. Attempting to account for the phenomenon, as quoted above, one character simply states that '*they*' have termed the phenomenon 'the Hubble Effect'.[80] In keeping with the sense of ambiguity and uncertainty that hangs over the events of the novel, the precise identity of 'they' is left unspecified. It can be assumed, however, that 'they' are the anonymous scientific experts whose descriptions of the world so often come—as we have seen in the preceding chapters—to assume priority over the world itself. 'They' are absent, anonymous, and ambiguous, reflecting the impersonal and rationalised systems and institutions of bureaucratic control coming increasingly to dominate western life in the twentieth century. These systems and institutions, as Marcuse remarks in *One-Dimensional Man* (1964), are 'constituted [into] a rationally organized bureaucracy, which is, however, invisible at its vital center', and which is characterised by 'inhumanity and injustice'.[81] For Marcuse, as for Adorno, Mumford, Ellul, Heidegger, and others (as we have seen), 'the relation between science and society' is one 'in which both move under the same logic and rationality of domination'.[82] Within such a technological structure, the human individual is conceived not as a free and responsible agent. Rather, the overarching bureaucratic system comes to usurp individual expression altogether, alienating the individual even from the products of her own thought: as Davies remarks, within such alienating structures, 'I do not think, I am thought. You do not speak, you are spoken'.[83]

It is significant, then, that *The Crystal World* concludes with its characters standing helpless before the crystallising forest, unable to undertake any meaningful action in the face

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[80] Ballard, *TCW*, p. 66, my emphasis
[81] Herbert Marcuse, *One-Dimensional Man: studies in the ideology of advanced industrial society*, 1964, Routledge, 2007, p. 74
[82] Marcuse, p. 158
[83] Tony Davies, *Humanism*, Routledge, 1997, p. 60

of the incomprehensible events taking place around them. Ultimately, human individuals within the novel are left unable to grasp even the meaning of the crystallising phenomenon: the incomprehensions and enigmas that confront Sanders as he attempts to understand the changes taking place around him dramatise the barriers to individual epistemological mastery over the world, given the enormous difficulty comprehending such rapid technological changes. All that is left for these characters to do is to witness the inexorable alteration of the natural world, destined inevitably to become part of it: this is what Sanders accepts when, at the close of the novel, he travels back into the crystallising forest to live 'in that transmogrified world'.[84]

If, then, as Rob Latham (paraphrasing Thomas Disch) has argued, Ballard's disaster novels can be read as 'prophetic visions of how an exploited nature might take revenge on its heedless exploiters', *The Crystal World* also dramatises the extent to which those processes of technological exploitation may turn back on humanity itself.[85] Ballard's novel can be read as a response to the anti-humanist tendencies of late twentieth-century life, which alienated the individual from any meaningful sense of social or cultural identity. This is understood in his work as an outcome of the intensification of bureaucracy and the accelerated advance of technological progress—these, in his view, threatened to swallow up both the natural world *and* humanity along with it.

So we can see that the anti-humanist tendencies of late twentieth-century western society form a key part of the context in which *The Crystal World* must be read. Ballard's characters are situated at a fundamental remove both from the society in which they live and from other human individuals, shut off from all meaningful avenues of social interaction or agency. Yet despite his recourse to what can fairly be described as a dystopian subject matter—the end of the world and all human life as we know it—it is by no means clear that Ballard's works should therefore be read as pessimistic warnings against the heedless utilisation of nature for human ends. Indeed, the disaster trilogy has been far more frequently noted for its distinctly *utopian*

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[84] Ballard, *TCW*, p. 167
[85] Rob Latham, 'Biotic Invasions: ecological imperialism in New Wave science fiction', *The Yearbook of English Studies*, vol. 37, no. 2, 2007, p. 111

qualities: Ballard's emphasis on the radical possibility of new psychologies (or, more precisely, of the return of primordial ones) as an outcome of the natural disaster means that the end of the world, as often as not, is understood as an affirmative moment of human growth or transformation. But Ballard's utopian transcendence in *The Crystal World*—the final of the disaster works—comes at a crucial cost: as we will now examine in more detail, such human transcendence requires the sacrifice of the natural world itself.

Given the generally apocalyptic tone of the disaster trilogy, these texts may not stand out as obvious examples of utopian fiction. Nevertheless, a number of critics have highlighted the utopian undertones of the trilogy. Wagar, for example, asserts that all of Ballard's disaster novels are really utopian texts in disguise:

> If 'utopia' is a place where all is well, a place of joy and perfection, then the psycho-physical landscapes of Ballard's fictions are manifestly such places. … His landscapes are heavens; or, rather, liminal worlds through which discerning individuals—and in some Ballardian scenarios, all humanity—must pass to earn salvation. … Escaping to a higher consciousness demands immersion in all being. Hence, in Ballard's transvaluation of the traditional Western wisdom, even dystopias are utopian.[86]

If 'immersion in all being' is a requirement for moving to a higher plane of consciousness, then this is only made possible in the disaster novels by the fact that 'all being'—that is, the spatial landscape within which Ballard's disasters are situated—is already all-too-human: the landscapes of Ballard's trilogy are reflections of, and are thereby shaped by, the inner psychological worlds of his characters. As noted by Wagar, Ballard's landscapes are 'metaphors for states of mind and soul, "psychic" or "spinal" landscape[s]'.[87] Gregory Stephenson, too, remarks that the adaptation of the earth in Ballard's trilogy discloses 'a pre-existent inner landscape', revealing 'a deep and potent image in the collective human psyche which may have the character of penance and retribution, or of paradise and transcendence'.[88] The emphasis is, I would argue, heavily placed on the latter of these two options, with each of Ballard's protagonists achieving a transcendence of sorts as a result of the natural catastrophe

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[86] Wagar, p. 54
[87] Wagar, p. 53
[88] Gregory Stephenson, *Out of the Night and into the Dream: a thematic study of the fiction of J.G. Ballard*, Greenwood Press, 1991, p. 62

taking place around them—in the course of each terrestrial catastrophe, the characters find themselves changed into 'a second Adam searching for the forgotten paradises of the reborn sun'.[89]

Ballard thus offers, we might say, a dystopic utopia, wherein the end of the human-made world functions as a mere guise for a much richer psychological rebirth of humanity. This rebirth takes place not merely on a mass level, but also and more fundamentally at the level of the individual. Virtually all of Ballard's texts focus heavily on the interactions between the individual self and the exterior landscape, and suggest a structure in which the physical setting of the novel becomes a metaphorical reflection of the psyche of the primary character. At one point, for example, Sanders, gazing on the glow being emitted from the bejewelled trees, is suddenly transported back to his youth, 'forgotten for nearly forty years', when 'everything seemed illuminated by that prismatic light described so exactly by Wordsworth in his recollections of childhood'.[90] The sudden turn towards the personal and private implied by these 'thousand images of childhood', consolidated by reference to the Romantic poet, emphasises the extent to which the Ballardian disaster must be understood as a private, as much as a global, event.[91]

This turn towards the specifically *psychological* effects of environmental change is of significant import in Ballard's trilogy: the primary focus of each novel is the transformation of the *internal* world of its individual characters as they struggle to adapt to their changed environments. Lorenz J. Firsching and R.M.P. conceptualise the action of the disaster novels as operating on three levels: the 'exterior', which encompasses the literal experience of the objective physical environment; the 'intermediatory' level, consisting of interpersonal relationships; and the 'interior', or 'psychic', level. The former two of these levels, Firsching and R.M.P. argue, are defined by an entropic movement from order towards chaos, as the environmental disaster around which the novel centres is 'correlated' with a slow dissolution of all interpersonal ties linking the central character to the others around him.[92] On the interior

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[89] Ballard, *TDW*, p. 175
[90] Ballard, *TCW*, p. 69
[91] Ballard, *TCW*, p. 69
[92] Firsching and R.M.P., p. 298

level, however, the move is in the opposite direction, 'from the confusion and alienation at the outset towards the appearance of a new psychic state, a "new psychology,"' as the character regresses to a more primitive psychological state.[93]

In *The Crystal World*, this regression takes the form of a move towards an ambiguous and fundamental unity with all matter: 'some ancestral paradise where the unity of time and space is the signature of every leaf and flower', and in which all humanity will one day 'become apostles of the prismatic sun'.[94] Each of Ballard's disaster works collapses familiar barriers between the human and the non-human, as culture and nature have become inextricably intertwined within each other. In each of these works, the fractious relationship of a technologically and industrially-driven humanity to nature is exposed as unsustainable: ultimately, either industry pushes nature into an unstable condition that sparks global catastrophe, or else the capitalist network itself breaks down when confronted by natural forces that have mutated into forms that science is unable to either comprehend or restrain. Nature in the disaster works is thus radically conceived neither as an enemy to be defeated nor a wholly Other realm to be transcended—rather, it becomes an indissoluble component of humanity's material and psychological make-up. Nature is both dystopic, bringing about the collapse of advanced human civilisation, and utopic, creating the possibility for new configurations of what it means to be human in a natural world. The argument may then be made that Ballard, by maintaining these opposing utopic and dystopic images of nature in tension, overcomes straightforward binaries between culture and nature, which have become inextricably entwined within each other. In their place, he instead gestures towards the possibility of a more dialectical reconciliation between the human and the non-human, and a more holistic attitude towards human/nature relations. In this manner, humanity's deep ontological connection to nature is revealed in such a way as to potentially overturn artificial human/non-human dichotomies.

This dynamic may be seen in the novel's conceptualisation of biological time—a recurring concern, as mentioned above, of the disaster trilogy as a whole. A frequent motif in *The Crystal World*, for example, is the 'polarization' of the light around Port Matarre, which

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[93] Firsching and R.M.P., p. 298
[94] Ballard, *TCW*, p. 83, 169

makes the area around the forest look unnaturally dark while the forest itself becomes dazzlingly bright. The phenomenon is linked to the crystals themselves, which appear to drain the light from the surrounding area, thereby creating a startling contrast between the glittering forest and its peculiar, shadowy penumbra. As one character comments, 'everything seems polarized … into black and white' around the crystallising forest, a splitting of the light that can only be 'reconciled'—that is, reversed or corrected—by entering the forest itself, whereupon light regains its customary hue.[95] Yet the impression is also given that this division is not in fact an objective phenomenon that is literally happening in the 'real' material world at all—rather, it is conceived as a psychological effect caused by a partial regression of the human mind through earlier stages of its evolutionary history as a result of the 'withdrawing' of time around the crystallising forest.[96] During the evolution of the human, as Sanders remarks, light was associated with 'the possibilities of life itself', while darkness signals danger, a 'fundamental distinction' that 'we inherit from the earliest living creatures … reinforced every day for hundreds of millions of years'.[97] The polarisation phenomenon, with its attendant symbolic connotations, is thus a psychological phenomenon arising from humanity's evolutionary history: as this evolutionary regression occurs, the human mind begins to perceive a sharper difference between light and dark stimulated by its return to an 'earlier' biological stage. In this way, human beings' epistemological grasp of the world—literally, their very ability to perceive such fundamental phenomena as light—is explicitly located within a biological and material, as opposed to intellectual or rational, ontology.

Humans, the novel suggests, have thus not transcended 'nature' at all, but are still deeply immersed in biological and evolutionary time. Yet this image of apparent ontological harmony between the human and the organic non-human world is troubled by the broader utopian connotations of the crystals themselves. As Elana Gomel and Stephen A. Woniger argue, the crystal has traditionally been associated with perfection, but also with a kind of *anti-organicism* that sets it in opposition to the vitality of the natural world. Surveying modernist

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[95] Ballard, *TCW*, p. 71
[96] Ballard, *TCW*, p. 136
[97] Ballard, *TCW*, p. 135

critiques of Romanticism, Gomel and Weniger identify a recurring image within modernist literature that characterises the Romantic (in the words of Wyndham Lewis) as something 'gaseous and nebulous', reliant on 'the bowels and the nerves'. [98] In contrast to the disorganisation and impermanence believed to characterise the physical and organic, the image of the crystal becomes linked within modernism to utopian sentiments. The modernist preoccupation with abstraction and geometrical aesthetics was conceived as a way of escaping 'from the chaos of temporal phenomena' through spatialisation, a trend which manifested in a preoccupation with transparency and crystallisation as symbols of power, strength, health, and sexuality—but also of totalitarianism.[99] Modernist architecture, meanwhile, often centred on an image of 'a new shining City of Glass', which would stand in perfected opposition to the 'messy vitality' of life—a trend which, Gomel and Weniger assert, has to some extent been realised in 'the epidemic of glass-walled structures in the mid- and late-twentieth century'.[100]

The emphasis in the symbol of the crystal is on erasing both time and the organic body, with all the unruly desires associated with embodied experience. As Gomel and Weniger note, the 'opposition between the dead beauty of the crystal and the messy vitality of the body underlies diverse Utopian dreams and dystopian nightmares', from Swift and Bellamy through Huxley and Forster right up to Ballard.[101] Ultimately, they argue, crystals throughout the century take on both utopian and dystopian qualities—yet always in opposition to the body and the natural processes of time. Accordingly, Gomel and Weniger interpret *The Crystal World* as an 'apocalypse of "crystallisation"', and Ballard's characters as 'long[ing] for the rest of this crystal paradise, in which there is no death because there is no life'.[102] By escaping from 'the pain of corporeal existence' by means of crystallisation, Gomel and Weniger argue, Ballard's characters show us that 'underlying the eschatological "crystal rest" is the fear of pain and the desire to escape the frailty of the body, which is ultimately achievable only in death'.[103]

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[98] Quoted in Gomel and Weniger, p. 67
[99] Gomel and Weniger, p. 67
[100] Gomel and Weniger, p. 80, 74, 81
[101] Gomel and Weniger, p. 74
[102] Gomel and Weniger, p. 83
[103] Gomel and Weniger, p. 83

Numerous other critics have noted this emphasis placed on escape from the biological body in the disaster works. Roger Luckhurst, for example, reviewing a number of critical examinations of Ballard, notes that a common theme to these analyses is 'the narrative of transcendence' to be found in each of the disaster novels. The trilogy, Luckhurst argues, comprises an attempt 'to shift from the "wrong" (literal) death to the "right" (metaphorical) death [as] Being-towards-death is replaced by Being-beyond-death'.[104] Ballard's characters, he goes on, come ultimately to embrace the disaster taking place around them, as they recognise in it the quality of transfiguration—rather than being a destructive force, they come to view the disaster as an opportunity to achieve some wholeness of being not otherwise available to them. Hence the novels depict 'the metaphorical transgression of the bounds of the bodily into an ultimate, ecstatic (re-)unification and (re-)integration', though what precisely is being re-unified and re-integrated is not always wholly clear.[105] Firsching and R.M.P. echo this notion of the transcendence of the body through temporal means. Leprosy in the novel (Sanders is a leprosy specialist, and several of the characters suffer from the condition), they argue, is figured as a symbol of alienation, including alienation from the self, in which the body comes to reside 'in a prolonged state of existence suspended between normal life and death'.[106]

The Crystal World, then, offers a depiction of an apocalypse rich with utopian imagery, yet founded on the anti-organicist and anti-corporeal image of a wholly crystal world. We are left, then, with a strangely ambiguous view of the novel as, on the one hand, an appeal against the forces of modernisation and bureaucracy in the post-war period and, on the other, as a utopian effort to overcome the ephemerality of the organic body and achieve some kind of psychic transcendence. This tension impacts on how the figure of the human in Ballard's works must be viewed. The human remains at the centre of Ballard's disaster trilogy—as Jonathan S. Taylor puts it, 'Ballard's goal is to create new myths of human transformation and, ultimately, transcendence'—right up to the moment at which the human as such ceases to exist.[107] In this

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[104] Roger Luckhurst, 'The Many Deaths of Science Fiction: a polemic', *Science Fiction Studies*, vol. 21, no. 1, 1994, p. 36

[105] Luckhurst, p. 36

[106] Firsching and R.M.P., p. 306

[107] Jonathan S. Taylor, 'Geographical Imaginings in the Work of J. G. Ballard', *Lost in Space:*

sense, we can indeed think of the novel as 'posthuman', insofar as it depicts, or at least gestures towards, the extinction of the human as we know it. But what is left over at the conclusion of the novel is not a vision of positive social reformation, but rather an escapist fantasy of individual bodily transcendence. The humans of Ballard's novels willingly succumb to the destructive forces around them, which, at least in the case of *The Crystal World*, imperil the natural world as well. After all, the first victims of the crystallising process are not humans but the animal inhabitants of the forest: the snakes and crocodiles whose 'blind eyes' become 'immense crystalline rubies'.[108] Alongside the trees and streams around them, these natural beings become 'frozen into grotesque postures' within the sprawling crystal forest—an image of helpless submission to the uncanny force of crystallisation at odds with the euphoric transformation experienced by the human characters.[109]

The reconciliation between human/non-human in *The Crystal World*, then, takes the form of a final prioritisation of the human *over* the natural world, whose destruction figures only as an inconsequential side effect of the human individual's attempts to achieve transcendence. Furthermore, by conceptualising this process of technologisation as a seemingly 'natural' (though clearly highly *un*natural) process of spontaneous crystallisation, the novel also succeeds in simultaneously relieving its human characters of all moral responsibility to act, whether positively or negatively, in relation to the disaster. Indeed, it is made clear that the process itself must be understood in terms that are fundamentally *a*moral: the breakdown of the 'intermediatory' level (as described by Firsching and R.M.P.), and the subsequent isolation of each character within his or her own individual 'psychic landscapes', implies also an end to the moral obligations binding those characters. As Sanders notes, there is little point in associating 'moral notions with light and dark' once these oppositions have been suppressed within the petrified forest.[110] Even the Church in which Sanders shelters as he tries to escape from the forest is described by its priest as having 'outlived its function', since God now could

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geographies of science fiction, edited by Rob Kitchin and James Kneale, Continuum, 2002, p. 93
[108] Ballard, *TCW*, p. 79
[109] Ballard, *TCW*, p. 83
[110] Ballard, *TCW*, p. 136

'be seen to exist in every leaf and flower'.[111] Significantly, these natural elements—the 'countless … birds, butterflies and insects, joining their cruciform haloes to the coronation of the forest', alongside the crocodiles, pythons, and even the trees themselves—are not given the choice of whether to accept or reject their immersion in the crystal lattice.[112] These options are available only to the human inhabitants of the forest, while nature is rendered helpless, devoid of agency and so ultimately denied those utopian possibilities, however vague, that the crystal forest has to offer its human inhabitants. The conclusion of *The Crystal World* must thus be read as an escape from the need to react in any meaningful manner to the apocalyptic or cataclysmic conditions of the late twentieth century. The novel is more entranced by the pleasures of solipsistic reflection—even to the point of masochistic self-destruction—than it is with the struggle to transcend the harmful dualisms of western thought.

Hence the ambiguous ending of the novel—in which Sanders comes to realise that 'there is an immense reward to be found in that frozen forest', and moves to finally become part of the bejewelled universe—may be understood as an act of allegorical surrender to the processes of technological enframing of the late twentieth century.[113] In turn, this relinquishing of natural time to technological space symbolises also a surrender to the compressed, homogenous and totalising nature of post-industrial time and space. The characters in *The Crystal World* ultimately embrace the loss of time in the crystallising forest as inevitable, and celebrate the loss of nature, too, as a necessary sacrifice to achieve individual utopian transcendence. It is, Sanders writes, 'the gift of immortality, … a direct consequence of the surrender of each of us of our own physical and temporal identities'.[114] This 'gift', however, comes at the cost both of the natural world and the human itself. We are left, then, with the post-human in quite a literal sense—to paraphrase Mark Fisher's aphorism that 'it is easier to imagine the end of the world than to imagine the end of capitalism', in *The Crystal World* it is easier for Ballard to imagine the end of (western) humanity itself than to imagine the end of

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[111] Ballard, *TCW*, p. 162
[112] Ballard, *TCW*, p. 162
[113] Ballard, *TCW*, p. 169
[114] Ballard, *TCW*, p. 169

the structures of technological rationality with which it had surrounded itself in the late twentieth century.[115]

Embedded identity and ontological parity in Le Guin's *The Dispossessed*

We turn now to Le Guin, one of the most critically acclaimed SF writers of the twentieth century, and one of a select few whose works have received sustained attention in the wider literary and academic fields. (One indication of Le Guin's status within wider academic circles is that the 1987 collection of essays published on her 1969 novel and best-known work, *The Left Hand of Darkness*, was edited by Harold Bloom.) Her literary value had been recognised much earlier within genre criticism: in 1975, *Science Fiction Studies* devoted its second ever special issue to essays examining Le Guin's works (the first having been devoted to Dick). In his introduction to this issue, Darko Suvin outlines some of the major literary concerns of Le Guin's fiction. As he remarks, she 'writes centripetally, in a narrowing spiral (say of a falcon circling to a swoop) delineating ever more precisely the same object'.[116] Certainly, Le Guin's novels are highly concerned with exploring and elaborating upon recurring issues—isolation and communion, departure and return, memory and forgiveness. Le Guin's fiction is often anthropological in nature (her father was an anthropology professor), informed by ideas derived, she has stated, from 'social science, psychology, anthropology [and] history'. [117] An anthropological impulse also informs the structure of many of her stories, which often centre on 'anthropologist-heroes' (to borrow Latham's term) who arrive on unfamiliar planets and must learn to navigate their strange new environments.[118] This navigation is both literal and figurative: long voyages are a recurrent feature of Le Guin's works, serving as symbolic dramatisations of characters' inner journeys from youth to adulthood, ignorance to

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[115] Mark Fisher, *Capitalist Realism: is there no alternative?* Zero Books, 2009, p. 2. Fisher in turn attributes this phrase to both Fredric Jameson and Slavoj Žižek, although he does not provide a citation for this.

[116] Darko Suvin, 'Introduction: The Science Fiction of Ursula K. Le Guin' [henceforth 'Introduction'], *Science Fiction Studies*, vol. 2, no. 3, 1975, p. 203

[117] Ursula K. Le Guin, quoted in Keith N. Hull, 'What Is Human? Ursula LeGuin *[sic]* and Science Fiction's Great Theme', *Modern Fiction Studies*, vol. 32, no. 1, 1986, p. 69

[118] Latham, p. 117

enlightenment, and so on, while the requirement to negotiate alien societies and individuals eventually forces these characters to question their own basic preconceptions, beliefs, and ideas.

In an essay published in 1996, Le Guin outlines this approach to story-telling in more detail. Most conventional stories, she remarks, propagate the myth of 'the Ascent of Man as Hero' at the expense of other, equally significant aspects of culture and history.[119] To illustrate this point, she employs the analogy of the 'hunter-gatherer', the archetypal early human figure. Early cave paintings, she argues, tend mostly to depict battles between human hunters and a host of wild beasts, whereas in fact the majority of early individuals, whose stories are *not* depicted on the cave walls, were probably gatherers. The cave paintings, she goes on, thus distort our perceptions of early human life: the demand for action, progression, and resolution in story-telling means that, 'Before you know it, the men and women in the wild-oat patch and their kids and the skills of the makers and the thoughts of the thoughtful … have all been pressed into service in the tale of the Hero'—that is, the hunter.[120] Expanding on this analogy, Le Guin argues that much popular literature, with its tales of 'Heroes' and adventure, has mirrored the cave paintings in this respect. Against such distortions, she insists that the 'proper shape of the narrative' should not be that of an 'arrow or spear, starting *here* and going straight *there* and THOK! hitting its mark', but rather that of a 'great heavy sack of stuff' such as gatherers would have used—a 'carrier bag full of wimps and klutzes'.[121] Whatever its merits as an account of literary history, Le Guin's own focus on the gradual development of theme and character—her recurring 'delineation' of the 'same object', as Suvin puts it—demonstrates this shape in action: Le Guin's works eschew fast-paced narratives in favour of more considered efforts at world-building.

Within the context of SF, this means a shift in the emphasis of SF narratives from 'the linear, progressive, Time's-(killing)-Arrow mode of the Techno-Heroic' to more considered works that attempt to detail the ambiguities, inconsistencies, intricacies, partialities, and dead

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[119] Ursula K. Le Guin, 'The Carrier Bag Theory of Fiction' [henceforth 'Carrier'], *The Ecocriticism Reader: landmarks in literary ecology*, edited by Harold Fromm and Cherryl Glotfelty, University of Georgia Press, 1996, p. 151

[120] Le Guin, 'Carrier', p. 150

[121] Le Guin, 'Carrier', pp. 152-3

ends of social and technological change.[122] Le Guin became familiar with SF from an early age: growing up in the 1930s and 1940s, she read works by Lord Dunsany, an influential Anglo-Irish writer of fantasy and SF from the early twentieth century, and also sought out the 'trashiest magazines' of American SF she could find.[123] Like Clarke, Le Guin's interest in speculative fiction was informed by two distinct SF traditions—yet, unlike Clarke, the stories of 'hardware and soldiers' contained in the American SF magazines eventually proved tiresome for her. Le Guin's own SF, which she began publishing in the early 1960s, demonstrates a more explicit repudiation of the imperialist tone of much earlier American hard SF than is found in the mystical humanism of Clarke's fiction.

This repudiation is evident in many of her works. In *The Word for World Is Forest* (1972), for example, Le Guin depicts an attempted imperial takeover of 'Athshe', a forest planet, by an invading human force, who begin systematically felling and exporting trees to an ecologically ruined Earth against the wishes of the native forest-dwelling 'Athshenians'. The novel inverses the humanist chauvinism that we have previously detected in Conan Doyle's *The Lost World* and Smith's *Skylark* series. In these works, as we saw, certain moral and intellectual qualities are promoted as essential and universal human traits, and are correspondingly deployed to classify certain kinds of beings as 'less than human'. In *The Word for World Is Forest*, the same structure is found—but this time it is earthly humanity who ironically finds itself the subject of moral declassification by another race. The Athshenians deploy their own understanding of what it means to be 'human', based not on technological or intellectual capacities, but on qualities of empathy, compassion, and communion with nature. They thus conclude that the 'Terrans' (that is, earthly humanity)—who have killed or enslaved innumerable Athshenians, taking their pacifism and stoicism as evidence of their 'lazy', 'dumb' and 'treacherous' natures, and systematically destroyed many of the forests of Athshe—cannot be 'men', or '[if] they are men, they are evil men'.[124] For the natives of Athshe, it is they

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[122] Le Guin, 'Carrier', p. 153

[123] Ursula K. Le Guin, 'A Citizen of Mondath', *The Language of the Night: essays on fantasy and science fiction* [henceforth *LN*], edited by Susan Wood, Perigree Books, 1982, pp. 25-27

[124] Ursula K. Le Guin, *The Word for World Is Forest*, 1972, Panther Books, 1980, pp. 17-18, 41

themselves who are clearly the more 'human' of the two races. *The Word for World Is Forest* was written explicitly in response to the Vietnam War, and demonstrates some key recurring tropes of Le Guin's fiction: anti-colonialism, encounters (violent or otherwise) between diverging cultures, and the possibility for the constructive union of—as opposed to destructive conflict between—opposing worldviews, demonstrated by the deep friendship that develops between the Athshenian Selver and Terran Lyubov.

These thematics are also evident in *The Dispossessed*. First published in 1974, *The Dispossessed* (subtitled *An Ambiguous Utopia*) forms part of Le Guin's 'Hainish cycle', a series of novels and short stories set in a shared universe in which interstellar travel has become commonplace.[125] Each work in the Hainish cycle is independent of the others, yet each also forms part of an overarching history chronicling the gradual establishment of an interstellar confederacy called the 'League of All Worlds', later renamed the 'Ekumen'. The League was founded by the 'Hain', an ancient human race, who train and dispatch ambassadors and mentors to other worlds in order to expand the membership and shared knowledge of the League. Key to the success of the League, and central to the plot of *The Dispossessed*, is the 'ansible', a device capable of instantaneous communication across vast distances. Before the creation of the ansible, messages transmitted between worlds would take years, decades, or even centuries to span the light-years that separated planets—the ansible instead allows the many worlds of the League to remain in instant communication with each other. Like Asimov's *Foundation*, most races depicted in the Hainish cycle are humanoid in nature: it is explained that, in the far-distant past, expeditions from Hain landed on and colonised the other planets of the galaxy, including Earth, making Hain the original homeworld of humanity.

Chronologically, *The Dispossessed* is the earliest work in the Hainish cycle. The story takes place on the planets of Urras and Anarres, both in orbit around the star Tau Ceti. Urras and Anarres are twinned moon-planets—that is, each appears as a moon in the sky of the other—yet the political structures of the two planets are radically different. Urras reflects the

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[125] The term 'Hainish Cycle' is used by fans and critics to describe these works, but has been contested by Le Guin herself, who has written that there are only 'extremely murky' connections between her works. See Ursula K. Le Guin, 'FAQ', 2007, 3rd question, web, *Ursula K. Le Guin*, www.ursulakleguin.com/FAQ.html, accessed September 2017.

political shape of Cold War-era Earth. The planet contains two global superpowers—the capitalist 'A-Io' and communist 'Thu'—who, during the course of the novel, initiate an ideological proxy war with one another in the underdeveloped nation of 'Benbili' (a clear allusion to Vietnam and Korea). Anarres, meanwhile—the 'ambiguous utopia' of the subtitle—is organised on the basis of an egalitarian anarchist ideology laid down centuries before by 'Odo', a legendary revolutionary figure. Its citizens reject such concepts as centralised government (there is a central administration, but it ostensibly does not use force of any kind against its citizens), private property (individuals sleep in shared dorms and eat in communal halls), and money.

The narrative of *The Dispossessed* centres on Shevek, a temporal physicist from Anarres, as he attempts to develop a new 'unified theory of Time'.[126] Shevek is a central figure in the Hainish cycle: it is his ground-breaking research into the nature of time that enables the development of the 'ansible', the communications device that underpins the formation of the League. The novel alternates between two separate timelines centred on Shevek: one depicting his childhood and maturation, as well as his growing disillusionment with the corruption beginning to seep into Anarresti society; and the other following Shevek as he departs from Anarres altogether, travelling to Urras in order to complete his scientific work. Much of the novel is taken up with Shevek's interactions with this (to him) alien world—yet Le Guin is also concerned with painting a complex picture of a functioning anarchist society and its shaping influence on the personal and political lives of her characters. Hence much of the text also examines the social and political structures of Anarres, and the complexities of anarchism as a political model.

The Dispossessed is described by Moylan as 'perhaps the best known and the most popular of the critical utopias published in the 1970s'.[127] Indeed, of all the works examined in this study, Le Guin's novel is that which most thoroughly interrogates the concept of utopia, demonstrating what, for Suvin, is Le Guin's 'major goal' in writing SF: 'the quest for, and

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[126] Ursula K. Le Guin, *The Dispossessed* [henceforth *TD*], 1974, Panther Books, 1976, p. 99
[127] Moylan, p. 87

indeed … the first sketching of, a new collectivist system'.[128] The subtitle of the novel highlights its critical utopian nature: Le Guin's concern lies not with the struggle to *achieve* utopia, as in London's *The Iron Heel*, nor with imagining a 'perfect' and static utopian society, as in Bellamy's *Looking Backward*, but rather with the ambiguities and inconsistencies that arise in the historical evolution of utopia—the actual operational realities of the utopian project, narrated from the perspective of a single individual. The flawed and ever-shifting anarchist society of Anarres is a far cry from London's idealised 'Brotherhood of Man' or Bellamy's twenty-first-century Boston. By emphasising the ever-present threat of ideological collapse and ecological ruin (owing to Anarres' arid climate), Le Guin's world more closely resembles what Wells calls a 'kinetic utopia'—a flexible vision of 'hopeful' change that recognises the 'forces of unrest and disorder that inhere in things'.[129]

Le Guin's novel thus forms an important part of the new wave of American SF in the 1960s and 1970s that sought, as Fitting remarks, to '[break] through the apathy, complacency, and ideological self-deception of US society'—it is one of a number of 'works in which the original recognition of the role of science and reason in human emancipation are reaffirmed'.[130] The precise nature of this role of science and reason is described by Le Guin herself in her 1982 essay, 'A Non-Euclidean View of California as a Cold Place to Be'. In this essay, Le Guin draws a distinction between 'yang' and 'yin' variants of utopia. Yang utopias are described as '[bright], dry, clear, strong, firm, active, aggressive, lineal, progressive, creative, expanding, advancing and hot'.[131] Such worlds, Le Guin argues, stem from a 'euclidean', 'European', and 'masculinist' mindset, and so could be said to encompass utopias from Plato through Bellamy's socialist Boston all the way up to Asimov's Foundation.[132] Yin utopias, conversely, 'would be dark, wet, obscure, weak, yielding, passive, participatory, circular, cyclical, peaceful, nurturant, retreating, contracting, and cold'—in other words, 'non-euclidean, non-European, non-

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[128] Suvin, 'Introduction', p. 203

[129] H.G. Wells, *A Modern Utopia*, 1904, *The First Men in the Moon & A Modern Utopia*, Wordsworth Classics, 2017, p. 207

[130] Fitting, 'The Modern Anglo-American SF Novel', p. 72

[131] Ursula K. Le Guin, 'A Non-Euclidean View of California as a Cold Place to Be' [henceforth 'NEV'], *Dancing at the Edge of the World*, Grove Press, 1989, p. 90

[132] Le Guin, 'NEV', p. 88

masculinist' utopias that move the utopian project beyond both technocratic imperialism and technological determinism.[133] This type of utopia, Le Guin suggests, may depart altogether from the notion of futurological progression, adhering instead to a temporal structure of 'rhythmic recurrence'—a sort of cyclical movement between past and future, one that returns always to the basic fact of existence in the present moment—in contrast to the relentless futurist outlook of yang utopias.[134] Progress within yin utopias, in other words, is not to be conceived as constant forward motion, but instead as eternal return, encapsulated in the flow of 'biological rhythm'.[135]

Given this preoccupation with seeking alternatives to the traditional western narrative of rational progress, we might expect *The Dispossessed* to explicitly repudiate exploitative technocratic principles, or any sense of the chauvinist or rationalistic humanism that has marked post-Enlightenment thought. For some critics, however, the question of how to categorise *The Dispossessed*—whether as a yang or yin utopia—remains unclear. Jim Jose, for example, notes that, despite Le Guin's criticisms of 'yang' technocratic utopias, the narrative of *The Dispossessed* 'is dominated by Shevek, a man imbued with euclidean reason and a European bias towards the promise of technology and science'.[136] Far from diverging from the dominant narrative of rational humanism, Jose argues, '*The Dispossessed* is very much in the euclidean, European, and masculine mould'.[137] Moylan, meanwhile, argues that Shevek's development of the 'unified theory of Time', and the subsequent creation of the 'instantaneous communication device' crucial to the formation of the League of All Worlds, cannot be idealistically abstracted from the political complexities of the novel, and particularly from the capitalist economic relations that dominate A-Io, the Urrasti nation where Shevek travels to continue his research into time. The 'ansible' (as the device is later known), and by extension the physical theories that underpin it, represent for Moylan simply 'a useful new product to

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[133] Le Guin, 'NEV', p. 90
[134] Le Guin, 'NEV', p. 90
[135] Le Guin, 'NEV', p. 91, 92
[136] Jim Jose, 'Reflections on the Politics of Le Guin's Narrative Shifts', *Science Fiction Studies*, vol. 18, no. 2, 1991, p. 190
[137] Jose, p. 190

benefit the hierarchy, the bureaucratic leadership of all the known worlds who can now set up a meta-bureaucracy of centralized power for all the universe'.[138] Far from repudiating the technoscientific Empires common to SF in the mid-century, then, Moylan's analysis would suggest that *The Dispossessed* is committed to generating the very tool required by capitalism for their development.

This view of the League as a meta-bureaucracy, however, does not do justice to the complexity of Le Guin's Hainish works. Le Guin is concerned not with depicting the formation of a universal techno-imperialist complex (as in Asimov's *Foundation*, for example), but rather with describing, and exploring the interactions between, a host of cultures, peoples and individuals from often highly contrasting worlds. One Hainish work, *Planet of Exile* (1966), for example, focuses on a League expedition to the planet 'Werel', where a group of Terran anthropologists are making a study of the local culture. The novel explores questions of cultural relativism: although the two main factions, the native 'Tevarans' and foreign Terrans, are both humanoid, descended from the same Hainish settlers, each faction adheres rigidly to a chauvinistic view of their own culture as more fundamentally or truly 'human' than the other. Hence, for the Terrans, the Tevarans are not humans but merely 'hilfs'—'highly intelligent life-forms'—while, to the Tevarans, the Terrans are not 'men' but alien 'farborns'. 'Human' (or 'man', in the terminology often used by Le Guin in her early works)[139] in this novel thus

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[138] Moylan, p. 112

[139] Le Guin has at times been criticised for her use of such terminology, as well as for the lack of overt feminist engagement in her fiction and her adherence to what some writers have described as a traditional masculine viewpoint in her novels. Joanna Russ, for example, in the afterword to her feminist story, 'When It Changed' (1972), remarks that she was partially inspired to write the story after reading Le Guin's *The Left Hand of Darkness*, which, although it depicts androgynous beings theoretically capable of acquiring female or male sexual characteristics, consistently emphasises a male point of view, using male pronouns (par. 6). Certainly, it is true that Le Guin's early major novels are dominated by male protagonists, with the notable exception of *The Tombs of Atuan* (1970), the second entry in the *Earthsea* series. Le Guin's response to these criticisms has developed over time: in a 1976 essay, she remarks that 'He is the generic pronoun, damn it, in English' and expresses her dislike for invented pronouns—yet, in her 1989 response on that same essay, she retreats from this position and acknowledges that her use of the male pronoun had indeed 'shaped, directed, controlled [her] own thinking' while writing the novel (p. 15). Nevertheless, Le Guin's lack of explicit feminist engagement is partially counterbalanced by her rejection of 'masculine' narratives and linguistic forms as outlined in this discussion, as well as her later exploration of explicit feminist themes in works such as *Always Coming Home* (1985) and *Four Ways to Forgiveness*

implies a qualitative as well as descriptive value: as in *The Word for World Is Forest*, to be thought of as 'human' or 'non-human' does not necessarily indicate anything regarding the biological status of the organism under consideration, but rather reveals the cultural biases and preconceptions of the individual doing the thinking.

The Tevarans and the Terrans eventually find themselves forced to band together in order to survive an invasion by the 'Gaal', a marauding and migratory people. The imperative of cooperation quickly breaks down both the scientific detachment of the Terrans and the xenophobia of the Tevarans, as each comes increasingly to recognise themselves in the other. The novel finally ends on a note of ambiguous optimism: Agat, the Terran protagonist, stands amid the ruin wrought on Tevaran society by the defeated marauders, and realises that 'This was his fort, his city, his world; these were his people. He was no exile here'.[140] Le Guin here demonstrates what might be called a 'yin' resolution to her narrative. Neither Terrans nor Tevarans can exist without the cooperation of the other—the relationship between the cultures moves from inner-directed self-preservation towards outer-directed communion, and an embrace of the unknown or alien Other that seeks common ground without flattening cultural differences.

This yin pattern is repeated throughout Le Guin's works. The planet Gethen, for example, depicted in *The Left Hand of Darkness* (1969) and 'Winter's King' (1969), features an androgynous humanoid race that exhibits some distinctly non-'human' qualities: they undergo *kemmer*—periodic cycles of sexual fertility during which they temporarily develop either male or female sexual organs—while their social interactions are underpinned by *shifgrethor*, a subtle and ambiguous set of social protocols unknown, and perhaps unknowable, to non-Gethenians. Despite these alien qualities, however, League ambassador Genly Ai is nevertheless able to establish a deep bond with Estraven, a native of Gethen. The extent of their friendship is symbolised by their developing capacity for 'mindspeech', a form of telepathy.

(1995). See Le Guin, 'Is Gender Necessary? Redux', 1976/1989, *Dancing at the Edge of the World: thoughts on words, women, places* [henceforth *DEW*], Grove Press, 1989, pp. 7-16, and Joanna Russ, 'When It Changed: Afterword', *ADV*.
[140] Ursula K. Le Guin, *Planet of Exile*, 1967, *Three Hainish Novels* [henceforth *3HN*], Ace Books, n.d., p. 212

Even this telepathic connection, however, cannot fully bridge the cultural distance between Ai and Estraven: the bond produced by mindspeech is an 'austere and obscure one, not so much admitting further light … as showing the extent of the darkness'.[141] Le Guin's conception of telepathy thus figures not as the universal communicative medium depicted in *Skylark* or *The City and the Stars*, but conversely as a mode of indexing the cultural distance that inevitably arises between humans from radically different worlds. Mindspeech is first introduced in another novel, *Rocannon's World* (1966), in which Le Guin explicitly emphasises the role of such cultural conditioning in identity formation. In this novel, Rocannon, an anthropologist dispatched by the League to study the culture of the planet 'Fomelhaut II', uncovers a planned attack on the League by a rogue faction. To prevent this attack, Rocannon immerses himself within the culture of Fomelhaut II, thus gaining the local power of mindspeech. Yet such knowledge comes at a cost: in the process of gaining a new set of cultural coordinates, Rocannon necessarily sacrifices his old ones, and with them his former cultural identity: 'Who are my people? I am not who I was. I am changed'.[142]

Le Guin's narratives are thus multifaceted and morally complex: the League does not represent any straightforward telos of human progress, while her works stress ambiguous and open-ended yin—as opposed to straightforward yang—resolutions to narrative conflict. In this same vein, *The Dispossessed* can be regarded as an attempt to portray a yin utopia, although one in which, as Le Guin herself writes, the 'excess yang shows'.[143] Le Guin's conception of technology attempts to puncture the widespread SF view of technological development as the dominant shaping force in human society. In contrast to the earlier works of Golden Age SF—in which, as we saw in the last chapter, technology replaces politics, economics, or any other phenomenon as the fundamental driver of social change in society—Le Guin insists that 'to count on technological advance for *anything but* technological advance is a mistake'.[144] Any concept of progress, she argues, that views the evolution of societies as an 'invasive, self-replicating, mechanical forward drive' can only result in disaster, since within such a view

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[141] Ursula L. Le Guin, *The Left Hand of Darkness*, 1969, Panther Books, 1979, p. 172
[142] Le Guin, *Rocannon's World*, 1966, *3HN*, p. 111
[143] Le Guin, 'NEV', p. 93
[144] Le Guin, 'NEV', p. 96, emphasis in original

humanity itself is transformed into a 'virus' that helplessly consumes both itself and the environment around it.[145]

Hence Le Guin's depiction of technology in *The Dispossessed* demonstrates a desire to overcome the fatalistic technological determinism of earlier SF. Her vision of Anarresti society is by no means *anti*-technological, since 'technology is an essential element of all cultures'. But it is for the most part assigned to the background of her text, playing a secondary role to the development of characters and the elaboration of the social and ideological complexities of both Anarres and Urras. The original settlers of Anarres, as described in the text, 'knew that their anarchism was the product of a very high civilisation, of a complex diversified culture, of a stable economy and a highly industrialized technology'.[146] Hence they refused to 'regress to a pre-urban, pre-technological tribalism', but instead concentrated on building roads and exchanging local resources.[147] In this portrayal of Anarres as both committed to yet cautious of technological development, as Laurence Davis argues, Le Guin displays 'an unusually nuanced attitude toward technology', offering a 'realistic utopian vision of a low technology, organically evolving society at peace with itself and its environment'.[148] Even the most prominent technological concern of the novel—Shevek's proof of the unified theory of time, allowing for the creation of a communications device capable of bypassing the speed of light— is conceptualised in terms derived as much from metaphysics as from mathematics. After many frustrated attempts to prove the validity of his temporal hypotheses, Shevek realises that such proof is in fact an enigma: the hypotheses lay in 'the region of the unprovable', and so the 'certainty' of their validity for which he has been striving will never in fact be forthcoming.[149] Since their truth can never be actually demonstrated, Shevek is instead forced, in a singularly nonrationalist manner, to begin 'simply assuming the validity' of his hypotheses, after which

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[145] Le Guin, 'NEV', p. 96
[146] Le Guin, *TD*, p. 85
[147] Le Guin, *TD*, p. 85
[148] Laurence Davis, 'The Dynamic and Revolutionary Utopia of Ursula K. Le Guin', *The New Utopian Politics of Ursula K. Le Guin's* The Dispossessed [henceforth *NUP*], edited by Laurence Davis and Peter Stillman, Lexington Books, 2005, p. 17, 18
[149] Le Guin, *TD*, p. 233

his research begins suddenly to produce results.[150] His scientific breakthrough in this way becomes a matter of faith as much as reason, a demonstration of the limits of human epistemological penetration into the nature of the material world.

In a broader sense, Shevek realises that the objective and abstract quality of scientific investigation encourages a false separation of rational abstractions *about* the world from material and ethical practice *within* the world. To demonstrate the absurdity of this divide, Shevek refers repeatedly to an analogy concerning a rock thrown at a tree. In theoretical terms, the thrown rock can never reach the tree since, at any given moment, 'there's always half of the way left to go' before the distance between rock and tree can be traversed (a reformulation of the 'arrow paradox' devised by the Greek philosopher Zeno).[151] In material terms, however, this statement is clearly nonsensical: 'After all, the rock does hit the tree'.[152] The scientific theorisation and the material reality of the scenario are thus clearly at odds with one another. Furthermore, although 'a scientist can pretend that his work isn't himself, it's merely the impersonal Truth', in reality this distinction is contrived, since an individual's understanding of the world—their understanding of 'Truth'—necessarily shapes the manner in which that individual interacts with the world.[153] Hence, for example, Shevek insists that the theoretical study of time is not only a scientific but also an ethical matter, since it enables us to see 'the difference between *now* and *not now*'—in other words, to see the distinction between our actions in the present and their consequences in the future—and, having seen this difference, to 'try to make the best of it'.[154] Theoretical physics is thus in accord with ethical philosophy in entreating the individual to 'act responsibly'.[155]

Not merely scientific discourse but all of language is understood by Le Guin as involving ethical consideration. In an address delivered in 1986, she discusses the power of language to shape worlds and world-views. As in her delineation of yang and yin utopias

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[150] Le Guin, *TD*, p. 233
[151] Le Guin, *TD*, p. 31
[152] Le Guin, *TD*, p. 190
[153] Le Guin, *TD*, p. 274
[154] Le Guin, *TD*, p. 190, emphasis in original
[155] Le Guin, *TD*, p. 190

outlined above, Le Guin divides language into two opposing types: 'father tongue' and 'mother tongue'.[156] Father tongue is the language of 'the expository, and particularly the scientific discourse'.[157] It is, Le Guin argues, that form of discourse which separates the world into 'subject/object, self/other, mind/body, dominant/submissive, active/passive, Man/Nature, man/woman, and so on'.[158] Mother tongue, conversely, is 'language not as mere communication but as relation, relationship. It connects'.[159] In other words, whereas father tongue consists of language that separates, systematises, and rationalises, mother tongue instead relates, permeates, and interconnects.

Within Le Guin's works, as might be expected, the emphasis is placed on mother over father tongues, with language functioning as an expression of localised and partial, rather than universal and totalising, subject positions. Her series of fantasy works set in the land of 'Earthsea', for example, depict a form of magic centred on 'Naming'—literally, the power to call a thing by its 'true name' (as distinct from its everyday 'use-name') so as to control it. The true name of a thing corresponds to its being, and hence the gap between signifier and signified, in the 'Old Speech' of magic, is closed: in Earthsea, to know the true name of a thing is to grasp the thing in and of itself. Yet magic does not thereby constitute a master discourse in the *Earthsea* texts. Names in Earthsea are so numerous that 'no man could learn them all'—a wizard 'can control only what is near him, what he can name exactly and wholly'.[160] Furthermore, the power to control a thing by using its true name is dependent on place: 'the fish of the Open Sea', for example, 'do not know their own names and pay no heed to magic', while the ability to name things also diminishes the further a wizard moves from the central lands of Earthsea.[161] Magic—here a form of language—is thus conceived in the *Earthsea* texts in local, rather than universal, terms: its potency is rooted to place, and so the possibility of a

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[156] See Ursula K. Le Guin, 'Bryan Mayr Commencement Address' [henceforth 'BMCA'], 1986, *DEW*, pp. 147-160
[157] Le Guin, 'BMCA', p. 148
[158] Le Guin, 'BMCA', p. 149
[159] Le Guin, 'BMCA', p. 149
[160] Ursula K. Le Guin, *A Wizard of Earthsea* [henceforth *WE*], 1968, *The Earthsea Quartet*, Penguin Books, 1993, p. 51
[161] Le Guin, *WE*, p. 166

universal code by which to name and control the world is therefore precluded. Magic in the *Earthsea* series thus functions as the inverse to the universalist pretensions of scientific discourse: where the latter strives to be universal and totalising, the former is necessarily localised and partial.

Such distinctions are also of pivotal importance in *The Dispossessed*. Shevek's temporal theories represent a form of linguistic power: since the theory underpins the development of the ansible, the instantaneous communications device, the political body that gains access to the theory also gains absolute control of interstellar communications. The theory is thus highly sought after by numerous political bodies in the novel, including the governments of A-Io, Thu, and even 'Terra' (the name given to Earth, by this time an ecologically devastated planet). Shevek's reluctance to gift such a powerful political tool to any one nation leads him to disperse the theory among all the known worlds, thus removing the possibility of it being used as a political weapon by any one ideological faction. Shevek's move here can be interpreted as striking a symbolic blow against the 'father tongue': by undermining the possibility of the autocratic regulation of communication by whatever nation wields the theory, Shevek instead opens up the possibility for 'relation'—a form of communication which 'goes two ways, many ways, an exchange'.[162]

Hence, as Lewis Call notes, the ansible creates the possibility of 'a community of worlds linked together in radically egalitarian, non-hierarchical fashion'.[163] Of course, this apparently democratising move raises some difficulties of its own. With the creation of the ansible, and the subsequent formation of a universal confederacy of planets, the individual 'mother tongues' of each world, their idiosyncratic linguistic dialects, would come under threat by the necessary adoption of a universal language required for true interstellar communication. This threat is minimised, however, by Le Guin's emphasis on the implicit shaping qualities of language itself, its cultural conditioning of thought patterns, which precludes the possibility of a truly 'universal' human mind to complement a universal dialect. As in the *Earthsea* texts,

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[162] Le Guin, 'BMCA', p. 149
[163] Lewis Call, 'Postmodern Anarchism in the Novels of Ursula K. Le Guin', *SubStance*, vol. 36, no. 2, 2007, 103

language in *The Dispossessed* is rooted always in a specific place. Its role in determining the thoughts, and indeed the range of possible thoughts, of the individual mind is emphasised throughout the novel, demonstrated, for example, by the syntactical structures of Pravic, the Anarresti language. In Pravic, possession is minimised: in place of 'my hand hurts', individuals say 'the hand hurts me', while 'This one is mine and that's yours' becomes 'I use this one and you use that'.[164] Hence, for example, Shevek repeatedly highlights his discomfort in referring to 'his' rooms on Urras, having no prior experience with personal pronouns. In this manner, the capacity of language to shape the mindset of social individuals becomes clear.

We arrive, then, at a view of language not as a mode of objectively mastering the world, but rather as the limit of that mastery: language, in describing the world, also shapes the human individual's—necessarily partial—perceptions of it. It follows that language itself disallows the possibility of a 'universal' human figure. Le Guin's fiction refuses abstractions in favour of localised 'embedded' identities, and thus anticipates a key idea of posthumanist thought: the rejection of universal conceptions of humanity in favour of such 'embedded' subject positions. As Braidotti remarks, 'universalism … claims to a subject position that allegedly transcends spatio-temporal and geo-political specificities', and which thus stresses 'dis-embodied and 'dis-embedded, i.e., abstract' identities.[165] Le Guin's repeated insistence on the conditioning effects of culture and language, together with her depiction of mother tongues and yin utopias, comprises, to use Braidotti's terms, 'a break from both universalism and dualism': her works gesture towards what Braidotti would describe as a kind of '*social and cultural embeddedness*'.[166] In this latter formation, identity is contingent on the material conditions and local times and spaces of the society, culture or community to which the individual belongs. It is, in effect, a more sophisticated expression of the notion, outlined in the introduction, that

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[164] Le Guin, *TD*, p. 55
[165] Rosi Braidotti, 'Interview with Rosi Braidotti' [henceforth 'Interview'], *New Materialism: interviews and cartographies*, edited by Rick Dolphijn and Iris van der Tuin, Open Humanities Press, 2012, p. 22
[166] Braidotti, 'Interview', p. 22, 33, emphasis in original

mind is not separate from but *is* matter—that 'ideas are embedded in practice', as Haraway puts it, while material practice is shaped by ideas and preconceptions.[167]

So to what extent can we regard Le Guin's novel as representing a real break with the conventional notions of 'true' human selfhood—in other words, post-humans? On the one hand, her fiction focuses overwhelmingly on humans at the expense of radically non-human beings—as noted above, nearly every race in the League of All Worlds is humanoid (with some notable exceptions, such as the sentient plant network depicted in her 1971 short story, 'Vaster Than Empires and More Slow'). Furthermore, in contrast to Lewis' assessment above, there *is* an implied hierarchy within the apparent egalitarianism generated by the ansible, since this device tacitly separates those beings that have language from those that do not. This is significant in a novel so concerned with the relevance of ethics to technological endeavour: language has often been conceived as the fundamental dividing line between humanity and the rest of nature, the most historically durable precondition for ethical and political consideration.[168] The 'community of worlds' identified by Call could thus be more accurately described as a community of *linguistic* worlds, which for non-linguistic beings is simply a reiteration of the role of language as an exclusionary tool justifying the instrumentalisation of non-human nature.

Yet, on the other, Le Guin's emphasis on non-dualistic thinking, anti-imperialism, the ethical implications of scientific activity, and denunciation of universalist narratives in favour of embedded and localised identities clearly indicates a rejection of chauvinist or technocratic humanism. In this way, Le Guin's conception of the human recalls the reformed humanism of Huxley, with its insistence on the need to balance the abstract rationalisations of the mind with the material realities of the sensual world—to be both 'positivist' and 'mystic', as Huxley would put it. Le Guin arguably goes further than Huxley in conceiving of nature as a distinct ontological realm with its own intrinsic value. In part, her conceptions of human-nature

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[167] Donna J. Haraway, *When Species Meet*, University of Minnesota Press, 2008, p. 282
[168] For a lengthy discussion of the relationship between language, ethics, and the human/animal divide, see Cary Wolfe, 'Wittgenstein's Lion: language, ethics, and the question of the animal', *Animal Rites: American culture, the discourse of species, and posthumanist theory*, University of Chicago Press, 2003, pp. 44-94

relations were informed by the growing environmental awareness that marked the post-war period in the US. David Pepper highlights two dominant ideological trends in the history of western environmentalist thought: 'technocentrism', which acknowledges the threat to the environment posed by human activity, yet argues for the capacity of contemporary science and technology to overcome these issues; and 'ecocentrism', which prioritises respect for the natural world over human activity and therefore calls for—often radical—social and economic restructuring.[169]

Ecocentrism, Pepper remarks, takes at least partial inspiration from the *Tao Te Ching*, an ancient work of Chinese philosophy. Taoism emphasises the notion of 'ultimate wholeness … the reality underlying surface appearances', and had a radical influence on Le Guin's thought and writing.[170] From Taoism, deep ecological ideologies derived a conception of the natural world as being founded on the holistic interconnectivity of all things, including humanity. Deep ecology thereby stresses the need to treat humanity as simply another part of the ecosphere—of no more or less intrinsic value than other natural elements. Given the noted Taoist influence on Le Guin's works, and her own description of Anarres as a 'yin' utopia to counter the 'yang' of technocentric capitalist civilisation, it may thus be useful to read the novel as potentially offering a model of a 'deep ecological' society—an 'ecocentric' world in which human interactions with the natural world have evolved past a utilitarian resource model of nature towards an appreciation of nature as a category with its own ontological worth. Certainly the novel emphasises the need for a more holistic dimension to human-nature relations. It does so, however, not by means of the familiar fatalistic tropes of ecological apocalypse, nor through a naïve or escapist vision of a pastoral Arcadian society. Instead, Anarres emphasises natural

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[169] See David Pepper, *Modern Environmentalism: an introduction*, Routledge, 1999, pp. 10-46
[170] Pepper, p. 23. The influence of Taoism on Le Guin's fiction has been well-noted: George Edgar Slusser, for example, highlights Taoism as 'the strongest single force behind her work', while Le Guin herself has written that 'Taoism got to [her] earlier than modern feminism did'. In 1997, Le Guin even published a translation of the *Tao Te Ching*, the sacred text of Taoism. See George Edgar Slusser, *The Farthest Shores of Ursula K. Le Guin*, Wildside Press, 2006, p. 3; and Susan M. Bernardo and Graham J. Murphy, *Ursula K. Le Guin: a critical companion*, Greenwood Press, 2006, p. 4.

scarcity, rather than either destruction or abundance, as offering an effective means to demonstrate the profound dependence of humanity on its natural-material environment.

This scarcity, and the communion with non-human nature that results from it, can be best seen in Le Guin's contrasting depictions of human-nature relations on Urras and Anarres. Urras is conceived as a world of natural abundance: on his arrival to the Urrasti nation of A-Io, Shevek is immediately struck by the natural beauty of his surroundings. Looking out the window of the high-rise apartment provided for him by his Urrasti sponsors, he gazes with awe on the 'tenderness and vitality of the colours, the mixture of rectilinear human design and powerful, proliferate natural contours, the variety and harmony of the elements'.[171] To Shevek, his window seems to offer a view onto the very 'magnificence of life, rich in the sense of history and of seasons to come, inexhaustible'.[172] It is not merely the image of the landscape that impresses Shevek, but also its apparent harmonious integration with human activity: 'the dark lines of lanes' and 'the graceful square tower' that overlook 'innumerable patches of green' countryside convey to Shevek a sense of intricate inter-connection between the natural and human realms.[173] In contrast to the frequent visions of industrial eco-apocalypse found throughout the SF works of the 1960s and 1970s, the capitalist and industrial A-Io remains an environmental beauty spot—indeed the government of the nation, it is emphasised, has implemented a number of measures designed specifically to limit human impact on the natural world, including hunting bans, restrictions on consumption, and sustainable fishing.

Yet Shevek's own position in this tableau—'looking down … detached from the ground, dominant, uninvolved'—undermines the impression of human-nature intimacy generated by this view.[174] The simultaneous remove from and dominance over nature implied by Shevek's elevated position reveals the power dynamics at play in this scenario: Shevek is not 'at one' with his natural environment, but rather dominates it through his commanding view of the landscape. Nature in A-Io is conceptualised as simply another commodity to be consumed by those with the leisure and wealth to attain the 'proper' perspective. For Cary Wolfe, such an

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[171] Le Guin, *TD*, p. 60
[172] Le Guin, *TD*, p. 61
[173] Le Guin, *TD*, p. 60
[174] Le Guin, *TD*, p. 60

act of looking can be conceptualised as a simultaneous act of shaping and controlling the visual world. Drawing on Derrida, Wolfe argues that the visual field is contingent on the *differánce* of the 'invisible': in order to be meaningful to the viewer, there are certain aspects of the visual field that must be both present *and* unseen if the remaining elements of the field are to be comprehensible as a 'semiotically organized visual field of meaning'. [175] As a result, 'perceptual space', such as Shevek's commanding view of the nature around him, becomes 'organised around and for the looking subject'.[176] What remains invisible, and what form the semiotic relationships between the visible elements of the visual field may take, are of course dependent on the subjective preconceptions of the viewer—what Heidegger calls the 'fore-structures' of thought.

In this way, the act of looking can function as a means to command space by rendering 'invisible' certain features and semiotic relations within the visual field. In the case of Shevek's view of the surrounding nature of A-Io, this invisibility is two-fold. On one level, the natural world is, in the instant of Shevek's observation of it, radically reshaped into an aesthetic scene to be consumed: Shevek's act of looking, and looking down, renders 'invisible', in Derridean terms, nature's material existence outside of Shevek's apprehension of it. Nature ceases to exist as an objective independent entity in and of itself, but is instead literally 'enframed' into a visible tableau to be consumed. It becomes, in other words, a passive object within Shevek's active subjective observation of it. Furthermore, this act of observation itself is maintained by the 'invisible' structure of a set of hegemonic capitalist hierarchies that make possible Shevek's very elevation above the world around him—an elevation available to him only by virtue of its being unavailable to others.

Yet it is only on Urras that the impression can be maintained that nature is a luxury to be enjoyed as a spectacle by those wealthy enough to enjoy it—only on Urras, and particularly in the resource-rich nation of A-Io, that nature and culture can be respectively conceptualised,

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[175] Cary Wolfe, 'Learning from Temple Grandin: Animal Studies, Disability Studies, and Who Comes After the Subject', *What is Posthumanism?*, University of Minnesota Press, 2010, p. 132

[176] Wolfe, p. 132

to borrow a phrase from Haraway, as 'mirror and eye'.[177] Compare this to Shevek's perception of nature on Anarres. Here, the natural environment, far from providing the gentle paradise that its early settlers had expected, instead confronts its human inhabitants with constant challenge and hardship:

> [The] Eden of Anarres proved to be dry, cold, and windy, and the rest of the planet was worse. Life there had not evolved higher than fish and flowerless plants. The air was thin, like the air of Urras at a very high altitude. The sun burned, the wind froze, the dust choked.[178]

For Shevek, the Anarresti environment is 'like a crude sketch in yellow chalk', 'barren, arid, and inchoate'—a landscape where even those areas containing 'vast beauty' are at the same time 'hostile'.[179] Yet if the nature of Anarres is less than welcoming to the human inhabitants of the planet, the relationship that has developed between humanity and its environment simultaneously emphasises holism, rather than hostility, between humanity and nature. On one level, given the scarcity of natural resources, the original settlers were forced to take seriously their intrusion on the ecosystem of Anarres, as they 'fitted [themselves] with care and risk into this narrow ecology'.[180] Hence farmed animals are absent, fishing occurs only in small quantities, and fruiting trees are 'hand fertilized' to compensate for the lack of insects.[181] The Anarresti are aware of nature not as a resource to be plundered, nor as a spectacle to be consumed, but as a delicate ecosystem within which they are inextricably enmeshed and on which they mortally depend. Nature, in other words, is conceived as something *within*, rather than *against*, which humanity is situated—Le Guin's novel recreates a situation in which, to adapt John Berger's description of the original relationship between humans and animals, nature 'constitute[s] the first great circle of what surround[s] man'.[182]

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[177] Donna Haraway, 'A Manifesto for Cyborgs: science, technology, and socialist feminism in the 1980s' [henceforth 'Manifesto'], *The Haraway Reader*, Routledge, 2004, p. 34
[178] Le Guin, *TD*, p. 84
[179] Le Guin, *TD*, p. 61
[180] Le Guin, *TD*, p. 158-159
[181] Le Guin, *TD*, p. 159
[182] John Berger, 'Why Look at Animals?', *About Looking*, Bloomsbury, 2009, p. 3

This intricate situation is highlighted in one scene involving Takver, Shevek's lifelong lover, who is a marine biologist. Takver speaks with longing of the ecological diversity of Urras, with which she is familiar only in general terms (having never travelled there)—a world in which 'everywhere you looked animals, other creatures, [shared] the earth and air with you'.[183] The irony of these reflections, however, is made apparent in Takver's interactions with her own surrounding environment, as she achieves a level of symbiosis with the nature of Anarres that far surpasses that of the wealthy inhabitants of A-Io. Her concern for Anarresti nature is, Shevek notes, 'much broader than love'—when she interacts with an element of nature, be it a 'leaf' or a 'rock', '[she] became an extension of it: it of her'.[184] Her role as a scientist, as recorder and shaper of the natural world, is thus informed by an understanding of her own being part of that world—she is one of those 'souls', Shevek states, 'whose umbilicus has never been cut. They never got weaned from the universe'.[185] Even Shevek himself is forced to check 'his physicist's arrogance' when confronted by the 'small, strange lives' of the marine life of Anarres.[186]

The inextricability of the human and non-human worlds is thus emphasised in *The Dispossessed*, although the extent to which this mutual interdependence is recognised differs wildly between the resource-stricken Anarres and the vibrant capitalist ecosystem of A-Io. On Anarres, it is abundantly clear that the natural world, which 'Techno-Heroic' humanity has historically sought to transcend or conquer, is in fact necessary for its very material survival. This reliance is also a fact on Urras—but here it is masked by a sense of nature as both endless bounty and 'standing resource'. This sense of richness conveyed in A-Io is a combination of the ecological and the economical. The symbolic association of nature with economics—both in terms of the shaping of the natural world in accordance with human socio-economic structures, and of the inaccessibility of this natural bounty to all but the most economically fruitful—conveys a utilitarian sense of nature as boundlessly amenable to human ecological imperialism.

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[183] Le Guin, *TD*, p. 159
[184] Le Guin, *TD*, p. 158
[185] Le Guin, *TD*, p. 158
[186] Le Guin, *TD*, p. 159

In contrast, the form of human/nature relations encapsulated by Takver, and acknowledged by Shevek, in her work with marine animals is based not on exploitation, but more fundamentally on a recognition, as Le Guin put it in an interview in 2006, of 'the mystery, the unreasonableness, the beauty, the stubborn wildness of the non-human world'.[187] Takver's interactions with the marine life of Anarres is underpinned by her tacit understanding that these beings 'do not explain themselves and need not ever justify their ways to man'.[188] They are founded on a basis of radical egalitarianism with the non-human Other. Shevek, too, comes to experience such a moment of what might be called ontological parity with a non-human being. While watching an otter kept as a pet by one of his Urrasti acquaintances, Shevek experiences eye contact with the animal, and is 'caught by that gaze across the gulf of being'.[189] Looking into the animal's 'gold, intelligent, curious, innocent' eyes, Shevek realises that the otter is his '*Ammar* … brother'.[190] The shared look experienced here between Shevek and the otter contrasts strongly with Shevek's earlier gaze, from the elevation of his penthouse apartment, across the countryside of A-Io. The influence of Takver's anti-humanistic holism with nature, and Shevek's resulting openness to embracing his commonality with non-human Others, allows him to overcome his 'arrogance' and scientific detachment and comprehend the otter's material and subjective Otherness, at a great remove from his own, 'across the gulf of being'. In this sense, the ontological parity of the human and the non-human is established as a common ground on which to build a more egalitarian, and less destructive, version of human/animal relations.

I do not want to overstress the radical posthumanist functions of *The Dispossessed*. Indeed, if Le Guin's novel explores the potential for deep ecological attitudes to inform political action, it also reproduces some of the weaknesses that have been associated with this strain of environmentalist thought. As Pepper notes, deep ecology movements have been

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[187] Ursula K. Le Guin and Susan M. Bernardo, 'A Recent Email Interview with Ursula K. Le Guin', *Ursula K. Le Guin: a critical companion*, Susan M. Bernardo and Graham J. Murphy, Greenwood Press, 2006, p. 7
[188] Le Guin, *TD*, p. 159
[189] Le Guin, *TD*, p. 131
[190] Le Guin, *TD*, p. 131

widely criticised for being 'politically naive at best, and at worst politically reactionary'—on a pragmatic level, they have generally proved unable to move past broad declarations and grand statements of intent to engage with the actual details of political reality.[191] In particular, Pepper notes the failure of deep ecology theorists to develop a 'realistic politics of *how to get to* the decentralised bioregional society' from a state of intense capitalist consumption. This is a criticism that has also been directed at Le Guin's novel: although, as Peter G. Stillman notes, '*The Dispossessed* gives readers a warning' against 'playing out … the tendencies of consumer capitalist society' through the example of the ecologically ruined 'Terra', no clear indication of how to act on this relatively vague position is ever given.[192] In this light, the emphasis placed on the natural scarcity of Anarres seems to suggest that any transition to a post-consumer society—and to such a model of human-nature relations as occurs on Anarres—may only be possible in the context of severe natural limitations, which would force the development of alternate approaches to nature rather than the instrumentalist attitudes adopted within industrial societies. Le Guin's novel, in this reading, offers less a progressive vision of a reformed humanity living in harmonious cooperation with non-human nature than a vision of a post-environmental-collapse world forced to revise its attitudes or face extinction. Hence its vision of the future could be said to be, at its root, more dystopic than utopic—more *Mad Max*, so to speak, than Lovelock's 'Gaia'.

Nevertheless, it is in *The Dispossessed*, more than in any other work in this study, that the clearest vision of a post-human individual and society emerges. In keeping with our other works, this is a posthumanism with humanity very much at its core—as noted above, Le Guin's works are dominated by human figures or their 'fictional surrogates' (as Latham puts it), and indeed predominantly male human figures.[193] Yet it is a posthumanism that recognises both the fundamental material integration of humanity *in* the natural world and the fundamental ontological parity of humanity *with* the natural world. Her explicit repudiation of the chauvinist humanism of much earlier SF, her rejection of universals in favour of embedded identities and

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[191] Pepper, p. 29, my emphasis
[192] Peter G. Stillman, '*The Dispossessed* as Ecological Political Theory', *NUP*, p. 68
[193] Latham, p. 118

partial knowledges, and her recognition of the ontological equivalence of humanity with the natural world—these features of Le Guin's works mark them, if not as radically post-*human*, then as strikingly and compellingly post-*humanist*.

Conclusion

Two very different forms of post-human thus emerge from these two works. We may perhaps characterise these as 'inner-directed' and 'outer-directed' forms of the post-human. Each of the two works examined in this chapter is responding to the social, cultural and political conditions of the late twentieth century and the changes that have been wrought upon the figure of the human as a result of rapid and far-reaching developments within western society. Whereas *The Crystal World* retreats into the inner landscapes of the human psyche, ultimately cutting the human off from meaningful engagement with the external world, *The Dispossessed* responds by re-examining the ethical foundations on which this entity called the 'human' has been constructed—whereas Ballard moves inward into the private world of the individual, Le Guin moves out, pressing and poking at the ethical limits of personhood and communality.

Nor is *The Dispossessed* alone in this re-examination. The emergence of several significant critical utopian works in the 1970s heralded a long overdue reappraisal of the humanist frameworks of much SF, particularly in the area of gender. *The Dispossessed* is only one such work, part of a long effort on Le Guin's part to reconceptualise the ethical dimensions of human society. The deconstruction of gender in Russ's *The Female Man*, or of sexuality and sexual identity in Delany's *Triton*, offer variations of the outer-directed post-human, as these authors seek to critically engage with, rather than merely attack or eliminate, the central humanist figure of 'universal Man', in order to extend the ethical and subjective boundaries of classical humanism itself beyond its previous limits. At the same time, of course, it is important not to be overly dismissive in appraising the posthumanist functions of *The Crystal World*: Ballard's work, as mentioned above, is a far cry from the chauvinist technocratic texts of Golden Age SF, for example, or the earlier pulps, or even the mystical humanism of Clarke. The disaster trilogy comprises one avenue of escape from the very instrumental rationality

lauded in those earlier works—even if this escape takes the form of a literal escape from all human life and sentiment itself.

In the case of both inner- and outer-directed post-humanism, the result is the re-evaluation of 'Man', the rational, masculine figure of western thought that had hitherto dominated SF—even if this domination, as we have seen, is never without its own internal insecurities and anxieties. In my conclusion, I will return finally to the questions with which I began this study and resituate the analyses offered here within a wider commentary on the critical overlap between posthumanism and SF. I will go on to suggest some of the ways in which this critical history of the human in these novels might usefully enrich our broader understanding of the figure of the posthuman in SF more generally.

Conclusion

Bio/Techno/Homo: the future of the human in SF

> 'Why does it take three Jinxians to paint a skyscraper? …
> It takes one to hold the paint sprayer, and two to shake the skyscraper up and down.'[1]

Early in Larry Niven's *Ringworld* (1970), Louis Wu, an earthly human, shares this joke with his companion, a 'Pierson's puppeteer' from the planet 'Hearth'. What exactly a 'Jinxian' might be is left unexplained, but we can assume that it is a form of alien life, one whose relationship with humanity is of sufficient vintage to render such a joke, as Louis intimates soon after his retelling of it, stale and unoriginal—mere 'dead wood'.[2] At any rate, the puppeteer—a two-headed, three-legged being noted for its extreme caution in all areas of life—does not appreciate the humour.

Ringworld offers a good example of the tension between conventionally humanist and radically posthumanist conceptions of the subject within Anglophone SF on which I have focussed throughout this thesis. On the one hand, *Ringworld* features a host of non-human beings—Jinxians, puppeteers, 'kzins' (warmongering, feline beings)—that undermine human-centred biological essentialism. On the other, however, it is much less clear whether such beings are in fact as *subjectively* alien as their biological manifestations would imply: the relatively easy communication and co-operation established between human and non-human beings suggest that there is some significant psychological overlap between these radically different biological organisms. There is no recognisably nonhuman worldview here, a fact registered in the joke quoted above. This is a readily familiar kind of jibe, deployed to ridicule members of particular nationalities, cultures, or creeds as being of inferior intellectual 'stock'. Yet its utilisation in *Ringworld* is significant, since it indicates the extent to which such pre-existing human frames of reference remain unchanged by the encounter with a radically Other

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[1] Larry Niven, *Ringworld*, 1970, Gollancz, 2005, p. 11
[2] Niven, p. 11

alien life form: such alien beings are instead subsumed into a pre-existing, and essentially human-oriented, cultural framework. In this example, the population mocked by the joke comprises an entire biological species, while humanity itself, it is implied, may be viewed as the 'normal' standard against which such things as intelligence are to be measured. Cultural and personal encounters with the Jinxians have not, then, caused a paradigm shift in the psychological makeup of Niven's characters—instead, the Jinxians are enfolded within an essentially unchanged frame of human cultural reference.

Compare this to Frederik Pohl's deployment of a similar trope in 'The Day After the Day After the Martians Came' (1967). In this story, a group of journalists are assembled at a motel near Cape Kennedy, waiting for news regarding a recent probe that has arrived back from Mars bearing native Martian life forms. To pass the time, the journalists begin to tell jokes about the Martians. As in *Ringworld*, these jokes merely recycle tired digs at scorned populations, with the Martians in the place of the usual human 'out' groups and the result that, very soon, everyone 'was beginning to get tired of them'.[3] The pessimistic owner of the motel eventually concludes that, in the long run, the unexpected discovery of the Martians will not impact on human affairs: 'I don't believe their coming here is going to make a nickel's worth of difference to anybody'.[4] His bellboy Ernest, however, who is black, disagrees, asserting that the encounter is going 'to make a difference to some people. Going to make a *damn* big difference to me'.[5] The story ends on this relatively ambiguous note, and is open to several interpretations. On the one hand, Ernest's social position in American society—excluded from the dominant narratives of social and cultural discourse, and often the butt of those jokes that have now been altered to target the Martians—may allow him to more readily identify with the liminal position of the Martians, and renders him more receptive to the potentially transformative social and cultural impacts that the Martians might generate. Rather than seeing them as merely another element to be slotted into a familiar and unchanging narrative of white chauvinism, Ernest may instead view the Martians as a means to challenge and transform those

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[3] Frederik Pohl, 'The Day After the Day After the Martians Came', *Dangerous Visions*, edited by Harlan Ellison, 1967, Gollancz, 1987, p. 23
[4] Pohl, p. 28
[5] Pohl, p. 28, emphasis in original

frameworks. On the other, Ernest may view the Martians as his replacement, so to speak, as the ostracised inverse to the dominant white human, thus establishing a place for himself within an expanded humanist narrative that now views the Martians as the biological 'Other' to Earthly *homo sapiens*. In either case, the coming of the Martians will force a revision of some of the basic tenets of the western humanist framework.

These two stories encapsulate two different modes of approaching the non-human that have informed the narrative frameworks of SF throughout its long history. The first is assimilative, in which the non-human comes to be enfolded within existing human-centred cognitive and cultural frameworks. The second, conversely, is transformative, in which the non-human challenges those frameworks and motivates human characters to rethink their orthodox views regarding the supremacy of the conventional human figure that has dominated classical humanist narratives: the white, rational, heterosexual male, endowed with the capacities, as Raymond Williams notes, for 'self-development and self-perfection'.[6] We have traced these two modes throughout the history of SF, from the early nineteenth century to the 1970s. As we have seen, the human as it has been conceived in these works is balanced unsteadily between these opposing assimilative and transformative modes. These works, and particularly those that adopt a more critical stance towards (as Lyotard remarks) the 'humanist principle that humanity rises up in dignity and freedom through knowledge', principally scientific knowledge, gesture continuously towards the *possibility* for radical new modes of human—or, indeed, non-human—existence. At the same time, however, they also persistently retreat from the full consequences of this possibility, resulting in a liminal human figure caught between opposing ontological modes.[7]

These modes, as we have seen, take numerous forms. The works of Verne, Conan Doyle, Smith, Asimov, and Ballard retain key aspects of the traditional western narrative of the human. Hence Verne's *voyages extraordinaire* lay down a much-borrowed framework for deploying scientific knowledge as an ideological tool with which to recast natural history as a teleological

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[6] Raymond Williams, *Keywords: a vocabulary of culture and society*, 1976, revised edition, Oxford University Press, 1986, p. 150

[7] Jean-François Lyotard, *The Postmodern Condition: a report on knowledge*, 1979, translated by Geoff Bennington and Brian Massumi, University of Minnesota Press, 1984, p. 34

narrative of human ascendancy; Conan Doyle borrows this framework in order to naturalise a set of European moral principles as 'essentially' human and thus hierarchise the human and the 'pre-human' as respectively more and less deserving of moral consideration; Smith abstracts the human being from its material-biological basis altogether, deploying an understanding of the rational 'human' as referring to a set of intellectual qualities and painting *Skylark*'s Seaton as a kind of *telos* of human technological achievement; Asimov rejects the significance of the individual altogether, transferring the qualities of progressive development and self-perfection to the human species as a whole, and conceiving of human evolution as a mechanistic process to be overseen by a group of omniscient intellectuals; and Ballard, finally, depicts the complete breakdown of human society as each individual achieves a mode of 'crystal' perfection, relegating the natural world to a subordinate position within a narrative of human utopian transcendence.

Conversely, the works of Shelley, Wells, London, Huxley, Clarke, and Le Guin offer more vivid and anxious accounts of the potentially destructive impacts of the technological mindset on the sanctity of the human individual and human society. Hence Shelley's *Frankenstein* offers a moral allegory regarding the dangers of transgressing natural 'law' in the service of 'perfecting' the human figure; Wells's *The War of the Worlds* imagines the inversion of European colonial practices by casting the English themselves as the victims of technological exploitation; London condemns the brutality of *fin-de-siècle* industrial capitalism, instead projecting a masculinist view of the ideal human as a 'perfected' mix of pragmatic rationalism and muscular development; Huxley laments the subversion of human agency engendered by scientific management and consumerism, and argues for the need to holistically blend the animal and spiritual aspects of human life; Clarke infuses technological advancement with a sense of moral responsibility and imagines the human evolving, under the guidance of benevolent super-beings, towards a state of organic transcendence; and Le Guin rejects chauvinist humanism altogether by demonstrating the relativism of the humanist narrative, and instead emphasises the need for ontological and ethical parity between the human and non-human worlds.

This division of these writers into assimilative and transformative strands is, of course, not unproblematic—London and Clarke, for example, sit uneasily in the transformative category, given that both ultimately deploy teleological conceptions of human self-development and self-perfection, while Ballard clearly differs in certain key respects from the earlier tradition of hard SF into which I have placed him here. A more nuanced conception of these two modes, in which each work is viewed as a heterogeneous bundle of assimilative humanist and transformative posthumanist functions, is more constructive. Hence *The Crystal World*, for example, may be said to reproduce a familiar narrative of the subordination of the natural world to the human desire for utopian transcendence, yet its deployment of the natural catastrophe offers an index of the extent to which such humanist narratives had become untenable within the socio-cultural conditions of the late twentieth century. In this way, *The Crystal World* undermines the social institutions and structures of the late twentieth century, only to then fall back on a familiar, if dramatically solipsistic, narrative of human transcendence.

Even within the transformative category itself, a further subdivision seems necessary. Rather than conceiving of 'posthumanism' as a broad area of critical enquiry, an alternative, and potentially more useful, division of literary examinations of humanist and posthumanist concerns within SF may be attained by distinguishing between 'soft' and 'hard' variations of posthumanism. A 'soft' posthumanist position will attempt to relativise, and thereby undermine the legitimacy of, humanist narratives, demonstrating the extent to which the human subject is contingent on external processes or phenomena, or will attempt to challenge or expand ethical definitions of the human in order to incorporate those beings traditionally excluded from humanist considerations. Here we might situate Pohl's story above, which gestures towards the possibility of transforming the humanist paradigm that privileges certain kinds of humans as conventionally 'normal', yet in such a way as to revise, rather than overturn, traditional understandings of subjectivity. Huxley, too, might be placed within this category, as he rejects the classical humanist insistence on human universality in favour of contingent, shifting identities and a recognition of humanity's fundamental materiality. A 'hard' posthumanist position, conversely, would attempt to shift focus, partially or wholly, away from the figure of

the human itself in order to give greater consideration to the non-human world, or to radically Other kinds of beings. Here we might place such a work as Lem's *Solaris*, which depicts the human encounter with an utterly alien oceanic being. 'Solaris' (as the ocean is called) appears to be sentient, yet is wholly non-human—all attempts to rationalise or systematise the ocean's behaviour fail because the ocean's apparent subjectivity is governed by rules wholly alien to human psychological experience. The novel concludes with the humans possessing no greater knowledge than that with which they began, and so radically denies the proposition—evident in several of the writers examined here—that the evolution of all sentient life ultimately converges with human subjectivity.

Hence any recognition of the fundamental dependency of the human upon the contingencies of technological, natural, or historical forces is an example of a soft posthumanist position—but to undertake a hard posthumanist critique it is necessary also to make room for the radically *non*-human. Such a division may be crudely characterised by the respective concern of these two types of posthumanism with *identity* and *difference*: whereas soft posthumanism is concerned with deconstructing humanist barriers in order to expand understandings of 'human' beyond its usual ethical or political boundaries, hard posthumanism is concerned with acknowledging the validity of modes of being radically different from the human in all its manifestations. Of course, even maintaining such a division as 'identity/difference' is in itself a fundamentally humanist act—a more properly posthumanist conception of posthumanism itself would view the field as being in constant flux, with individual instantiations of subjectivity (in the form of individual humans or other kinds of beings) adopting shifting and relational subject positions prone to transformation or variation.

Hence the clearest posthumanist functions (to invoke the Blochean terms outlined in the introduction) to arise from the works examined here, I argue, are to be found in Le Guin's *The Dispossessed*, in which Shevek's encounter with the otter, for example, or Takver's interactions with the animal life of Anarres illustrate a radical degree of moral equivalence between the human and the non-human. Huxley, too, gestures towards such a possibility in his deconstruction of the figure of western 'Man', although his lack of a sustained ecological critique to supplement this deconstruction—his concerns remain wholly fixated on that 'Man',

however much Huxley disavows him—means that his works more clearly anticipate 'soft', rather than 'hard', posthumanist concerns. In Clarke, humanist and posthumanist functions come into conflict in the figures of the Star Child, the Great Ones, and the Overmind: beings clearly superior to humanity, which appears juvenile and insignificant in comparison, yet also possessing a level of transcendent consciousness that, it is strongly implied, is wholly attainable by humanity itself given sufficient time. Other works—Shelley's *The Last Man*, Wells's *The Time Machine*, Asimov's *Foundation*, and Ballard's *The Crystal World*—exhibit what might be better described as 'anti-humanist functions': these works, as we have seen, undermine entirely certain core tenets of humanism or, in some cases, the human itself, yet without offering the positive or constructive reconceptualisation of the human figure that is one of the distinguishing facets of posthumanist thought.[8] Hence in Asimov's *Foundation*, for example, the very concept of an autonomous human individual is rendered untenable by the social and political atrocities of the mid-century period, suppressed in favour of a mechanistic model of human psychology within a broader framework of historical determinism. London's *The Iron Heel*, too, subverts human agency through a conception of historical determinism, and so demonstrates an anti-humanist function, although in this case the subversion is inadvertent—a result, as we saw, of the incompatibility of his socialist and individualist belief systems—and London subsequently attempts to recoup this agency by deploying a figure of the human largely derived from nineteenth-century humanist thought. And, finally, it is in the works of Verne, Conan Doyle, and Smith that we can most readily detect humanist functions: the aggrandisement of human morality and rationality, the glorification of scientific thought and technological enterprise, and (in Smith) the complete abstraction of the human from its biological basis result in a transcendent human figure with complete command over the natural domain.

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[8] See Francesca Ferrando, 'Posthumanism, Transhumanism, Antihumanism, Metahumanism, and New Materialisms: differences and relations', *Existenz: an international journal in philosophy, religion, politics, and the arts*, vol. 8, no. 2, 2013, pp. 26-32

This study has surveyed the history of SF roughly up to the decade of the 1970s—I would like to conclude by reintegrating my chronology of the human in SF back into more recent speculations regarding the figure of the human within the genre. Following the period of the 1970s, one of the most significant developments in the field of SF was the advent of cyberpunk, the subgenre of SF which has drawn the bulk of posthumanist critical attention. Veronica Hollinger has undertaken a comprehensive examination of the humanist themes of cyberpunk, arguing that this subgenre 'can be situated among a growing (although still relatively small) number of science-fiction projects which can be identified as "anti-humanist"'.[9] Such anti-humanist SF, Hollinger goes on, derives partly from the feminist SF works of the 1970s, of which Joanna Russ's *The Female Man* (1975) offers one of the best known examples. Like the later works of the cyberpunk writers, Russ's novel undertakes an explicit deconstruction of the human subject—in Russ's case, the default male subject at the centre of western culture and society—and instead offers a complex and highly experimental exploration of a number of female characters (including a fictionalised version of Russ herself). Russ sharply criticises the cultural tendency to view women as essentially lesser versions of men: 'I didn't and don't want to be a "feminine" version or a diluted version or a special version or a subsidiary version or an ancillary version, or an adapted version of the heroes I admire. I want to be the heroes themselves'.[10] At the same time, she criticises the social construction of women's identities as being centred around generic sacrificial acts: the expectation that women will be 'timid, incapable, dependant, nurturing, passive, intuitive, emotional, unintelligent, obedient, … beautiful', and above all 'selfless', which Russ amends as '*self-less*'.[11] Like Le Guin's *The Dispossessed*, then, *The Female Man* offers a clear example of the 'soft' post-human, both through its explicit repudiation of the patriarchal humanist tradition and in its shift away from self-identical characters towards ambiguous and shifting focalisations centred on several fluid character subjectivities.

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[9] Veronica Hollinger, 'Cybernetic Deconstructions: cyberpunk and postmodernism' [henceforth 'CD'], *Mosaic: an interdisciplinary critical journal*, vol. 23, no. 2, 1990, p. 30
[10] Joanna Russ, *The Female Man*, 1975, The Women's Press, 1985, p. 206
[11] Russ, p. 205, emphasis in original

Such distrust of the traditional humanist narrative became, in a sense, the dominant mode of SF in the subsequent decades. This shift away from chauvinistic humanism may be attributed, as Hollinger argues in a different essay, to the rise of cultural postmodernism, with its sceptical attitude towards the classical human subject, towards the end of the twentieth century.[12] Such attitudes were most clearly evident in the subgenre of cyberpunk. Michael Swanwick, in 'A User's Guide to the Postmoderns' (1986), divided the SF writers of the early to mid-1980s into the 'cyberpunks' and the 'humanists', arguing that, whereas the latter category focusses on 'human characters who are generally seen as frail and fallible' (albeit generally in a soft posthumanist mode that distinguishes them from earlier kinds of 'humanist' SF writers), the former is defined by a 'hot tech ambiance' and dense prose style that invokes the earlier experimentations of the New Wave writers.[13] Bruce Sterling has explicitly cited cyberpunk SF as heralding the arrival of the post-human, as the 'technological destruction of the human condition leads not to futureshocked zombies but to hopeful monsters'—that is, to the possibility for radically new subjective orientations towards a transformed world.[14] The question, in cyberpunk literature, centres around how the recurring image of the dissolution of the human being within technological frameworks is to be understood: does this moment of bodily disintegration and subjective transformation add up to a utopian release from the entrapments of embodiment or a catastrophic subversion of the human condition?

The answer, as ever, lies somewhere between these two poles. Consider, for example, the quintessential cyberpunk work, William Gibson's *Neuromancer* (1984). On the one hand, *Neuromancer* offers the paradigmatic depiction of virtuality, featuring sentient artificial intelligences, disembodied personalities, 'simstims' (devices that allow individuals to cast their consciousness into the bodies of others), virtual realities, and a host of other technologies that project the human beyond the margins of the body. At times, the novel appears to celebrate the

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[12] Veronica Hollinger, 'Science Fiction and Postmodernism', *A Companion to Science Fiction*, edited by David Seed, Blackwell, 2005, pp. 232-247

[13] Michael Swanwick, 'A User's Guide to the Postmoderns', *Isaac Asimov's Science Fiction*, vol. 10, no. 8, August 1986, p. 24, 48, web, *The Luminist League*, www.luminist.org/archives/SF/ASI.htm, accessed October 2017

[14] Quoted in Hollinger, 'CD', p. 33

technologies that it depicts, and to lament the continued limitations of material embodiment. 'The body', remarks protagonist Case early in the novel, is 'meat. He fell into the prison of his own flesh', while later he literally sheds 'tears of release' when, after being excluded from the space of the 'matrix'—a virtual cybernetic space—for eight years, he is once again able to experience the 'bodiless exultation of cyberspace'.[15] On the other, however, the novel by no means uncritically affirms a *total* escape from the body. Indeed, Case's exclusion from the matrix is rooted in his very biological being: he was injected with mycotoxins by a disgruntled former employer, resulting in a 'crippled' nervous system that prevents him from plugging in to cyberspace. In another part of the novel, during which Case projects his consciousness into the body of the assassin Molly, a view of the corporeal emerges that is very far from that of the Cartesian notion of a mere container for the mind, which would conceive of the latter as fundamentally independent of 'any material thing'.[16] Instead, the experience of embodiment is marked by idiosyncrasies peculiar to the individual:

> The abrupt jolt into another flesh … She was moving through a crowded street … For a few frightened seconds he fought helplessly to control her body. Then he willed himself into passivity, became the passenger behind her eyes.
>   … Her body language was disorienting, her style foreign. She seemed continually on the verge of colliding with someone, but people melted out of her way, stepped sideways, made room.[17]

We might say, then, that *Neuromancer* espouses a kind of critical transhumanism: open to the potentialities offered by emerging technologies, yet aware of the inescapable material reality of the body that underpins any seemingly 'virtual' experience.

In terms of the human archetypes deployed throughout this study, *Neuromancer* thus ultimately finds itself situated somewhere between the trans-human and the post-human. Indeed, although a more comprehensive examination of SF literature from the 1980s up to the present period lies outside the scope of this thesis, it is evident that the human archetypes outlined in this study continue to proliferate past the 1970s. The figure of the pre-human, for

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[15] William Gibson, *Neuromancer*, 1984, HarperCollins, 1993, p. 12; Gibson, p. 69, 12
[16] René Descartes, *Discourse on Method and Meditations*, 1641, translated by Elizabeth S. Haldane and G. R. T. Ross, Dover Philosophical Classics, 2003, p. 23
[17] Gibson, p. 72

example, may be seen in the large number of works featuring zombies that appeared in the first decade of the twenty-first century: in films such as *28 Days Later* (2002), *Dawn of the Dead* (2004), and *Shaun of the Dead* (2004), the popular television show *The Walking Dead* (2010-present), and novels such as Max Brooks's *World War Z* (2006) and Stephen King's *Cell* (2006). Like its counterpart in the earlier works of Conan Doyle and London, the pre-human zombie is a figure of intellectual and moral regression: a degenerate human, reduced to base 'animal' instincts. One common interpretation of this upsurge in zombie literature links it to post-9/11 fears concerning both terrorism and migration: the recurring image of a 'horde' of debased humans invading the familiar spaces—the homes, shops, and city streets—of western society reflects wider cultural anxieties concerning the need to 'preserve' western civilisation from ostensible threats emerging from both religious extremism and mass east-west migration.[18] The trans-human, meanwhile, is most clearly deployed in the works of cyberpunk, albeit, as we have seen, in a critical register far removed from the earlier utopianism of Smith's *Skylark* series or, indeed, of the literature of the various transhumanist movements that appeared concurrently in the 1980s. The figure of the supra-human is evident in Greg Bear's highly regarded 1985 novel, *Blood Music*, in which a scientist develops a form of sentient bacteria that first infects and then assimilates human individuals into a massive, communal biomass formation—an evolutionary development that radically transforms the nature of human subjective experience. Other works—Kim Stanley Robinson's *Mars* trilogy (1992-1996), for instance, or Iain M. Banks' *Culture* series (1987-2012)—are also arguably informed by supra-humanist concerns, insofar as these works shift the narrative perspective (to varying degrees) from individual characters to the fate of the species as a whole. Robinson's works in particular are explicitly informed by debates about the environment, which could be specifically understood as forming part of a supra-humanist discourse: as Robinson states, environmental change 'play[s] out at planetary scales of space and time', demanding alternative

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[18] See Nick Muntean and Matthew Thomas Payne, 'Attack of the Living Dead: Recalibrating in the Post-September 11 Zombie Film', *The War on Terror and American Popular Culture: September 11 and beyond*, edited by Andrew Schopp and Matthew B. Hill, Fairleigh Dickinson University Press, 2009, pp. 239-258; and Jon Stratton, 'Zombie Trouble: zombie texts, bare life and displaced people', *European Journal of Cultural Studies*, vol. 14, no. 3, 2011, pp. 265-281

narrative modes capable of addressing such mass social and natural trends.[19] Indeed, Andrew Milner has declared that one of the biggest issues facing the environmentalist movement in its efforts to change human attitudes and behaviours towards nature is precisely that of narrativisation: how to tell the story of climate change—the defining 'grand narrative' of the twenty-first century—in such a way as to be accessible to the individual.[20]

Finally, the key figure of the post-human can be readily detected throughout recent SF, both in its soft and hard variants. The former is evident, for example, in the increasing popularity of Afrofuturist SF by writers such as Octavia Butler and Samuel R. Delany in the 1980s and 1990s up to Nnedi Okorafor and Nalo Hopkinson in the twenty-first century. Like the feminist SF that emerged in the 1970s, Afrofuturist SF attacks the presumptions of a humanist narrative that has historically situated whiteness as a default characteristic of the human subject, while also countering the relative dominance enjoyed by white authors throughout the history of the genre. A harder strain of posthumanist SF, meanwhile, may be seen in such works as Ted Chiang's 'Story of Your Life' (1998, filmed as *Arrival* in 2016), with its depiction of highly advanced, octopus-like alien beings and its elaborate explorations of the nature of subjectivity and temporality, and (in a quite different register) in Jeff VanderMeer's highly acclaimed *Southern Reach* trilogy (2014), which—like many of the 'New Weird' works that have appeared in the last number of years—features a range of bizarre inhuman beings and human-animal hybrids, deployed within an unsettling Lovecraftian narrative in which the boundaries between the human, non-human and landscape are called continuously into question.

I would like to finish by emphasising two key points in relation to this brief sweep of contemporary SF. Firstly, although postmodern SF, and cyberpunk in particular, has been widely noted for its critical explorations of the nature of human experience, it is now evident that these explorations do not constitute a radical break from earlier modes of SF. Thomas

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[19] Gerry Canavan and Kim Stanley Robinson, 'Still, I'm Reluctant to Call This Pessimism', *Green Planets: ecology and science fiction*, edited by Gerry Canavan and Kim Stanley Robinson, Wesleyan University Press, 2014, p. 243

[20] See Andrew Milner, et al., 'Ice, Fire and Flood: science fiction and the Anthropocene', *Thesis Eleven*, vol. 131, no. 1, 2015, pp. 12-27.

Foster has argued that cyberpunk must be read 'not as the vanguard of a posthumanism assumed to be revolutionary in itself, but instead as an attempt to intervene in and diversify what posthumanism can mean'.[21] In other words, the posthuman did not emerge within SF with the advent of cyberpunk or postmodern SF more generally, but had in fact always been present—Foster deploys the term 'pre-post-human' to describe the various instantiations of posthuman subjectivities and embodiments from before the apparent 'arrival' of the posthuman in the late 1970s and 1980s. Even this notion of the pre-post-human, however, is too crude a concept to account for the diversity of human forms in the history of the genre—I have here attempted to offer a more complex genealogy of the human as a collection of fluid archetypes deployed in complex and contrasting ways throughout the history of the genre, of which cyberpunk offers a radically intensified—yet not radically *new*—inflection. Even this account, however, is necessarily limited in its scope. (For example, I have not mentioned one highly popular human archetype, 'born' in American newspapers in the late 1930s, which has come to occupy an ever more central place in the popular western cultural imagination as the twentieth century wore on: the 'super-human'.) Nor do we necessarily need to identify instances of the radically *in*human— virtual consciousnesses, but also androids, robots, 'Creatures', and so on—in order to deconstruct the boundaries of the human: such beings highlight, rather than instigate, the blurring of the boundaries separating the human from the non-human.

Secondly, and more significantly, the human can, in a sense, be said *never* to have existed in SF. By this, I mean that the diverse denotative and connotative significations linked to the term 'human' cannot be easily, or perhaps at all, summarised: although I have here outlined several tentative historical lineages of the human—the 'technophilic' and 'technophobic' tendencies traced out in Chapters One to Three, or what I have termed the assimilative and the transformative modes of (post)humanist engagement—it is nevertheless evident, as I intimated above, that these cannot be readily conceived of in isolation from one another. Certainly, it is now clear that 'human' does not refer solely or consistently to the

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[21] Thomas Foster, *The Souls of Cyberfolk: posthumanism as vernacular theory*, University of Minnesota Press, 2005, p. xiii

biological animal, *homo sapiens*, nor to Tom Shippey's tool-wielding animal, *homo faber*, nor to a transcendent and 'universal' consciousness, nor to Barthes's 'Family of Man' comprising the whole of humanity, nor to a heterogeneous assemblage of embedded and embodied instantiations. At times, it may refer to one or several of these definitions—but, much like the rational 'Man' of the classical humanist narrative, when we begin to examine these human figures of SF in more detail we find that they lose their clear outlines, becoming blurred, inconsistent, or unstable.

In place of a definition of the human, we may instead conclude with some tentative answers to the questions with which I began this study. We can now see that processes of technological modernisation have played a crucial role in defining the diverse meanings of the 'human' in SF works, while the orientations of this elusive figure towards the non-human natural world also reveals a host of attitudes and values attached to the terms 'human' and 'non-human'. Whether each writer construes the human as either separate from or part of the technological and natural systems that surround it—or somewhere in between—is determined in large measure by their understanding of these basic conditions. For some, technology comprises a mere tool to facilitate human action within a natural world from which the human is wholly separate—for others, humanity is transformed through its contact with technology, and is compelled to recognise, to varying degrees, the relativity of the humanist narrative, as well as humanity's fundamental rootedness in and equivalence with the non-human world. The 'human' thus comprises not a coherent figure in the history of SF, nor even a number of coherent figures, but rather a discursive site upon which may be projected any number of hopes and fears regarding the nature of human society, the merits of instrumental rationalism as a criterion for subjectivity, the ramifications of technological progress, the sanctity (or otherwise) of the body, the significance of the natural-material world, and the future of embodied subjectivity in all its various guises.

In sum, we can see that, throughout the long history of SF, the figure of the human has offered a unique testing site for ideas concerning the exact form and nature of subjectivity and embodiment, or nature and technology, stemming in each case from the capacity of the genre to imagine radical new possibilities and to interrogate old ones. If it seems something of an

evasion to conclude a critical history of the human in SF by concluding that the 'human' as such does not exist, this can only be countered by insisting that this outcome is generated by the very mechanisms of the genre itself: by its speculative basis and divergence from the familiar, which in turn permit writers to imagine the radical intensification of certain key humanist traits, or the radical subversion of others. SF is defined by such radical possibilities, offering a complex and conflicting picture of the anxieties and anticipations concerning the present and the future of the human—'a vast being', to appropriate Jameson's description of SF itself, 'in perpetual change and transformation'.[22]

The project of posthumanism, too, can be thought of as a mode of investigating possibilities. The aim of any posthumanist undertaking is, firstly, to counter humanist narratives by demonstrating the extent to which they are bound up with hegemonic structures of oppression, exclusion, and control, and, secondly, to offer alternative modes of theorising about the human that may offer more inclusive, and less destructive, understandings of our relationship with the world around us and the beings that populate it. It is my hope that this thesis, in viewing these SF works from a variety of different angles, has raised, and provided an initial response to, some important questions concerning the possibility for both oppressive *and* productive ways of viewing the human relationship to technology and nature. To return to the liminal figure with which I began this study, if there is anything to be learned from the terrible example of the OncoMouse™—a 'dangerous vision' (to borrow a famous SF phrase) if ever there was one—it is that alternative visions of how we could do things may come from the most unexpected places, and it is never too late to begin the search.

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[22] Quoted in Franklin, H. Bruce, 'What Is Science Fiction—and How It Grew', *Reading Science Fiction*, edited by James Gunn et al., Palgrave Macmillan, 2009, p. 24

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