

animal/machine

Technology, Subjectivity and Species
in Postwar Literature and Film, 1945-1970

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Abstract

Emerging work in animal studies and posthumanist theory has revealed the species boundary to be a site of contestation, where species identities are dissolved and refashioned according to the pressures of historical contingency. Cold War cultural criticism has shown that the years following the Second World War were marked by anxieties concerning the hegemony of technological reason, and in particular the new potential for mass death made possible by the technological militarism of the Cold War states. This period might be understood as a transition to 'late modernity', where the classical subject of humanism is everywhere being put under erasure by the emergence of technological forces which appear to diminish human agency and autonomy. For postwar critics of technology, these new forces threaten to bestialise the human, and I aim to show how figures of animality are central to the cultural work of respecifying human subjectivity in response to its dispersal by technology.

This thesis traces the points of connection between the discourses of animal studies and Cold War criticism. Animal studies provides an account of the formation of the humanist subject of modernity through its abjection or transcendence of animality. I contend that this analysis must be supplemented by a closer attention to the culture of the postwar decades, where the more confident humanism of 'high' modernity is placed into crisis by the dominance of technological reason. At the same time, I aim to contribute to Cold War criticism through my contention that its key preoccupations—including individualism and mass culture, social conformism, technological anxieties and nuclear conflict—are articulated through a discourse of species that has remained largely unexamined. This thesis covers a range of materials including mid-century farm fictions, science fiction critiques of mass culture, critical-theoretical indictments of instrumental reason, and the military discourses of nuclear strategists. I argue that in all of these textual locations human subjectivity is revealed as precarious, threatened by the dual pressures of technological development and imperfectly transcended animality.

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Introduction

Scratching in the dirt, a hunching simian casts his gaze upon a single large bone amidst a heap of debris. Grasping it in his strong, thickly-furred hand, he wields it – first furtively, then with more confidence – using his improvised tool to rake over the pile of smaller tapir bones. Noticing with some satisfaction that if he hits the debris hard enough he can send small pieces flying into the air, he strikes more and more firmly. His tool-wielding arm is framed against the sky now rather than the dirt. He identifies a more appealing target for his newly-discovered talent: the tough-looking skull of the dead tapir. His face a strange rictus of rage and pleasure, he brings his tool down hard on the skull, shattering it.

A little later, this tool-wielding simian approaches a watering hole with a group of companions. This modest oasis, which is really little more than a puddle, is clearly a scarce resource in the arid, inhospitable landscape that the apes inhabit. There they encounter another group of apes, and both sides make threatening displays of force intended to drive their rivals away from the valuable territory. This has happened before, only last time both parties were unarmed and the confrontation ended without a fight. Now, however, the companions of our ape-innovator have learned from him, and they too are armed with club-like bone weapons. Their competitors have only their fists. The apes' display of ritualised aggression breaks out into open violence, and one of the unarmed apes is beaten (presumably to death) by the clubs of his more technologically-advanced rivals, who proceed to drive the unarmed apes away from the water and definitively claim possession of the space. Standing upright now, our simian Prometheus throws his bone above his head in triumph. We watch it arc through the air, only to be interrupted by an abrupt cut to a shot of a space station in orbit. In its shape – and also, it is implied, in its function – the space station shows a marked affinity with the primitive weapons wielded by the upright apes.

The scenes I am describing are taken from the celebrated opening sequence of Stanley Kubrick's *2001: A Space Odyssey* (1968), a film which examines the human use of technology, and asks what is at stake in the processes of rapidly accelerating technological development which

characterised western modernity in general and the postwar period in particular.¹ In the preface to her book on American Cold War culture, Margot A. Henriksen identifies *2001* as a signal moment where ‘the connection between revolutionary technological change and revolutionary cultural change’ is richly worked through.² Henriksen recognises *2001* as exemplary of a broader cultural formation which is interested in variously celebrating, critiquing, or coming to terms with the radical technological upheavals that redefined postwar society—most notably, of course, the atomic bomb and the space program.

Leaving Kubrick’s apes in the dirt, Henriksen proceeds rather too hastily to the conventionally human concerns of geopolitics and domestic political dissent as the crucial frames through which to read this relationship between technology and culture. In this thesis, I want to offer an alternative to the preoccupation with the human that characterises much Cold War cultural criticism.³ My thesis, which the chapters that follow aim to prove, is that the social relationship towards technology which emerged in modernity, and which was intensified in the postwar moment, cannot be thoroughly understood without recourse to an analysis of the conceptual role and function of species difference.⁴ In fixing the political-ontological categories of human, animal and technology, a discourse of species was central to the symbolic work of justifying – or, as we shall see, critiquing – the narrative of human sovereignty over the nonhuman through technology which prevailed in western modernity and which persisted, with significant new emphases, in postwar culture. Why else, after all, would Kubrick’s epic meditation on human transcendence through technology begin with the figure of the ape? As we shall see in more detail, the ape’s discovery of technology marks a rupture in the field of species difference; the crossing of an ontological threshold; a moment of *hominization*.

¹ *2001: A Space Odyssey*, dir. by Stanley Kubrick (Metro-Goldwyn-Meyer, 1968).

² Margot A. Henriksen, *Dr. Strangelove’s America: Society and Culture in the Atomic Age* (Berkeley: University of California Press, 1997), p. xiv.

³ Along similar lines to Henriksen, Alan Nadel’s influential *Containment Culture: American Narratives, Postmodernism and the Atomic Age* (Durham and London: Duke University Press, 1995) contains a reading of Disney’s *The Lady and the Tramp* (pp. 117-126), but the animal image in Nadel’s reading serves as a cipher for the anthropocentric concerns of domesticity, gender roles and Cold War security culture. One of my tasks in this thesis will be to argue that while these *topoi* of Cold War culture are frequently made intelligible through recourse to animal images that have been appropriated to represent human concerns, these acts of appropriation might be read otherwise, as indexes of the re-specification of animal life and species difference in postwar culture.

⁴ I use the chronological marker ‘postwar period’ to refer to the years between 1945 and the late 1960s. These years saw the emergence of nuclear weapons and space technologies as fixtures in the cultural imagination. My analyses terminate in the late 1960s because, as I will shortly show, it was around this time that new discoveries of nonhuman tool use (which had been made throughout the 1960s) began to achieve wider cultural currency, and this disrupted received narratives of technology and human exceptionalism. For this reason, Kubrick’s *2001* appears rather late on the scene as one of the last compelling depictions of ‘Man the Toolmaker’ to be uncontaminated by this recalibration of species difference.

'The Dawn of Man', in Kubrick's idiom, is a scene of origins where the historical destiny of humanity is mapped out in advance by its appropriation of technology, as we see in the match cut between bone and space station which identifies this most rudimentary of tools with the military-scientific imperatives of Cold War space exploration. My claim in this thesis is that the animal and animality, which were supposed to have been transcended in this process of technological hominization, stubbornly refuse to leave the stage. 'Animality' here refers to both nonhuman animal species and a certain inhumanity at the core of humanist subjectivity, and in both guises it persisted to trouble – and, perhaps, to undermine – the ideology of technological transcendence that dominated postwar humanist thought.

In the remainder of this introduction, I want to map some of the conceptual interrelationships between technology and animality that haunted the cultural and political imagination in the postwar period. I begin by attending more closely to the opening scenes of *2001*, exploring the implications of the conventional attitude that technology is the exclusive and defining property of the (in fact rather ambiguous) subject that we call 'the human'. Next I turn to some key postwar sceptics of technological development, whose anxieties resonate throughout the cultural materials that I will be working with in this thesis. For these thinkers, the technological, broadly construed, had exceeded its narrowly instrumental domain to become a generalised intellectual style. Increasingly, problems of politics and ethics were posed as *technical* questions to be solved through a practice of calculation that was modelled on technological processes. This instrumentalisation of reason undercut human propriety through its indifference to the humanist insistence on the autonomy of reason. The intellectual hegemony of technology in the twentieth century appears in these works not as the consummation but the dissolution of properly human subjectivity. (Culture, too, became technologized in this account; manufactured according to the schematic demands of assembly-line production, the culture industry created a standardised product for a docile, herd-like audience.) I then discuss the intellectual resources that have informed and enriched my own analyses, situating my work in relation to animal studies and posthumanist theory, as well as crediting the rethinking of nonhuman agency which has recently emerged under the banner of the New Materialism. I conclude with brief summaries of my chapters.

The opening sequence of *2001* does not, of course, present a wholly novel account of the relationship between species difference and technology. Kubrick's rendering of the ape-man at the origin of history certainly drew upon an explosion of contemporaneous anthropological research into human origins and tool-use, but his premise – that humanity was separated

decisively from nonhuman nature through its invention of the tool – was neither original nor especially contentious.⁵ It was, rather, a particularly arresting cinematic restatement of one of the founding narratives of humanist modernity. For this reason, it will be worth slowing down to examine this sequence in more detail as a point of departure for a broader analysis of the relations between technology and species difference. My claim here is that while *2001* reproduces an orthodox account of technological humanism, the particular pressures of postwar culture give a less optimistic, more ambivalent inflection to this narrative of human transcendence, and these modifications form a key to thinking the recalibration of human–animal difference in the postwar period.

We might begin by considering what is most characteristically modern in Kubrick's account of human origins. Before he wields it as a weapon, we see *2001*'s ape-man (named Moon Watcher in Arthur C. Clarke's novelisation) glance inquiringly at his bone tool.⁶ He turns it over in his hands before conceiving of its proper use as an instrument of violence. In Moon Watcher's analytical gaze, Kubrick stages the emergence of scientific and instrumental reason. With the proto-scientific insight that a bone tool will multiply the force of a blow, the nascent human subject performs an unprecedented feat of intellection and at the same time discovers his nonhuman milieu to comprise so many potential instruments or resources.⁷ The condition of possibility for the emergence of technology (and thus, for the emergence of the properly human) is this new cognitive style which is staged in the curious ape's gaze and, seconds later, in his grasping manipulation of the external object world; a cognitive style which combines a recognition of oneself as a subject opposed to a world of objects with an empirical method founded on experimentation (Moon Watcher's first, tentative explorations of the relations between tool, force, and the objects that he strikes). Technology, in this account, is a kind of lever which allows the subject to amplify his effect on his nonhuman environment, extending his sovereignty over it and, in the same gesture, confirming his own humanity.

⁵ A valuable account of the role of tool-use in postwar human origins research is provided in Raymond Corbey's *The Metaphysics of Apes: Negotiating the Human-Animal Boundary* (Cambridge: Cambridge University Press, 2005).

⁶ Arthur C. Clarke, *2001: A Space Odyssey* (London: Legend Books, 1990 [1968]).

⁷ When I refer to 'his nonhuman milieu,' more than simply specifying the gender of *2001*'s ape-man, I am self-consciously gendering the human subject as masculine. This is not, of course, because men have more claim to the proprieties of human subjectivity than do women, but rather because they have been *perceived* to have a special claim as exemplary humanist subjects within the terms of a discourse which conflates the particularity of masculinity with the universality of subjectivity. This is particularly the case in the postwar discourses of anthropology and technology, which compulsively attribute behaviours to the supposedly universal humanist 'Man' which are subsequently identified as specifically male. See, for instance, the influential 1966 symposium, 'Man the Hunter', later published as *Man the Hunter*, ed. by Richard B. Lee and Irven DeVore, 2nd. edn (Piscataway, NJ: Transaction, 2009).

This narrative of human origins, as I have said, was certainly not original to the postwar period. The installation of the concept of the subject at the centre of ontology goes back at least as far as Descartes' explication of the *cogito* as the grounds of certainty.⁸ Descartes' epistemological gesture made the human subject the foundation and condition of possible knowledge, and at the same time enclosed the totality of nonhuman entities within the concept of the object. The intellectual-taxonomic schema which modernity elaborated following Descartes resulted in a kind of ontological flattening whereby animals, technologies and inanimate matter were assimilated to one another. Animals and tools alike would become subsumed under the category of object: 'The world is no longer to be seen as a living organism; it has become a clockwork'.⁹ If, certain domesticated species excepted, animals themselves were not exactly conceptualised as technologies, as quintessential objects they were ontologically close enough to technology that they became susceptible to a kind of conceptual inter-contamination.

Descartes saw animals as essentially machinic, and therefore excluded from the (human) community of subjects who were deserving of ethical and political consideration. As Philip Armstrong points out, 'The attractiveness of Descartes' comparison was that it caught the flavour of modernity, and in particular the preoccupation with technological and temporal advancement'; a preoccupation which, we might add, remains central to *2001* and to postwar humanism more broadly.¹⁰ In the philosophical discourse of modernity, then, animals and technologies figured as exemplary non-subjects. In both the Cartesian theorisation of the *cogito* and in Kubrick's myth of human origins through tool use, both animal and technology are positioned emphatically *outside* of subjectivity, and their exclusion from the category of subject both constitutes the figure of the human and installs 'him' as sovereign over the nonhuman.

This claim of sovereignty over the nonhuman is central to the conventional account of the transition to properly human subjectivity. A reading which is attuned to the heroic dimensions of human origin narratives might interpret *2001's* introduction as 'man's triumphal conquest of nature through the invention of technology, which allows him an ever-widening sphere of influence even as he avoids the vicissitudes of the struggle for survival, isolating himself in a protective area of culture'.¹¹ In Kubrick's film, the sovereign subject who appropriates the nonhuman world for his own use does not pre-exist his encounter with technology, but is rather

⁸ René Descartes, *Discourse on Method and the Meditations*, trans. by F. E. Sutcliffe (London: Penguin, 1968).

⁹ J. H. Randall, *The Career of Philosophy*, 3 vols (New York: Columbia University Press, 1962), I, p. 310.

¹⁰ Philip Armstrong, *What Animals Mean in the Fiction of Modernity* (London: Routledge, 2008), p. 7.

¹¹ Sherryl Vint, 'Simians, subjectivity and sociality: *2001: A Space Odyssey* and two versions of *Planet of the Apes*', *Science Fiction Film and Television*, 2.2 (2009), 225-250 (pp. 228-229). This is by no means Vint's own interpretation of the film, and my own analysis here is indebted to the more generous account of *2001* that she develops in her article.

created in and through his deployment of bone tools for violent ends. Technology is *anthropopoeitic* in this sense; its deployment represents the crossing of a threshold which inaugurates human(ist) subjectivity.

In this emphasis on the constitutive function of technology, and in particular on the relationship between technological *violence* and the constitution of the subject, *2001* recalls the work of contemporary anthropologists and primatologists. Raymond A. Dart's 1953 article 'The Predatory Transition from Ape to Man' makes the case that early humans were differentiated from their primate peers by a propensity for the kind of predatory and communal violence staged in *2001*.¹² The australopithecines, a species of early hominids 'discovered' by Dart in 1924, were 'an ultra-simian group of creatures'; like Kubrick's proto-humans, they were 'flesh-eating, shell-cracking and bone-breaking, cave-dwelling apes' (p. 202). In *Australopithecus africanus*, 'the brain growth had reached a stage where the more venturesome members—stimulated by some local failure of their arboreal food supply or by sheer curiosity—sought new sources of food on hill and plain wherever they could obtain the sustenance they needed' (p. 203). These new sources of nourishment were the bodies of nonhuman animals, hunted and killed with bone tools.

The striking resemblance of Dart's 'more venturesome' australopithecines to Kubrick's Moon Walker is perhaps unsurprising. Daniel Richter, the mime artist who performed as Moon Walker, was supplied with copies of Dart's work by Kubrick in preparation for the role.¹³ Like Moon Walker, 'the chief cultural tools of the Australopithecinae were clubs formed by the long limb bones of antelopes' (p. 204), and this technological ingenuity was accompanied by behavioural changes – notably, the emergence of predation – that announced their crossing of the threshold of hominization:

[The Australopithecines] were human not merely in having the facial form and dental apparatus of humanity; they were also human in their cave life, in their love of flesh, in hunting wild game to secure meat and in employing implements, whether wielded and propelled to kill during hunting or systematically applied to the cracking of bones and the scraping of meat from them for food. (p. 204)

The opening scenes of *2001* frame this technological violence as a rupture in the field of species difference. Moon Walker's social group had previously coexisted easily with other species, except for a leopard which killed one of their number and bloodily underlined the proto-humans' exposure to necessity and death. When we first encounter them at the watering hole,

¹² Raymond A. Dart, 'The Predatory Transition from Ape to Man', *International Anthropological and Linguistic Review*, 1 (1953), 201-219. Further references to this article will be given in the text.

¹³ Julian Rice, *Kubrick's Hope: Discovering Optimism from 2001 to Eyes Wide Shut* (Lanham, MA: Scarecrow Press, 2008), p. 27.

the hominids live alongside foraging tapir. After the arrival of the mysterious monolith incites a transformation of simian consciousness, the bones of one tapir are appropriated as Moon Walker's first weapon.¹⁴ The sequence of shots depicting the smashing of the skull cuts between the violent action of the bone tool and seemingly disconnected images of a tapir falling to the ground. The next shots show Moon Walker's people consuming the raw flesh of what is presumably a dead tapir. To borrow Dart's rather lurid prose, they have become 'carnivorous creatures that seized living quarries by violence, battered them to death, tore apart their broken bodies, slaking their ravenous thirst with the hot blood of victims and greedily devouring livid writhing flesh' (p. 209).

The assertion of sovereignty over the nonhuman world that is made possible by technology finds its exemplary expression in this act of predation. Jacques Derrida has argued that the structure of subjectivity – the insistence on the primacy of the rational, speaking (and therefore always human) subject – relies on the symbolic sacrifice of the non-subject in general, and the non-subject we name 'animal' in particular. Part of this sacrificial labour involves the installation of subjectivity at the centre of ontology and epistemology in, for example, the Cartesian *cogito*. But it is not only that human animality, embodiment and affect are deprecated in favour of cognition, mind and reason (the symbolic sacrifices of humanism); in the case of the animal, sacrifice is literalised in the act of flesh eating which (re)produces human sovereignty:

Such are the executions of ingestion, incorporation or introjection of the corpse. An operation as real as it is symbolic when the corpse is "animal" (and who can be made to believe that our cultures are carnivorous because animal proteins are irreplaceable?), a symbolic operation when the corpse is "human."¹⁵

Derrida's quotation marks here underscore the provisionality of the concepts 'human' and 'animal'. Clearly demarcated species differences are not anterior to the structure of sacrifice, but rather are produced in and through the introjection of the non-subject. The development of technology makes possible the act of killing that confirms the (human) subject as sovereign. In *2001*, then, as in the philosophical discourse of modernity, the origin of technology and subjectivity is coeval with the death of the animal.

¹⁴ Incidentally, in Clarke's novel it is made quite clear that the Monolith represents the intercession by an extra-terrestrial species in the development of humanity. In the film this remains far more obscure, and as Peter Krämer points out in his BFI Film Classics volume *2001: A Space Odyssey* (London: Palgrave Macmillan/BFI, 2010), the last lines of spoken dialogue in the film concede that the 'origin and purpose' of the monoliths remain 'a total mystery' (p. 83). The absence of an elaborated explanation of the monolith leaves open the possibility that it might be a figure for humanist (rather than extra-terrestrial) inspiration; a monument to humanity's capacity for auto-telic self-fashioning through technology.

¹⁵ Jacques Derrida, "Eating Well," or the Calculation of the Subject', in *Points... Interviews 1974-1994*, ed. by Elisabeth Weber, trans. by Peggy Kamuf and others (Stanford, CA: Stanford University Press, 1995) pp. 255-287 (p. 278).

In the last few pages, I have used Kubrick's *2001* to sketch something of the relations between subjectivity, technology and animal life as they appear in the orthodox, heroic account of modernity. This account emphasises modernity's triumph over nature through technology, and this triumph is progressive, intimately linked to its expansionary tendencies, the bone thrown into the sky at the end of the sequence disclosing space as the next arena for human action. Both *2001* and the work of Dart and other postwar anthropologists install these tendencies towards mastery and expansion as something like the historical destiny of the species by writing them into the narrative of human origins. Technological expansionism is no longer associated primarily with the period of acceleration which characterised western modernity after the seventeenth century, but encompasses the totality of human history from the development of the first bone tool to orbital space stations and intelligent machines. In an important sense, *2001* rewrites the narrative of humanist modernity as the narrative of human history as such.

This representational procedure works to dehistoricize relationships between technology, animal life, and subjectivity, erasing the historically variable interactions between (and redefinitions of) the constituent parts of this conceptual formation. A more generous reading of *2001* would note that, while the technology-as-destiny narrative structure remains intact, the film is certainly responding to the drastic acceleration of technological development in the mid-twentieth century. I want now to attend more closely to the historicity of Kubrick's film. In following this reading strategy, a far more ambivalent narrative of technology and species difference begins to emerge.

In the reading sketched above, *2001* gives exemplary expression to modernity's self-image as a technologically-equipped, expansionary force subjugating the nonhuman to human will. Certainly, Kubrick's ape-man secures meat and territory for his peers through his technical prowess. It is at this point, however, that the particular anxieties of the postwar period intervene in Kubrick's narrative discourse to modify this seemingly orthodox account of human ascendancy with a more pessimistic inflection. The traumas of global war and nuclear stalemate that defined mid-twentieth century geopolitics significantly complicated attempts to offer a heroic account of human technological transcendence. Writing during the Second World War, the Polish-Lithuanian Nobel laureate Czesław Miłosz claimed that 'a certain insectivity of life and death' was created by the technological militarism of the wartime states:

I suspect that we are beginning to look at man partly as a living piece of meat with tufts of hair on his hair and his sexual organs, partly as an amusing toy that speaks, moves—but all one has to do is raise one's hand, squeeze the trigger and an ordinary object is lying in the same place, as inert as wood and stone.¹⁶

In Miłosz's account, technological violence is what we might call *neganthropic*; it does not produce the human subject, as in *2001*, but rather dissolves him, initiating a trajectory of degeneration which proceeds from the speaking subject to the merely living body, culminating in the inert materiality of the corpse.¹⁷

This tendency towards an evaluation of technology as neganthropic, which emerged in response to the world wars, was taken up and rearticulated in intensified form as the postwar geopolitical settlement turned towards nuclear stalemate. Released some four years before *2001*, Kubrick's previous film *Dr. Strangelove, or: How I Learned to Stop Worrying and Love the Bomb* (1964) engaged a similar thematics of technology, security and force.¹⁸ In *Dr. Strangelove*, however, far from confirming and securing the human subject, technology brings about the dissolution of the possibility of subjectivity through nuclear annihilation. In this light, *Moon Watcher*'s transition from ape to proto-human appears less as a triumphal narrative of human ascendancy, and more as a 'critique [of] the trajectory of a human civilization – developed from a once-shared culture with simians – that has produced the threat of nuclear annihilation', as Sherryl Vint has recently suggested.¹⁹

2001's historicity as a Cold War film is announced by its early scene of conspecific violence. Technology secures not only meat, but also territory for the nascent human subject. Recall that in the opening scenes of *2001*, and prior to their innovation of bone clubs, *Moon Watcher*'s group have an angry confrontation with similarly proto-human rivals that culminates in a ritualised display of aggression and the retreat of the weaker group. Following their acquisition of weapons, *Moon Watcher*'s group engage their rivals in a second confrontation, definitively driving them away from the oasis and killing one of their number. The origins of subjectivity here coincide with new possibilities of violence which translate incipient nationalism into open

¹⁶ Czesław Miłosz, *Proud to Be a Mammal: Essays on War, Faith and Memory*, trans. by Catherine Leach, Bogdana Carpenter and Madeline G. Levine (London: Penguin, 2010), p. 162.

¹⁷ Neganthropomy is, importantly, by no means identical with misanthropy. Misanthropy names a hostility directed against the human, but in assuming the transparency of the species distinction it tends to reproduce species difference even as it assails the human. Anxieties surrounding neganthropy, on the other hand, proliferate wherever humanism becomes aware of the provisionality of its own categories of difference, and most of all at times of crisis. The collective traumas of war and genocide in the first half of the twentieth century meant that the period around mid-century was unusually well attuned to neganthropic potentials in the new, technologically rationalised culture.

¹⁸ *Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb*, dir. by Stanley Kubrick (Columbia, 1964). I will give a fuller account of *Dr. Strangelove*'s engagement with a discourse of species – particularly its critique of the assumption of the sovereignty of the human subject over his technological milieu – in my chapter on nuclear risk.

¹⁹ Vint, 'Simians, subjectivity and sociality', p. 226.

war. One of Dart's students, the playwright and popular scientist Robert Ardrey, offered a naturalistic account of what he termed the territorial imperative: 'If we defend the title to our land or the sovereignty of our country, we do it for reasons no different, no less innate, no less ineradicable, than do lower animals'.²⁰ Though Ardrey here assimilates human and nonhuman life, the trait which typically distinguished humans and animals in postwar culture (that is, the manufacture and use of tools by the former) significantly raises the stakes of this seemingly inevitable conflict. After the territorial murder of a member of the weaker group (the first casualty of war, we surmise), the film cuts to an orbital space station which in early drafts of the script was identified as a nuclear weapons platform.²¹ Technology, then, is not only associated with the possibility of the transcendence of animality, but also with a neganthropic tendency to enact, with greater violence, the fundamentally inhuman imperatives of internecine conflict.

From this perspective, the inauguration of humanity through the (technologically-facilitated) sacrifice of the animal appears as a gesture which is more ambivalent than celebratory. The death of the animal might produce subjectivity, but in doing so it also produces the condition of possibility for nuclear annihilation. In this account, the animal body is not so much a constitutive sacrifice as it is the first victim of processes of technological violence which, by the mid-twentieth century, threatens planetary life in general. The peculiar masculinity of these processes is captured, once again, by the match cut between the phallic bone club pitched by the virile Moon Walker and the similarly-shaped nuclear space station; an 'indict[ment of] the patriarchal and militarised western culture [as] a nihilism that makes victims of animals as well as humans', as Vint suggests.²² In opposing themselves to nonhuman animals through the prosthesis of technology and the violence it makes possible, Moon Walker's group step into a space of discontinuity with the natural world which attests to their sovereignty over it. At the same time, the neganthropic potential of technology threatens to undermine their newly-achieved humanity, and the space of discontinuity in which they now move sets the stage for a fantasy of a pre-technological reconnection with the natural world as a melancholy residuum of the process of separation.

I have chosen to begin with a reading of *2001: A Space Odyssey* because it gives an especially lucid account of technology as an ambivalent mediator between human and animal. A characteristically modern narrative of transcendence claims that technology will realise the 'ascent of man'; a transition from animal to human made possible by the new powers of tool-use

²⁰ Robert Ardrey, *The Territorial Imperative: A Personal Inquiry Into the Animal Origins of Property and Nations* (London: Collins, 1967), p. 5. As with Dart, Kubrick and Clarke were aware of Ardrey's work, and passed it on to Daniel Richter in preparation for his performance as Moon Watcher; see Rice, *Kubrick's Hope*, p. 27.

²¹ See Krämer's account of early drafts of the screenplay in his *2001: A Space Odyssey*, pp. 44-45.

²² Vint, 'Simians, subjectivity and sociality', p. 227.

and cognition. A counter-narrative which gains traction in response to the global warfare and nuclear crises of the twentieth century claims instead that the destructive forces unleashed by technology threaten to dissolve the possibility of human subjectivity. Between these two alternatives, the animal body is captured as either the constitutive sacrifice which secures human subjectivity, or, in a more mournful key, as the exemplary victim of technological development. These oppositional logics of transcendence and dissolution, which *2001* holds together under tension, are everywhere present in the thought of technology and animal life in the postwar, and together they form the object of my analyses in this thesis.

In pursuing this inquiry, I am guided by a genealogical sensitivity to the historicity of the concepts that I will be working with. As Erica Fudge has recently pointed out, ‘just as ideas are transformed across time and space, so what it means to be a human is also shifting’.²³ If the meaning of human subjectivity is specified in and through its constitutive relation to animality and technology, and if these terms are themselves subject to historical reformulation, then it follows that the rethinking of technology and species difference in postwar culture will inevitably transform received models of subjectivity. This is not to suggest that technology and animality are significant objects of analysis only insofar as they illuminate the human subject. The transformations that I will trace in this thesis have often violent implications for nonhuman animal lives. Part of my work here will be to bear witness to these violences and, where possible, to try to conceive of ways of thinking otherwise, beyond the sacrificial schema of subjectivity.

In this thesis, then, I aim to trace the reconfigurations of subject (and quasi-subject) positions in postwar culture, as relations between species concepts and technology are revised in response to the crises of the mid-twentieth century. One of my tasks will be to articulate the continuities between the postwar thought of the animal-technology conjuncture and its earlier, classically modern formulations of transcendence. I will also be inquiring into points of discontinuity where, as in Kubrick’s anxieties concerning human agency and the militarisation of technology, the triumphal, anthropopoeitic function of technology looks rather less secure. In pursuit of this last point, I would like to offer a brief overview of a certain tendency in postwar intellectual culture whose influence will be felt across the range of materials that I will be working with in this thesis. This tendency saw reason itself – the defining and exclusive property of subjectivity in humanist thought – as becoming precisely inhuman through its subordination to technological processes.

²³ Erica Fudge, ‘Milking Other Men’s Beasts’, *History and Theory*, 52 (2013), 13-28 (p. 22).

Since its inception, the project of modernity has regularly been characterised as a process of ever-increasing *hominization*. In 'What is Enlightenment?', Kant likens the threshold between the modern and the pre-modern to the distinction between the human and the nonhuman: 'After the guardians'—that is, the pre-modern ruling classes—'have first made their domestic cattle dumb and have made sure that these placid creatures will not dare take a single step without the harness of the cart to which they are tethered, the guardians then show them the danger which threatens if they try to go alone.'²⁴ Here, and elsewhere, the attempt to define the meaning and value of modernity is underpinned by a discourse of species. In Kant's account, the rejection of traditional authority for the autonomy of reason is understood as a process of anthropogenesis: the promotion of the irrational, herd-like pre-moderns to the ranks of humanity proper. From the political and intellectual tumult of the late eighteenth century we have inherited a concept of subjectivity that roots in this separation of modernity from its inhuman past. In the revolutionary period in France, in the words of one commentator, 'it seemed to many that the people were in the process of emerging as the protagonist of a new political order in which they seemed to be becoming active and free citizens engaged in public debate instead of being merely obedient and passive subjects.'²⁵ At this watershed moment in modernity, 'the ascension of the ideal of reason' was synonymous with the assertion of an active, properly human concept of agency and citizenship over the docile passivity that characterised the quasi-human social relations of the pre-modern world.²⁶

By the mid-twentieth century, the trauma of war and the legacy of fascism had shaken the confidence of the moderns in this narrative of humanization. In *Dialectic of Enlightenment* (1944), T. W. Adorno and Max Horkheimer asked 'why mankind, instead of entering into a truly human condition, is sinking into a new kind of barbarism.'²⁷ If modernity had promised to fashion a new humanity in the form of rational, autonomous subjects, it had delivered instead an inhuman combination of totalitarianism, weapons of mass destruction and bureaucratic violence. The intellectual tendency that I will trace here argued that the political uses of reason in the pursuit of emancipation had been occluded by reason's subordination to the logic of technocratic society; the hegemony of technology in modernity had incited a transition from

²⁴ Immanuel Kant, 'What is Enlightenment?', in *Foundations of the Metaphysics of Morals, and, What is Enlightenment?*, trans. by Lewis White Beck, 2nd edn (Upper Saddle River, NJ: Prentice-Hall, 1997), pp. 83-90 (p. 83).

²⁵ Darrow Schechter, *The Critique of Instrumental Reason from Weber to Habermas* (New York: Continuum, 2012), p. 6.

²⁶ Schechter, *Critique of Instrumental Reason*, p. 7.

²⁷ Theodor W. Adorno and Max Horkheimer, *Dialectic of Enlightenment*, trans. by John Cumming (London: Verso, 2010 [1944]), p. xi.

autonomous reason to instrumental rationality. For Max Horkheimer, 'it is as if thinking itself had been reduced to the level of industrial processes, subjected to a close schedule—in short, made part and parcel of production.'²⁸ This critique of instrumental rationality has its roots in the nineteenth century origins of the social sciences, but it came into full force in response to the technological-bureaucratic character of postwar liberal and social democracies.²⁹ A corollary of the critique is that instrumentality – which in the form of tool-use, technological development and scientific research, is regularly taken to exemplify the human transcendence of the nonhuman world – is viewed instead as a challenge to the humanising project of modernity by displacing the autonomy of reason which is critical to the work of anthropopoiesis. For Horkheimer, 'advance in technical facilities for enlightenment is accompanied by a process of dehumanization. Thus progress threatens to nullify the very goal it is supposed to realize—the idea of man.'³⁰

In 1968, the same year that *2001: A Space Odyssey* was released, Erich Fromm asked the question which troubled Kubrick's film: 'How did man, at the very height of his victory over nature, become the prisoner of his own creation and in serious danger of destroying himself?'³¹ For Fromm, the source of the danger to freedom and humanist propriety was no longer fascism or communism. Western modernity was now haunted by

a new spectre: [the] completely mechanized society, devoted to maximum material output and consumption, directed by computers; and in this social process, man himself is being transformed into a part of the total machine, well fed and entertained, yet passive, unalive, and with little feeling. With the victory of this new society, individualism and privacy will have disappeared. (p. 13)

We see here how the new technological culture dissolves the marks of humanist propriety which emerged as synonymous with subjectivity as such in the early, revolutionary phase of modernity. No longer active citizens or individuated participants in the rational remaking of the political, the humanist subject has become fully subsumed within the various technological processes on which he depends. Again a discourse of species difference is deployed to make sense of this accelerating technologisation of subjectivity: the new society frustrates opportunities for 'a joyful, meaningful existence, which answers those specific needs of man which he has developed in the last few thousand years and which make him different from the animal and the computer' (p. 16). Fromm's response to this is to advocate for 'the activation of the individual, the restoration of man's control over the social system, the humanization of

²⁸ Max Horkheimer, *Eclipse of Reason* (London: Continuum, 2004), p. 15.

²⁹ Schecter's *Critique of Instrumental Reason* provides a fine historical overview of this critique, pp. 1-42.

³⁰ Horkheimer, *Eclipse of Reason*, p. v.

³¹ Erich Fromm, *The Revolution of Hope: Toward A Humanized Technology* (New York: American Mental Health Foundation Books, 2010), p. 14. Further references will be given in the text.

technology' (p. 17); in short, the restitution of agency and human sovereignty over his technological milieu; and also, one can infer, the respecification of his difference from the 'lower' animals.

In *The Human Condition*, Hannah Arendt develops a typology of human activity which shares with Fromm the anxiety that modernity's tendency towards technical calculation is fundamentally neganthropic.³² She proposes three categories of human activity: labour, work and action. Labour pertains to those aspects of activity which derive from the biological basis of human life. In this category, she includes the reproductive labour of servants and slaves, as well as the wage-labour of the proletariat which suffices only to secure what is necessary for the maintenance of life (food, clothing, shelter). In Arendt's account, insofar as 'man' is immersed in the maintenance of life through the activity of production and consumption, he is not properly human but rather an *animal laborans*, bound to the cycle of 'spontaneous growth, metabolism and eventual decay' (p. 7) which is the condition both of biological life and industrial production and consumption in modernity. Work names that activity which produces durable, artificial objects that collectively constitute the human *world* (as opposed to the *earth*, which is associated with labour and the life process), which 'separates human existence from all mere animal environment' (p. 2). Public, political life is represented by the category of action, which is held to be the condition of properly human life. In 'his' capacity for action, the human exercises those capabilities which most closely resemble the conventional properties of humanist subjectivity. As a potential subject of *biography*—a unique, indivisible and self-possessing agent whose mere life is transfigured as personal narrative—the acting human bestows meaning upon the meaningless world and the indifferent earth.

In Arendt's ontology, although the three categories of labour, work, and action appear as trans-historical potentialities of human being, they are not given equal expression in each historical stage of development. With the development of modern political economy, labour has become hegemonic, and in this, Arendt identifies a covert affinity between capitalism and communism. Despite their opposing views on the merits of private versus communal ownership, Adam Smith shares a common point of departure with 'Marx's "system of labour," where labour became the source of all productivity and the expression of the humanity of man' (p. 101). Action—that is, political and therefore human activity, constitutively opposed to the bodily necessities of mere life—is replaced by a philosophy which conceives of the sole purpose of political activity as the production and equitable distribution of the commodities and consumer goods necessary to foster life. In Arendt's anthropocentric discourse of species, this confusion over the ontological

³² Hannah Arendt, *The Human Condition*, 2nd edn (Chicago: University of Chicago Press, 1998 [1958]). Further references will be given in the text.

essence of the human is symptomatic of the way in which, contrary to the claims of the moderns, the task of humanization has failed and the politics and economics of modernity have revealed themselves to be founded on the inhumanity of biological life.

The proletarian masses (who comprise the majority of the populace in modernity) own no property, and are therefore excluded from having a share in the durable, artifactual world, in Arendt's technical sense. At the same time, they have no stake in the public world of action, which has atrophied under the double pressure of an impoverished representative democracy and the colonization of the political by technocratic calculation. Belonging to the human species without, it is claimed, possessing the institutions necessary for properly human life, these human communities occupy a zone of ontological indistinction in Arendt's thought; neither fully human nor wholly animal, they attest to Giorgio Agamben's suggestion that 'the caesura between the human and the animal passes first of all within man', in the separation of political and biological life.³³ The political economy of modernity, which is oriented towards *labour*, is thoroughly invested in the instrumental-rational fostering of bare life. Whether expressed as the liberal capitalism of Adam Smith or as Marxist communism, modern political economy has divested humanism of the marks of its former prestige, and has produced a mass proletariat who live as so many *animalia laborantia*.

Writing between the 1940s and the 1960s, these authors collectively constitute a postwar rejoinder to celebratory accounts of technological development in modernity. Though their projects are very different (and in some important respects irreconcilable), they share a sensitivity to the ways in which technological and instrumental processes encroach upon and disrupt modernity's own account of what it means to be a human(ist) subject. Behind all of their discourses stands the figure of animality as that which has supposedly been transcended in modernity, but which, they claim to show, returns as a corollary of the consolidation of instrumental reason and technological development. This suspicion of an affinity between technology and inhumanity is endemic to postwar culture, as I hope to show in the chapters that follow.

In pursuing this inquiry, I turn to the arts as a crucial site where these anxieties are mapped out, reproduced, or resisted. A concern with the rapid pace of technological development, and particularly with its capacity to disrupt and remake notions of subjectivity and species difference, was central to the political-aesthetic project of a number of key figures in postwar

³³ Giorgio Agamben, *The Open: Man and Animal*, trans. by Kevin Attell (Stanford, CA: Stanford University Press, 2004), p. 16.

film and literary culture. Literature is not only a space where humanist and technological anxieties were transfigured as narrative; the function (and future) of literacy itself was at stake in the new technological culture. For some of the authors I will be engaging with, writing is first of all a kind of technological practice, a prosthesis of human intellect. Unlike the neganthropic tendencies which (it is claimed) inhere in the new technologies of the mid-twentieth century, writing, and literature in particular, is a practice which can reassemble the human through its function as a mnemotechnics: a device which can call the human back to itself through its capacity to transmit cultural memory. As I shall show in more detail in Chapter Three, for some figures in postwar literary culture this alone can guarantee the renewal of humanist subjectivity against the pressures of an animalising, amnesiac mass culture of momentary diversions and gratifications.

Literature is also implicated in these conversations surrounding instrumental or technological reason as one significant source of resistance to the dominant imperatives of calculation and control. The late work of the German philosopher Martin Heidegger turns towards poetry as an alternative to the 'planetary technicity' which encompasses late modernity, and which could oppose the tendency of technological culture to apprehend beings as 'standing reserve'; that is, as resources awaiting use.³⁴ In other accounts, literature's value as a point of resistance was diminished by its attenuation by these same technological forces. If the sacrificial death of the animal represented a kind of inaugural moment in the history of technologisation, for Horkheimer literature was the latest casualty of instrumental reason:

Once it was the endeavour of art, literature, and philosophy to express the meaning of things and of life, to be the voice of all that is dumb, to endow nature with an organ for making known her sufferings, or, we might say, to call reality by its rightful name. Today nature's tongue is taken away.³⁵

Horkheimer invokes the conventional, Adamic understanding of language (and literature in particular) as bestowing meaning on the meaningless materiality of nature. Here, though, this capacity is apprehended less as an imperiously appropriative naming of the other, and more as

³⁴ Heidegger's diagnosis of late modern society as beholden to a 'planetary technicity' is made in the posthumously published interview 'Only a God Can Save Us', reprinted in *Heidegger: The Man and the Thinker*, ed. by Thomas Sheeran (New Brunswick: Transaction, 2010), pp. 45-67 (p. 55). His analysis of the disclosure of being as 'standing reserve' is made in 'The Question Concerning Technology', in *Basic Writings*, ed. by David Farrell Krell (London: Routledge, 2011), pp. 213-238. His engagement with poetry as a source of resistance to technicity is usefully sketched in Michael E. Zimmerman's *Heidegger's Confrontation With Modernity: Technology, Politics, Art* (Bloomington, IN: Indiana University Press, 1990), and developed into an ecological poetics by Jonathan Bate in *The Song of the Earth* (London: Picador, 2001). I do not have space to undertake a thorough analysis of Heidegger's thinking on technology, literature, ecology and humanism, though I credit him here as an important contributor to my understanding of postwar technological anxieties.

³⁵ Horkheimer, *Eclipse of Reason*, p. 69.

an ethical responsibility to testify to violence against nature; and the possibility of this testimony is said to be vanishing in twentieth century culture.

This melancholic attitude announces the disappearance of the possibility of an authentic relationship to the nonhuman world, and in this, it speaks to one particular literary tendency that I will be tracing in this thesis. As I showed earlier, in *2001: A Space Odyssey*, the invention of technology makes possible the opposition between the human subject and the nonhuman world, and this entails the dissociation of Moon Walker's comrades from their earthly milieu. No longer coexisting in a multi-species community, they hunt and kill both other animals and their proto-human rivals. This narrative makes possible a nostalgia for a lost, pre-technological unity with the nonhuman, an attitude which also appears (with varying emphases) in the texts that I engage with in Chapters One and Two. I first read the literary farms of George Orwell and his contemporary, the Welsh poet R. S. Thomas as exemplary interfaces between technological reason and the nonhuman world. The zoos rendered in the fiction of Angus Wilson and Brigid Brophy further extend this critique of the violence of late modernity. Conceiving of the postwar farm and zoo as laboratories for experiments in modernisation, these authors imagine refuges (or acts of liberation) that might allow relationships between the species to proceed otherwise, beyond the exigencies of an expansionist technological culture.

The second set of literatures that I will be working with in this thesis broadly rejects this nostalgic mode which is characterised by a flight from technology, preferring instead to offer a direct engagement with the new technologies' ability to refashion subjectivity and species difference. In Chapters Three, Four and Five, I read science fiction (SF) texts which cover a variety of imaginative possibilities, from predatory machines to artificial humans, and from the neganthropic scene of post-apocalyptic dissolution to the liberal-utopian idealism of an expanded, posthuman thought of political community. As the genre most closely associated with technological development, SF clearly has much to contribute to a genealogy of the subject's transformative encounters with technology. Perhaps less intuitive is my claim that there is a rich seam of material in SF which is amenable to an analysis of species difference. The origins of SF as a genre are intimately linked to the emergence of industrial modernity, and, as Vint has pointed out, the same processes of technological development which gave rise to the speculations of SF writers tended also to remove animals from the sphere of daily life and work.³⁶ Following from Vint's path-breaking work, I contend that the speculations concerning new technologies and other worlds which abound in SF are necessarily also a thought of species difference. The 'aspiration that humans might interact with an intelligence other than our own

³⁶ Sherryl Vint, *Animal Alterity: Science Fiction and the Question of the Animal* (Liverpool: Liverpool University Press, 2010), pp. 1-2.

and be transformed by it', which is a central narrative device in so much SF, is in many ways a variation on a much older, more earthly question: how are we to live amongst these other beings that we call animals, who resemble us in uncanny and disarming ways, but who seem finally resistant to interpretation?³⁷ SF invites us to imagine these encounters with nonhuman difference in technologically saturated contexts, and for this reason it is particularly germane to the questions of subjectivity, species and technology that I am concerned with here.

My analyses in this thesis have been shaped by an engagement with existing work in the discipline of literary animal studies. I am particularly indebted to Sherryl Vint's work on science fiction and animality, and Philip Armstrong's thorough account of the central role of human-animal difference in defining the properly modern, human subject in *What Animals Mean in the Fiction of Modernity*. These works cover a considerable expanse of historical time, whereas I hope to contribute to this ongoing scholarly conversation with a close engagement with the years following the Second World War. Armstrong's analysis of species difference in particular covers the formative years of western modernity in exacting detail. My contribution, on the other hand, traces what happens to human-animal difference when the hallmarks of high modernity are attenuated in a late modernity in which technological reason has replaced autonomous subjectivity, and a certain autonomic logic in the new technologies themselves threatens to marginalise human agency.

One of my tasks in this thesis will therefore be to enrich animal studies' account of the relationship between animals and modernity by revising this cultural-historical narrative in the light of a Cold War sensibility that is attuned to the disappearance or the impossibility of modernity proper. At the same time, I aim to contribute to Cold War criticism through my contention that its key preoccupations – including individualism and mass culture, social conformism, technological anxieties and nuclear conflict – are articulated through a discourse of species that has remained largely unexamined. To contextualise this argument, it will be useful to begin with a brief overview of several important strands of theoretical inquiry that have guided my investigations.

The intellectual and literary culture of the postwar period was dominated by fears that humanist subjectivity was in danger of disappearing, and in this it anticipated (albeit in a more anxious key) some of the central themes of the twenty-first century critical theorists that have informed my work. Since the later decades of the twentieth century, the general tendency of critical theory has been to undermine the sovereign subject that provided the political as well as

³⁷ Vint, *Animal Alterity*, p. 227.

the philosophical foundation of humanist thought. A broad swathe of theory influenced by poststructuralism, and by the work of Jacques Derrida in particular, worked to dethrone the autonomous subject by challenging the presumed transparency of language on which conventional theories of subjectivity were founded.³⁸ After Derrida, language could no longer be understood as an instrument wielded by a sovereign subject; rather, language exceeded and even constituted the subject. Similarly, Michel Foucault's contemporaneous work argued that the subject was not the author but rather the effect of the discourses of the human sciences.³⁹

The linguistic and discursive turns inaugurated by this work diminished the human subject, but, Derrida's later work excepted, for the most part it did not attempt to place this theoretical challenge to humanism into conversation with a thought of the nonhuman.⁴⁰ The poststructuralist critique of subjectivity remained preoccupied with variously mourning or dismantling a subject who had always been assumed to be human. In this way, as Cary Wolfe points out, theoretical antihumanism followed in the footsteps of the humanism it critiqued by 'repressing the question of nonhuman subjectivity'.⁴¹

More recently, this theoretical critique of the subject has been reoriented towards the nonhuman through the emergence of posthumanist theory. Early posthumanism took up the question of technology as an alternative or successor to the classical subject. In *How We Became Posthuman*, N. Katherine Hayles reads developments in postwar science (in particular informatics and cybernetics) which tended towards the technological dispersal of the subject and left little room for liberal subjectivity. After cybernetics, claims Hayles, 'humans were to be seen primarily as information-processing entities who are *essentially* similar to intelligent machines'.⁴² If posthumanist theory does not exactly diagnose the subject as machinic in this way – it leaves room for a thought of embodiment which disappears in the new science, as we shall see – it remains interested in demonstrating the non-autonomy of the subject, and indeed

³⁸ Derrida's earlier works *Of Grammatology*, trans. by Gayatri Chakravorty Spivak (Baltimore: Johns Hopkins University Press, 1997) and *Writing and Difference*, trans. by Alan Bass (London: Routledge, 2001) may be taken as broadly representative of this tendency, though parallel revisions of subjectivity were undertaken in several adjacent theoretical fields of inquiry.

³⁹ This claim runs throughout Foucault's otherwise heterogeneous body of work, from his early *The Archaeology of Knowledge* (London: Routledge, 2002) through the later genealogical investigations into sexuality, discipline and biopolitics.

⁴⁰ Derrida's best known contribution to what he terms 'the question of the animal' are the posthumously published *The Animal That Therefore I Am*, ed. by Marie-Louis Mallet, trans. by David Wills (New York: Fordham University Press, 2008), and *The Beast and the Sovereign* seminars, ed. by Michel Lisse and others, trans. by Geoffrey Bennington, 2 vols (Chicago: University of Chicago Press, 2011). The edited collection *The Animal Question in Deconstruction*, ed. by Lynn Turner (Edinburgh: Edinburgh University Press, 2013), provides a thorough overview of recent developments in Derridean animal studies.

⁴¹ Cary Wolfe, *Animal Rites: American Culture, the Discourse of Species and Posthumanist Theory* (Chicago: University of Chicago Press, 2003), p. 1.

⁴² N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999), p. 7.

the subject's limitation by a certain automaticity. Hayles's contribution shows that these critical-theoretical themes are already indigenous to the technoscientific culture of the postwar period.

The recognition that technology can vie with, disperse or substitute for the human subject is a valuable addition to the theoretical critique of the subject, and it is one which my own analyses in this thesis will draw upon extensively. Posthumanist theory complicates the critique of the subject by insisting on the possibility of other, nonhuman subjectivities, and in doing this it undertakes the difficult ethical and political labour of resisting the human-centred (or anthropocentric) presumptions of its intellectual inheritances. As Matthew Calarco has claimed, 'Philosophy can no longer in good conscience ground itself on the assumption that human perspectives and human interests constitute the primary locus for thought'.⁴³ The posthuman turn places the fundamental assumptions concerning who (or what) can constitute a subject into question, and this theoretical project necessarily raises the question of the animal alongside the question of technology.

The work of Wolfe and Calarco marks an explicit turn towards the animal within posthumanism and critical theory, and Calarco in particular seeks to place the posthumanist critique of subjectivity into dialogue with developments in animal ethology. He argues that

a displacement has occurred in the humanities and social sciences, where the traditional marks of the human (articulate speech, knowledge of death, consciousness, and so on) have been shown either to exist in a similar form among nonhuman animals or not to exist among human beings in the manner that traditional discourses had posited.⁴⁴

Our growing knowledge of nonhuman behaviours reveals that animals are far more capacious than had formerly been imagined, and at the same time developments in critical theory compel us to recognise that the sovereign self-sufficiency and autonomy of the classical subject is in many ways illusory. In posthumanist theory, the critique of the subject joins with a post-Darwinian sensitivity to our biological continuity with nonhuman animals; and as Tom Tyler has pointed out, it was Darwin who first showed 'just how specious the notion of species can be'.⁴⁵ Humanism's demarcation of a rigid and hierarchical human-animal distinction appears rather less secure after the posthuman turn, and for this reason this thesis cultivates a methodological agnosticism about the existence of ontologically meaningful species difference.

⁴³ Matthew Calarco, *Zoographies: The Question of the Animal from Heidegger to Derrida* (New York: Columbia University Press, 2008), p. 63.

⁴⁴ Calarco, *Zoographies*, p. 3.

⁴⁵ Tom Tyler, *CIFERAE: A Bestiary in Five Fingers* (Minneapolis: University of Minnesota Press, 2012), p. 247.

A still more radically posthuman ontology is developed in the work which has recently emerged under the banner of the ‘new materialism’. This heterogeneous theoretical assemblage shares a common orientation towards the nonhuman, rejecting the question of ‘nonhuman subjectivity’ (as it is sometimes posed in animal studies) in favour of theorising the non-subject.⁴⁶ Jane Bennett’s *Vibrant Matter: A Political Ecology of Things* is perhaps the most influential monograph to be associated with this movement.⁴⁷ Like many other posthumanist theorists, Bennett is not especially interested in the human subject. She cultivates a similar agnosticism to my own, seeking ‘to bracket the question of the human’ (p. ix). This bracketing of the subject is not merely methodological, but is rather a component in a political-ontological intervention. As she points out,

the philosophical project of naming where subjectivity begins and ends is too often bound up with fantasies of a human uniqueness in the eyes of God, of escape from materiality, or of mastery of nature; and even where it is not, it remains an aporetic or quixotic endeavour. (ibid.)

Bennett’s project aims at a revaluation of materiality, and she rejects ‘the idea of matter as passive stuff; as raw, brute, or inert’ (p. vii). She refuses ‘the habit of parsing the world into dull matter (it, things) and vibrant life (us, beings)’ (ibid.). Bennett elaborates a vital materialism which is receptive to the ways in which nonhuman actants (the term is Bruno Latour’s) make a difference, produce surprising effects, and resist our efforts to reduce them to docile instrumentality.

This last point is particularly salient to my analyses of Cold War culture. The irreducibility of technology to pliable instrumentality acts as an affront to the technological humanism which prevailed in Cold War culture. As I will show in detail in Chapter Four, the Cold War state relied upon a model of the subject which could reliably assert its sovereignty over the military-technological networks it notionally controlled (nuclear weapons systems, for example), but its control was always haunted by the possibility of failure; that is, by the possibility that the networks of nonhuman actors it presided over might act quasi-autonomously, in ways that short-circuit human agency, and with catastrophic results. From Bennett, I derive an expanded

⁴⁶ A qualification is necessary here. ‘Nonhuman subjectivity’ is most often associated with animal rights theory, which insists that at least some animals have certain morally significant traits in common with human subjects. Research in animal studies which is influenced by posthumanist theory tends to use the concept of ‘nonhuman subjectivity’ under erasure, as it were, as part of a generalised scepticism towards the theoretical and political usefulness of a vocabulary of subjectivity. The tension between the subject-oriented animal rights discourse and the posthumanist critique of subjectivity is usefully mapped in Colleen Boggs, *Animalia Americana: Animal Representations and Biopolitical Subjectivity* (New York: Columbia University Press, 2013), pp. 3-10.

⁴⁷ Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham and London: Duke University Press, 2010). Further references will be given in the text. A broader overview of the new materialism is available in the collection *New Materialisms: Ontology, Agency and Politics*, ed. by Diana Coole and Samantha Frost (Durham and London: Duke University Press, 2010).

conception of agency which encompasses human, animal and technological actants. As she argues, 'a lot happens to the concept of agency once nonhuman things are figured less as social constructions and more as actors, and once humans themselves are assessed not as autonyms but as vital materialities' (p. 21). Her model of a 'distributive agency' which comprises 'a confederation of human and nonhuman agents' (ibid.) is well suited to understanding the crises of technological humanism in postwar culture.

If vital materialism can usefully enhance attempts to think of nonhuman agency as comprising both animate and technological actants, with this procedure of flattening the ontology of the nonhuman it also runs the risk of missing the specificity of animal life. A theoretically indispensable return to the organicity of the living animal is provided by animal studies' orientation towards embodiment as the ultimate horizon of both human and animal life. In Jeremy Bentham's appeal for an animal ethics, and in particular, in his signal question "Can they suffer?", Jacques Derrida discovers the passivity of the living body as the foundation of ontology and, especially, of ethics. For Derrida, the exposure of the body to injury is 'the most radical means of thinking the finitude that we share with animals, the mortality that belongs to the very finitude of life, to the experience of compassion'.⁴⁸ A concern with fleshly finitude as the more-than-human horizon of suffering pervades mid-century cultural responses to technological violence. In Kurt Vonnegut's *Slaughterhouse-Five, Or The Children's Crusade* (1969) for instance, protagonist Billy Pilgrim finds refuge from the firebombing of Dresden inside 'an echoing meat locker'. With 'cattle and sheep and pigs and horses hanging from iron hooks' for company, Billy hides as the civilian population of Dresden is killed.⁴⁹ Francis Bacon's postwar 'meat paintings' similarly responded to the collective trauma of the Second World War by underscoring the visceral continuity of human and animal life. As he notes in an interview with David Sylvester, 'we are meat, we are potential carcasses. If I go into a butcher shop, I always think it's surprising that I wasn't there instead of the animal.'⁵⁰ This focus on the equality of bodily finitude across species has been developed into a point of departure for a radical animal ethics in the recent work of Ralph R. Acampora and Anat Pick.⁵¹ The new materialisms tend to flatten bodies and technologies into an undifferentiated continuum of nonhuman agency, and this is certainly at least strategically useful for responding to a technological humanism which would arrogate agency as the sole preserve of the human. My concern is that this ontology elides the

⁴⁸ Derrida, *The Animal That Therefore I Am*, p. 28.

⁴⁹ Kurt Vonnegut, *Slaughterhouse-Five, or The Children's Crusade: A Duty-Dance with Death* (London: Vintage, 2000 [1969]), p. 120.

⁵⁰ Francis Bacon, cited in Matthew Calarco, 'Identity, Difference, Indistinction', *CR: The New Centennial Review*, 11.2 (Fall 2012), 41-60 (p. 60).

⁵¹ Ralph R. Acampora, *Corporal Compassion: Animal Ethics and Philosophy of Body* (Pittsburgh: Pittsburgh University Press, 2006); Anat Pick, *Creaturely Poetics: Animality and Vulnerability in Literature and Film* (New York: Columbia University Press, 2011).

particularity of a bodily suffering which was everywhere increasing in the postwar period, as in our own time. In centralising the 'living body—material, temporal, and vulnerable', the discourse of finitude supplies theoretical tools to think vulnerability as something *opposed* to – and captured by – the new technologies which expose human as well as animal bodies to unprecedented violence.⁵²

Modernity, as conventionally understood, entailed a thoroughgoing instrumentalisation of the nonhuman world. The institutional sites and spaces where human and animal lives meet become, for this reason, exemplary locations for the deployment of novel strategies of instrumentalisation. As Armstrong points out, 'under modernity, all the human structures that circumscribe animal life – farms, zoological parks, slaughterhouses, fisheries, nature reserves – become sites for scientific', and, we might add, technological 'manipulation.'⁵³ In a postwar literary and intellectual culture which was acutely sensitive to the hegemony of technological rationalisation, these spaces become key imaginative locations where the changing relationship between technology and the living body is remapped. For this reason, my thesis begins by reading the first two of Armstrong's sites of enclosure as test cases for tracing the transformation of subjectivity and species difference by the new technological forces.

Chapter One turns to the literary farm, which functioned as a precarious refuge from the deleterious effects of technological reason. Rooted in the soil, agrarian life was valued as a counterpoint to a rootless, imperious modernity. The mid-century farm, in its literary manifestation, negotiated the tension between on the one hand an ideal of an integral and organic relation between technology and animal life, and on the other hand, a political-economic imperative towards technological rationalisation which thoroughly captured nonhuman life even as it destroyed traditional modes of subjectivisation. The subject was no longer rooted in the soil but became instead the object of machinic development; no longer was the animal a partner in a shared lifeworld, but the organic capital of economic calculation. I read George Orwell's *Animal Farm* (1945) as an elegy for the vanishing traces of the pre-modern, and R.S. Thomas's early poetry as a poetics of finitude where both human and animal life are exposed (albeit unequally) to necessity and mortality. Though both of these texts are concerned with the accelerating violence against animals in late modernity, I contend that this concern is secondary to their fears for the future of specifically human subjectivity in a world where the connection to the soil is being erased by mechanisation. In their construction of the farm as an extra-historical

⁵² Pick, *Creaturely Poetics*, p. 5.

⁵³ Armstrong, *What Animals Mean*, p. 181.

refuge which is encroached upon by history (instantiated in the new technologies), they forget the historicity of the 'traditional' farm, and naturalise the instrumental violence against animals with which it is associated.

Chapter Two turns towards the zoo as a second interface between human and animal. Where the farm can serve as an imaginative refuge from modernity, the zoo is intimately associated with the processes of expansion which characterised modernity's attitude towards the nonhuman world. Typically located at the heart of the city (the exemplary space of modernity), the zoo is a space for the confinement of animal lives which have been procured through the expansion of western modernity as a global system of power—including, of course, those animals who were acquired following European colonial ventures. I read Angus Wilson's 1961 novel *The Old Men at the Zoo* as an engagement with the administrative and bureaucratic calculation which characterised the postwar turn to a technocratic politics. In Wilson's novel, the bureaucratic management of nonhuman life in the zoo is contrasted to an affective engagement with animals made possible by the relocation of human-animal encounters to a nature reserve intended to re-establish an authentic relation to the nonhuman. This refuge collapses under the military and technocratic exigencies of Cold War politics, and the second novel that I engage with, Brigid Brophy's *Hackenfeller's Ape* (1953), places the zoo still more firmly into relation with the technological imperatives of Cold War militarism. Her protagonist studies a rare ape in the zoo's holdings, hoping to document a previously unseen mating display. He is rudely interrupted when the ape is pressed into service as the test subject of a military rocket launch. In both novels, the personae of the zoo comprise a confederation of scientists, military researchers, technicians, and administrators; in short, the functionaries of a technologically-fixated postwar culture. This technocratic formation reproduces the logic of confinement which domesticates human as well as animal agency.

Chapter Three turns away from these sites of human-animal encounter to gauge the effects on the human subject of a perceived inhumanity in technological culture. Postwar humanists were anxious that the new media and technologies of diversion and recreation were militating against the individuality of the subject, reducing the distinctness of individual persons to an inhumanly uniform mass. In this chapter, I engage with the perceived dispersal of classical humanist subjectivity in the new technological culture, reading literary and theoretical attempts to reconstitute the human subject through the lens of a discourse of species. Ray Bradbury's *Fahrenheit 451* (1953) imagines a world where standardised subjectivity is mandated through the prohibition of literacy (which, through its capacity to cultivate individual variation, was the technological condition of properly human being). Bradbury's masses are more akin to animal species, unable to respond beyond learned clichés and utterly incapable of intellectual

reflection. At the same time, organic nature has become distorted, and animality, having become incorporated into technological processes, acts as an abject and strangely agentic threat throughout the novel. Just as humanist subjectivity is disappearing, so humanism worries that it might be superseded by new forms of nonhuman agency. In *Do Androids Dream of Electric Sheep?* (1968), Philip K. Dick imagines intelligent robots which almost parodically inhabit the space of agency, cognition, and wilful activity that had recently been vacated by the humanist subject. In both Bradbury and Dick, humans are restored to the status of sole agents and individuals only through the deployment of lethal violence against those nonhumans who would encroach on the boundaries of subjectivity.

In Chapter Four, I read this anxiety surrounding nonhuman agency in the context of the nuclear weapons programs which dominated the technological imagination in postwar culture. As Stanley Kubrick's *Dr. Strangelove* (1964) shows, the bomb threatened to destroy 'all human and animal life', and this equality of exposure to nuclear risk again diminished humanist narcissism. Reading *Dr. Strangelove* together with the military-strategic discourses of the Cold War state, I contend that nuclear culture was invested in a calculation of risk, where this procedure of calculation was figured as the instantiation of humanist reason. The ability of rational calculation to manage risk testified to the sovereignty of the human subject over 'his' environmental and technological milieu; but as Kubrick points out, we have never been human in quite this sense, and the failure of calculation is experienced as a return of a repressed inhumanity. I read this inhuman remainder as it is materialised (quite literally) in the radioactive megafauna of the 1950s monster movie. I then turn to John Wyndham's post-apocalyptic novel *The Chrysalids* (1955) to show how humanism's requirement of a 'normal' morphology as an anchor for its political projects is compromised by the disappearance of normality in a post-atomic age.

Whereas Chapters Three and Four imagine the anxieties of a humanism under threat from both animal and technology, Chapter Five dispenses with these fears of neganthropic dissolution in favour of a positive reformulation of humanist political community. I turn to the enthusiastic efforts of institutional humanism to formulate a concept of the human which would be capacious enough to include all human beings (the postwar turn towards universality, as instantiated in the Universal Declaration of Human Rights) while excluding all nonhuman life. I read the utopian cosmopolitanism of Ursula Le Guin in *The Left Hand of Darkness* (1969) as an attempt to imagine an expanded political community which can embrace difference while remaining emphatically humanist. I contend that difference cannot so easily be contained, and attempts to arrest the thought of community at the (newly-redrawn) species boundary will always prove aporetic. In particular, the central role of the politically-unmarked body (one

could say, the animal or the pre-technological body) in the postwar discourses of political humanism renders impossible attempts to make the political community coterminous with the human species.

Agriculture and the Trauma of Modernity

The Political Aesthetics of the Literary Farm at Mid-Century

Farm animals are being taken off the fields and the old lichen covered barns are being replaced by gawky, industrial type buildings into which animals are put, immobilised through density of stocking and often automatically fed and watered. Mechanical cleaning reduces still further the time the stockman has to spend with them, and the sense of unity with his stock which characterises the traditional farmer is condemned as being uneconomic and sentimental. Life in the factory farm revolves entirely round profits, and animals are assessed purely for their ability to convert food into flesh, or 'saleable products'.

—Ruth Harrison, *Animal Machines*¹

In the decades that followed the Second World War, agrarian life in Britain underwent a transformation which saw the disappearance of many traditional practices in the name of the rationalisation of production. Ruth Harrison's contemporary testimony exemplifies a wider anxiety about the disruptive effects of this intensification of agriculture on the relations between human and nonhuman, tradition and modernity, and ethics and technological reason. Her title, *Animal Machines*, gestures towards a new indistinction of ontological categories, as processes of ever-greater instrumentalisation render nonhuman bodies precisely as 'machines or blackboxes that convert feed into flesh, eggs, and dairy' in order to achieve greater profitability.² 'And as with all machines,' as James Stanescu points out, 'the question is never [what is] the appropriate use for that machine, but rather how we can utilize the machine to get what we want'.³ In their role as exemplary victims of the mechanisation of life, the fate of nonhuman animals became (and remains) one of the critical zones of contestation in the struggle to define the meanings and futures of technological modernity.

With her reference to 'the fields and the old lichen covered barns', Harrison appeals to a tradition of idealised representations of agriculture which locate the farm outside of history. The key task of this chapter will be to trace the links between this pastoral tradition of

¹ Ruth Harrison, *Animal Machines: The New Factory Farming Industry* (London: Vincent Stuart, 1964), p. 1.

² James Stanescu, 'Beyond Biopolitics: Animal Studies, Factory Farms and the Advent of Deading Life', *PhaenEx: Journal of Existential and Phenomenological Theory and Culture*, 8.2 (2013), 135-160 (p. 153).

³ Stanescu, 'Beyond Biopolitics', p. 154.

representation and the transformation of the material basis of contemporary agriculture, with a view to probing the politics and evasions of mid-century pastoral. (The appropriateness of identifying mid-century farm fictions with the 'pastoral tradition' will also be called into question.)

My analysis will focus on a reading of two prominent literary representations of agrarian life: George Orwell's *Animal Farm* and the early poetry of R. S. Thomas. These texts express hostility towards the violent demands made by technological modernity on the nonhuman world, and both Orwell's and Thomas's literary discourse troubles the absolute privilege of the human over the nonhuman which is associated with instrumental reason. Both texts use nonhuman animals as a way of articulating a critique of modernity, but I will argue that in each case, this apparent concern for the fate of the nonhuman world in modernity reduces to a more conventionally anthropocentric concern for a loss of identity; namely, strong masculine identities in a 'feminising' modernity, and a decline in national identity incited by a homogenising modern metropolitan culture. The conservative green masculinities and nationalisms of Orwell and Thomas act to displace a more radical critique of humanism which lies latent in each text, and which I aim to elaborate. In order to frame my readings, I shall turn briefly to the literary-critical tradition which responds most directly to questions of agrarian life and its representation.

Pastoral Criticism and the Question of the Animal

The scholarship of Paul Alpers, Terry Gifford and Raymond Williams has contributed much to our understanding of pastoral. I would like to suggest, however, that even the explicitly green analysis of pastoral offered by Gifford remains inattentive to the embodied presence of nonhuman animals in agrarian practice and representation. In *Pastoral*, Gifford offers a critical survey of pastoral conventions from Hesiod to postmodernism. Despite the formidable scope of his project, Gifford scarcely mentions one of the defining practices of agrarian life: the production of consumable goods from the bodies of nonhuman animals. Instead, Gifford describes the task of contemporary green poetry as a search for 'a language that can convey an instinctive unity [with nature] that is at once both prior to language and expressed by a language that is distinctly human.'⁴ Setting aside the theoretically problematic identification of nature with the pre-linguistic, Gifford's aporetic project seeks a reconciliation of the human and the nonhuman world which would nonetheless retain the basic structures of humanism in the

⁴ Terry Gifford, *Pastoral* (Abingdon: Routledge, 1999), p. 8.

form of an ontologically decisive emphasis on the exceptionality of human language use.⁵ Poetry is enlisted to heal our alienation from nature, even as our capacity for representation reinscribes our difference and distance from the nonhuman world.

Paul Alpers's exhaustive *What is Pastoral?* is more emphatically humanist in its defence of pastoral. Alpers claims that the conventions of pastoral 'convey the sobering truth that literature can give us our sense of human worth only if we have the kind of space [...] that is represented by the pleasures of the *locus amoenus*', that is, the pastoral space of retreat that can palliate the complexities and vicissitudes of metropolitan life.⁶ Alpers's emphasis on the humanistic uses of pastoral is challenged by Lawrence Buell's ecocritical reevaluation of the genre:

As [the] ecocentric repossession of pastoral has gathered force, its centre of energy has begun to shift from representation of nature as a theatre for human events to representation in the sense of advocacy of nature as a presence for its own sake.⁷

This shift towards a concept of an autonomous and intrinsically valuable nonhuman world represents a welcome attempt to challenge the anthropocentrism of the humanist tradition in pastoral criticism. However, this green turn has yet to generate much critical attention to the nonhuman others who populate and co-constitute the agrarian community; rather, the focus has tended to be (in a conventional ecocritical key) on the idea of the land.

As a corrective to the erasure of nonhuman subjectivity in pastoral criticism, I shall pursue a reading strategy which is in debt to the anti-anthropocentric ethics outlined by Ralph Acampora in *Corporal Compassion*.⁸ This ethics, which takes 'inter-corporal cohabitation' (p. 78) as its point of departure, can be fruitfully deployed to apprehend the farm as a multi-species community of labourers who share an embodied labour power and an exposure to sickness and death, even if these exposures to harm are unevenly distributed across species lines. By cultivating attention to labour power and embodiment, and by insisting that neither is the exclusive property of humans, I aim to read Orwell and Thomas against the prevailing anthropocentrism which has inflected even ecocritical readings of pastoral. The question of labour is, of course, especially apposite to a reading of *Animal Farm*, and by way of introduction

⁵ On the problematic identification of nature with the pre-linguistic, see Louise Westling's *The Logos of the Living World: Merleau-Ponty, Animals, and Language* (New York: Fordham University Press, 2014), where Westling develops an argument for the continuity of nonhuman semiotic practices and human language.

⁶ Paul Alpers, *What is Pastoral?* (Chicago: University of Chicago Press, 1996), p. 6.

⁷ Lawrence Buell, *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture* (Cambridge, MA: Harvard University Press, 1995), p. 52.

⁸ Ralph R. Acampora, *Corporal Compassion: Animal Ethics and Philosophy of Body* (Pittsburgh: University of Pittsburgh Press, 2006).

to Orwell's novel, I would like to turn now to Raymond Williams's influential reading of labour and agrarian culture.

Williams's valuable contribution to pastoral criticism argues that many works of pastoral (and by extension, many critical readings of pastoral) are compromised by an evasion of the historical specificity of agrarian forms of life, and a lack of attention to the role of these historically-specific material conditions in shaping rural narratives. Against readings which would flatten representations of agrarian life into a generic and extra-historical pastoral, he insists that 'the real history [of the countryside] has been astonishingly varied. The "country way of life" has included the very different practices of hunters, pastoralists, farmers and factory farmers'.⁹ Williams turns a materialist eye to the relations of production which characterise this heterogeneous set of practices. My analysis is deeply indebted to this materialist tradition, though I aim to reevaluate the role played by nonhuman animals as producers and labourers in farm communities.

Elaborating his critique of the anti-materialist basis of conventional pastoral, Williams writes that in the traditional pastoral poem,

the actual men and women who rear the animals and drive them to the house and kill them and prepare them for meat; who trap the pheasants and partridges and catch the fish; who plant and manure and prune and harvest the fruit trees: these are not present; their work is all done for them by a natural order.¹⁰

If a convention of traditional pastoral has been to marginalise human labour and represent nature in an almost theological key as a kind of super-abundant plenitude, a materialist reading insists instead on the re-presentation of labour in the process of production. In the quotation above, however, the anthropocentric limits of Williams's approach become clear. His analysis fails to account for the nonhuman actors who populate and co-constitute the farm community. Whether they are provided for consumption by a benevolent and super-abundant nature or by the arduous labour of a rural *proletariat*, the status of animal bodies *as* bodies, as lives that have been figured as objects for use, is never taken into consideration.

Recognising and responding to this erasure of nonhuman subjectivity demands the theoretical readjustment of the critical and political project of cultural materialism. If an implicit motivation for Williams's Marxian analysis is the desire to secure a more equitable distribution of labour and wealth, what might it mean to refuse to prejudge questions of community and species? Who, after all, can be a subject of the community of owners and producers, and who (or what) must

⁹ Raymond Williams, *The Country and the City*, 2nd edn (London: Hogarth Press, 1985), p. 1.

¹⁰ Williams, *The Country and the City*, p. 32.

belong on the other side of the ontological divide, belonging to ‘mere’ nature as a resource to be consumed? The refusal to presume that the community of owners should be coextensive with the community that we have come to call – perhaps problematically – universal humanity, is one possible reading strategy for greening narratives of labour and nonhuman life. With this in mind, I turn now to a reading of perhaps the most extensive literary engagement with questions of class and species, George Orwell’s *Animal Farm*.¹¹

Animal Farm: Species, labour and modernity

Labour can organize itself and push for higher wages, but what of the resistance from the animals?

—R. Kilgour, ‘The Application of Animal Behaviour’¹²

As he was writing *Animal Farm*, George Orwell was living through a period which would decide not only the fate of European liberal democracy, but also the relations between land, labour and community. After a lengthy depression in the first decades of the twentieth century, agriculture in Britain had been stimulated into renewed activity by the demands of the war economy. The commandeering of resources for the war effort worked to construct agricultural capacity as a collective resource of the national community in a manner which would anticipate the postwar social democratic reforms of Clement Attlee’s government.¹³ Public information films exhorted rural labourers to contribute to the collective effort of a society at war, and County War Agricultural Committees emerged to coordinate this production drive.¹⁴

With the redesignation of agriculture as national capital, affective and material relations between British citizens and their land were transformed, and each citizen became a stakeholder in the nonhuman world. In *Animal Farm*, Orwell imagines this expanded concept of community still more radically.¹⁵ He dispenses with the anthropocentric logic that allowed the

¹¹ George Orwell, *Animal Farm* (London: Penguin, 2008 [1945]). *Animal Farm* will hereafter be cited in the body of the text.

¹² R. Kilgour, ‘The Application of Animal Behaviour and the Human Care of Farm Animals’, *Journal of Animal Science*, 46 (1978), 1478-1486 (p. 1478).

¹³ David Harvey points out that ‘a social and moral economy (sometimes supported by a strong sense of national identity) was fostered through the activities of an interventionist state’ through the postwar decades, *A Brief History of Neoliberalism* (Oxford: Oxford University Press, 2005), p. 11. In practice this meant the codification in state policy of an already existing moral attitude towards the nonhuman world, namely that it is the collective *property* of the human community.

¹⁴ *Country Town*, dir. by Julian Wintle (1943); B. A. Holderness, *British Agriculture Since 1945* (Manchester: Manchester University Press, 1985), p. 7.

¹⁵ Orwell’s interest in politics and the limits of community are evidenced in a critical question put before his revolutionary soviet of animals: “‘Are rats comrades?’” asks Old Major (p. 6), and their status on the margins of economic production initially puts their inclusion in doubt, referencing fascist arguments

postwar technocrat, Solly Zuckerman, to argue for ‘the rebuilding [of] the national herd’, presenting instead a vision of agrarian life in which animals could be stakeholders in the social wealth.¹⁶ Before we can approach the task of reevaluating the potential of *Animal Farm* as a pro-animal or green text, however, it will be necessary to engage with the form of Orwell’s novel with a view to exploring the ways in which this form has obscured potentially anti-anthropocentric readings.

We might begin by considering the relationship between the text’s allegorical form and the exclusion of actually existing nonhuman animals from the political domain. Responding to the feature film based on Orwell’s novel, one commentator notes that the particular virtues of the animated animal story allow it to convey ‘important ideas in accessible form [...] without *apparently* carrying an ideological or political position.’¹⁷ This semblance of political neutrality attracted the attention of the CIA, who covertly sponsored the filming of *Animal Farm* as a contribution to the cultural Cold War. The conventionally pre- or anti-political character of animal narratives in general, and farm stories in particular, was seen to make Orwell’s text an excellent candidate for instrumentalisation as propaganda.

The generic conventions of allegory encourage readings which mark a sharp break between the literal and figurative meanings of the text. In the case of *Animal Farm*, the animal story functions as the literal level of meaning which stands for – and yet helps to obscure – the real referent: the fate of proletarian revolution in Russia. The spatial differentiation of the urban *polis* from the rural space of retreat which characterises conventional pastoral is here redoubled by a formal differentiation between figurative and literal strands of meaning. The apparently ideologically innocent, conventionally apolitical quality of the animal fable is appropriated to represent one of the decisive political events of the twentieth century. The effect of this formal strategy, which the CIA recognised so clearly, is to naturalise anti-communism by associating it with the perceived ahistorical universality of agrarian life, in which the farm setting serves to place the narrative outside history and oppose it to the turbulent reality of contemporary political struggles. In the words of Orwell’s friend T. R. Fyvel, *Animal Farm* is set in a ‘timeless Edwardian

against Jewish mercantilism. The animals’ strong consensus for their inclusion anticipates the expansion of notions of community in the universal humanism of the postwar settlement. I will explore the links between humanism, community and species difference in my final chapter.

¹⁶ Solly Zuckerman, *Monkeys, Men and Missiles: An Autobiography 1946-88* (London: Collins, 1988), p. 116.

¹⁷ Geoff Brown, qtd. in Daniel J. Leab, *Orwell Subverted: The CIA and the Filming of Animal Farm* (University Park, PA: Pennsylvania State University Press, 2007), p. 137, emphasis in original. My analysis of the afterlife of *Animal Farm* as a Cold War text is deeply indebted to Leab’s painstaking primary research.

landscape'.¹⁸ Fyvel's contradictory formulation exposes the ideological basis of the apparently apolitical pastoral; the impossibility of being at once 'timeless' and 'Edwardian' points to the inadequacy of readings which seek to dehistoricize farm narratives.

Allegory here serves a double function: it partially disguises the more crudely propagandistic aspects of anti-communist narratives, and, at the same time, it paradoxically works against the possibility of recognising animals as subjects of both narrative discourse and political representation, as Raymond Williams himself points out: 'In *Animal Farm*, the geniality of mood, and the existence of a long tradition of human analogies in animal terms, allow us to overlook the point that the revolution that is described is one of animals against men.'¹⁹ Literary animal studies can offer a corrective to the anthropocentrism of cultural materialism; criticism should insist on the historicity of pastoral, and on the relationship between pastoral narratives and material conditions. In privileging the literal rather than the figurative layer of the text (that is, the animal fable rather than the Russian revolution), my aim is *not* to recover what Richard Smyer has called its 'prepolitical' meaning. A properly pro-animal orientation requires us to reject nostalgia for 'the more vital, emotionally healthy and socially cohesive' character of an extra-historical agrarian past.²⁰ What is called for instead is the recognition that the presentation of literary pastoral as apolitical and ahistorical itself conceals an implied anthropocentrism.²¹ My reading refuses the opposition between politics and pastoral, insisting instead that this opposition depends upon an anthropocentric definition of the political which takes for granted the exclusion of the interests of nonhuman. Taking animals seriously in literary criticism demands the recognition that the pastoral is political.

It is perhaps unsurprising that the legacy of an author of Orwell's canonical standing would be claimed by commentators representing various and competing political traditions. Indeed, the reception history of Orwell's work is in large part comprised of a struggle between those who would recruit him as a liberal ally to the West's Cold War and those who stressed his radical, sometimes revolutionary socialism.²² From the perspective of pro-animal literary criticism, Orwell's legacy remains ambiguous. While it would be anachronistic to hold Orwell to the standards of rights-based or post-rights pro-animal thought, some recent criticism has argued

¹⁸ T. R. Fyvel, *George Orwell: A Personal Memoir* (London: Hutchinson, 1983), p. 196.

¹⁹ Raymond Williams, *Culture and Society 1780-1950* (Harmondsworth: Penguin, 1963), p. 283.

²⁰ Richard I. Smyer, *Animal Farm: Pastoralism and Politics* (New York: Twayne, 1988), p. 25.

²¹ In insisting on this theoretical strategy, I'm aware that I'm reading Orwell against his own avowed dissociation of nature and politics. His essay *Some Thoughts on the Common Toad* (London: Penguin, 2010) praises the return of Spring as heralding a nonhuman agency which is irreducible to the traumatic political struggles of contemporary Europe.

²² See John Rodden's exhaustive study, *George Orwell: The Politics of Literary Reputation* (New Brunswick: Transaction, 2009).

for a limited pro-animal orientation in Orwell's fiction. Much has been made of Orwell's remarks in the preface to the Ukrainian edition of *Animal Farm*, in which he recounts his bearing witness to the beating of a draft horse.²³ This encounter leads him to

analyse Marx's theory from the animals' point of view. To them it is clear that the concept of a class struggle between humans was pure illusion, since whenever it was necessary to exploit animals, all humans united against them.²⁴

This attentiveness to the suffering of nonhuman animals finds expression in *Animal Farm* through the porcine Lenin, Old Major, who reminds his comrades that 'our lives are miserable, laborious and short. [...] The very instant that our usefulness has come to an end, we are slaughtered with hideous cruelty' (p. 3). If, as Robert McKay has claimed, cultures of meat-eating rely on the invocation of 'a quasi-pastoral ideal in which meat is produced without the visible reality of death,' then Orwell's animal fable transgresses that culture's related prohibition (or at least, wariness) of representations of utilitarian violence.²⁵

We should notice, however, that though the *recognition* of nonhuman suffering is a precondition for ethical engagement, it does not in itself imply a positive ethical commitment. Orwell's contempt for contemporary pro-animal movements is made explicit in *The Road to Wigan Pier*, where he describes the typical socialist as 'a prim little man with a white collar job, usually a secret teetotaller and often with vegetarian leanings.' Orwell's contempt for the 'pacifist and feminist' 'food-crank[s]' who comprise the socialist parties of the thirties and forties opposes the perceived effeminacy of the organised socialist movement to the imagined virility of the authentic proletariat, a curiously gendered rhetoric to which I will have cause to return.²⁶

The novel approaches a recognisably pro-animal politics most clearly in its representation of technology's pernicious effects on nonhuman life. Resistance to technology is a sustained theme in the text, and in the context of a rapid mechanisation of agriculture in the mid-twentieth century, this can be read as an ethical response to the damaging effects of a nascent industrial agriculture. In this, Orwell exemplifies the characteristically mid-century suspicion of instrumental reason – and its effects on the nonhuman world – that I will be tracing throughout this thesis. I suggest, however, that Orwell's affective response to animal suffering makes sense

²³ See Susan McHugh's reading of the literary-critical history of this passage in her *Animal Stories: Narrating Across Species Lines* (Minneapolis: University of Minnesota Press, 2011), p. 182.

²⁴ George Orwell, 'Author's Preface to the Ukrainian Edition of *Animal Farm*', *As I Please, 1943-1945*. Vol. 3, *The Collected Essays, Journalism, and Letters of George Orwell*. ed. by Sonia Orwell and Ian Angus. 4 vols (New York: Harcourt, 1968), pp. 401-406 (p. 406).

²⁵ Robert McKay, 'BSE, Hysteria and the Representation of Animal Death: Deborah Levy's *Diary of a Steak*' in The Animal Studies Group, *Killing Animals* (Urbana: University of Illinois Press, 2006), pp. 145-169 (p. 146).

²⁶ George Orwell, *The Road to Wigan Pier* (London: Penguin, 2001 [1937]), pp. 161-162.

only as a symptom of a generalised anxiety about technological modernity, rather than as a concern for animals as such.

In *Animal Farm*, technology and artifice function as the marks of oppression. The first taboo to be formulated by the revolutionary parliament of animals proclaims that “No animal must ever live in a house, or sleep in a bed, or wear clothes, or drink alcohol, or smoke tobacco, or engage in trade”; that is, no animal should share in the technological or artifactual fruits of human domination (p. 6). This first meeting of the animals, which represents the birth of a nonhuman political subjectivity, is dispersed by the repressive exercise of technology as an extension of human power. Farmer Jones’s gun scatters the animals, and this association between technology and human violence is reflected in one of the first acts of revolutionary justice meted out by the victorious animals:

The bits, the nose-rings, the dog-chains, the cruel knives with which Mr Jones had been used to castrate the pigs and lambs, were all flung down the well. The reins, the halters, the blinkers, the degrading nosebags, were thrown onto the rubbish fire which burned in the yard. So were the whips. All the animals capered with joy when they saw the whips going up in flames. (p. 13)

If technology is a key site of struggle between the animals and their human oppressors, it also comes to define the terrain of struggle *within* the animal community. The degeneration of the revolution is marked by the appropriation of human technologies by a privileged caste of nonhumans in the form of Orwell’s pig-bureaucrats. Susan McHugh is right to point out that ‘what makes pigs indistinguishable from humans is their coterminous dependence on and mystification of technology.’²⁷ The loss of revolutionary idealism begins as the pigs appropriate Jones’s harness room – the former storeroom of the technologies of domination – as a ‘headquarters’ for the study of ‘blacksmithing’ and other technological practices, and the degeneration of the revolution is completed by the pigs’ adoption of whips (pp. 20, 90).

Orwell’s representation of technology thus inverts a conventional humanism, in which our mastery of the nonhuman world is legitimated by the radical difference between it and ourselves. In this account, the human marks an ontological break with the nonhuman world by its supposedly unique capacity for the creation of technologies (including writing), which themselves become the instruments of the domination of nature. *Animal Farm*, and much of Orwell’s non-fiction, refuses the modern teleology of ever-increasing technological mastery,

²⁷ McHugh, *Animal Stories*, p. 183.

figuring it instead as a narrative of loss.²⁸ In Orwell's text, the violence of technological modernity is instantiated in the symbol of the windmill. Both factions of the animals' revolutionary leadership advocate the construction of an electric windmill which (it is claimed) will lessen the burden of physical labour demanded from the animals, but which in fact causes a pronounced intensification of labour culminating in misery and starvation. The windmill, then, exemplifies what Orwell sees as the false promises of technological modernity, representing both the electrification of the Soviet Union and the mechanisation of farming in the postwar period. It will be instructive to read this symbol against the practices of contemporary agriculture.

As historian Susan D. Jones notes, 'Animal husbandry became "animal science" in the interwar years, a speciality with its own university programs, journal, and national organisation.'²⁹ This shift transformed the technical and affective conventions for relating to animal life in agriculture, with nonhuman life now disclosed as biological material to be managed, and this management was to be achieved by the proliferation of new technologies of normalisation and control. Whether or not a historical analysis of agricultural production would bear out the conventional analysis of a decisive historical break with tradition, it was understood as such by a variety of mid-century writers and intellectuals from across the political spectrum, including Orwell and R. S. Thomas, but also the philosophers of the Frankfurt School and Martin Heidegger. For Frankfurt School philosopher Max Horkheimer, as for Orwell, this instrumental logic defined the U.S.S.R. no less than it did the capitalist West: 'Economic technocracy expects everything from the emancipation of the material means of production,'³⁰ claims Horkheimer with reference to the Soviet states, and indeed the Bolshevik Leon Trotsky claimed that

through the machine, man in socialist society will command nature in its entirety, with its grouse and its sturgeons. He will point out the place for mountains and for passes. He will change the course of the rivers, and he will lay down rules for the oceans.³¹

²⁸ See especially *The Road to Wigan Pier* and his later non-fiction, including especially *The Lion and the Unicorn: Socialism and the English Genius* (London: Penguin, 1982 [1941]), where Orwell's suspicion of technological modernity is articulated with his emergent English nationalism.

²⁹ Susan D. Jones, *Valuing Animals: Veterinarians and Their Patients in Modern America* (Baltimore: Johns Hopkins University Press, 2003), p. 99.

³⁰ Max Horkheimer, *Eclipse of Reason* (London: Continuum, 2004 [1947]), p. 41. Heidegger notoriously compared industrial agriculture to the Holocaust, claiming that 'Agriculture is now a mechanised food industry, in essence the same as the manufacture of corpses in the gas chambers and extermination camps.' He made this claim in the Bremen Lectures of 1949, which would later be published as 'The Question Concerning Technology' in 1954. Perhaps unsurprisingly, this remark was omitted from the printed version. For the citation and textual history of these lines, see Berel Lang, 'Heidegger and the Jewish Question: Metaphysical Racism in Silence and Word', in *Philosophers on Race*, ed. by Julie Ward and Tommy Lott (Oxford: Blackwell, 2002), pp. 205-221 (p. 211).

³¹ Leon Trotsky, *Literature and Revolution*, ed. by William Keach (Chicago: Haymarket Books, 2005 [1924]), p. 205.

Instrumentalism here names a fantasy of human omnipotence or anthropotheosis: the imposition of the *nomos* of human will and forms of order onto the formlessness of nonhuman matter; no longer God but technology moving upon the face of the waters. Through the socialist deployment of technology humanity achieves a sort of secular salvation, liberating itself from the constraints of both capital and intractable nature. As a primary space of interaction between artifice and the nonhuman world, the farm is a key site where this fantasy of technical sovereignty is put to use.

Horkheimer concurs with Orwell that the farm might be one space of resistance to these new regimes of instrumentalisation, even though the possibility of resistance is being rapidly attenuated by global economic forces. ‘The small farmer (the only farmer in the proper sense of the word) no less than the artisan is learning from personal experience that he has been born out of time’, he maintains.³² There are reasons to be suspicious of the claim that the mid-century intensification of agriculture marked the arrival of a wholly novel ethics of instrumentality. We might consider the early history of selective breeding of ‘meat animals’ for increased ‘yield’ as an instance of instrumentalisation that plainly pre-dates the mid-twentieth century proliferation of technologies for the management of nonhuman life.

Although Richard Twine has recently noted that ‘the specialisation of animal science during the 20th century [...] enabled a considerable degree of malleability’ in selective breeding, he goes on to point out that the biotechnology companies of the twenty-first century argue for a continuity between ‘old’ and ‘new’ biotechnologies.³³ It is certainly possible to read older agricultural practices in continuity with the more novel possibilities offered by ‘animal science’. Both involve the regulation of animal genotypes and reproductive agency for the economic benefit of their owners. The ‘old’ biotechnology of reproductive control and selective breeding dates to the origins of domestication, but was intensified by the privatisation of agriculture from the mid-eighteenth century in England, as Charles Darwin pointed out:

In the case of animals with separate sexes, facility in preventing crosses is an important element of success in the formation of new races—at least, in a country which is already stocked with other races. In this respect enclosure of the land plays a part.³⁴

The division of the land into discrete, privately owned fields enabled farmers to more effectively regulate sexual contact between animals, increasing the potential for the breeding of specialised

³² Max Horkheimer, *Critique of Instrumental Reason: Lectures and Essays Since the End of World War II*, trans. by Matthew J. O’Connell *et al.* (New York: Continuum, 1974 [1967]), p. 20.

³³ Richard Twine, *Animals as Biotechnology: Ethics, Sustainability and Critical Animal Studies* (London: Earthscan, 2010), p. 14.

³⁴ Charles Darwin, *On the Origin of Species by Means of Natural Selection*, ed. by Gillian Beer (Oxford: Oxford University Press, 2008), p. 34.

varieties of farm animals which were of greater economic utility. In a sense, then, instrumentality is not an innovation of the postwar farm; rather, it is coeval with domestication itself, and the processes of intensification, which certainly accelerated in the twentieth century, route back at least as far as the emergence of capitalist agriculture. The point of this qualification, as Twine notes, is not to defend the new practices of animal science by assimilating them to agricultural 'tradition'; rather, it is to suggest that instrumentality has always been central to the material practices of agriculture, and that therefore the construction of the farm as a refuge from instrumental reason by Orwell and Horkheimer is substantially compromised.

While it is ethically important to insist on the continuity of instrumentality across emerging and earlier forms of agriculture, in their material effects on agrarian life – not least on the lives and deaths of nonhuman animals – the new developments of the mid-twentieth century were undeniably a historical innovation: 'the huge operations in which food-producing animals increasingly lived their whole lives in the decades after World War II had no exact precedent', as Susan Jones suggests.³⁵ According to B. A. Holderness, postwar farming in Britain saw 'an immense investment in new equipment, electrical installation, implements, tractors, milking machines, pig and poultry units, cattle houses, milking parlours, etc.'; in short, the mechanisation of agriculture on a wide scale. These technological developments have left their mark on the nonhuman inhabitants of farms. As Holderness notes, 'in 1935-38 there were 675,000 farm horses, and still over half a million in 1944-46. A rapid decline set in soon after'. The war economy encouraged the replacement of draft animals with tractors, and over the course of the war, 'mechanized horsepower increased by 150 per cent'.³⁶

In *Animal Farm*, this technological transformation of agrarian culture is instantiated in the windmill, which promises to alleviate the labours of the animals while in fact only increasing them. The draft horse Boxer – whose 'one real ambition' was 'to see the windmill well under way before he reached the age of retirement' – works to construct the windmill until his labours cause him to become physically incapacitated (p. 74). Here Orwell seems to be responding (at least in part) to the contemporary erasure of draft animals from the agrarian scene by mechanisation. We should be wary, however, of reading this as a pro-animal turn in Orwell's fiction. Although our sympathies are engaged by Boxer, what is being lamented here is less the tragic death of an overworked animal, and more the displacement of a nostalgic image of agrarian life by industrialisation. The fate of the animal is subordinated to the perceived loss

³⁵ Jones, *Valuing Animals*, p. 100.

³⁶ Holderness, *British Agriculture Since 1945*, pp. 110, 113, 7.

(for *human* culture) of a simpler way of life. Towards the end of this chapter, I shall demonstrate how Boxer functions as an icon of masculine virility and post-romantic unity with the land. His being sold to the glue-makers reflects the devastating interaction of profit and nonhuman life, but this critique of instrumental violence towards the nonhuman world is blunted by the image's primary function as an elegy for gendered and 'pre-modern' identities made redundant by modernity.

In keeping with Orwell's suspicion of mechanisation and instrumental reason, *Animal Farm* marks the break between authentic and inauthentic modes of agrarian production by recourse to a narrative of technological alienation. Immediately following the animals' Rebellion, before the porcine technocrats had conceived of mechanising the farm, the animals' inability to use human-adapted technology means that they work 'in the ancient style and blow away the chaff with their breath, since the farm possessed no threshing machine'. The authenticity of 'ancient' tradition, undertaken without the mediation of technology, is counter-posed to the destruction of tradition represented by the 'chaff-cutter' which would be powered by electricity from the windmill (pp. 18, 32). 'Beasts of England', the animals' revolutionary anthem, likewise refers at once backwards to a tradition of agricultural authenticity, and forward to the anticipated utopia. This link to tradition is broken by the technological consummation of bureaucratic power, as the technocrat pigs announce the anthem's abolition upon definitively seizing power over the other animals. Carrying forward Orwell's critique of the violence of technological modernity, I shall now turn to the work of the post-war poet R. S. Thomas. Thomas's work extends Orwell's concern with the cost of modernity with a new emphasis on what Acampora has described as the 'inter-corporal cohabitation' of human and nonhuman in the agrarian community.³⁷ I argue that the value of Thomas's poetry for literary animal studies consists not in his sympathetic engagement with nonhuman life, but in his interrogation of the prestige of humanist subjectivity.

'Things Exist Rooted in the Flesh'

Nature, Continuity and Finitude in the Poetry of R. S. Thomas

Too far for you to see
 The fluke and the foot-rot and the fat maggot
 Gnawing the skin from the small bones,
 The sheep are grazing at Bwlch-y-Fedwen,
 Arranged romantically in the usual manner
 On a bleak background of bald stone.

³⁷ Acampora, *Corporal Compassion*, p. 78.

R. S. Thomas, 'The Welsh Hill Country'³⁸

The early poetry of R. S. Thomas emphatically resists the idealisation of agrarian life in traditional pastoral, focusing instead on an anti-pastoral thematic which casts the natural world as a space of bitter struggle and violence. Christopher Morgan has described Thomas's work as effecting a reconciliation between romanticism and realism.³⁹ His romanticism is marked by hostility to urban life, consumption and exchange. In 'Out of the Hills', he favourably contrasts the 'starved pasture' to the 'indolent shops' which line the 'indifferent streets' of the town; the 'chorus of coins' which the farmer brings to town on market day become his 'swift undoing' in the public houses of the corrupting town: 'the sudden disintegration / Of his soul's hardness' (p. 1). Thomas's realism, in Morgan's sense, is best demonstrated by his unflinching representation of disease, vulnerability and mortality as the ultimate horizon of biological life. In 'The Welsh Hill Country', cited above, Thomas undercuts the conventions of romantic pastoral, stressing the gap between the tradition of agricultural representation – in which the nonhuman world is 'arranged romantically' as an object for aesthetic contemplation – and the messy reality of agrarian life. The implied metropolitan reading public is 'too far' from the daily labour of the farm to appreciate this representational inadequacy, in Thomas's account (p. 22). His diseased sheep are a grotesque break with pastoral convention, articulating what for Thomas is the universal and transhistorical grounding of agriculture not in the conventional thematics of natality, rebirth and regeneration, but rather in finitude, vulnerability and decline.

I have suggested that Thomas conceptualises agrarian culture as a transhistorical unity, but this claim demands immediate qualification. For Thomas, as for Orwell, agriculture exists in the borderlands between nature and history. In both authors' work, the concept of the farm is defined by the tension between its function as a notionally extrahistorical refuge from political life, and as a historical space which is especially vulnerable to the encroachment of modern technological rationality. We have already seen how, in *Animal Farm*, the novel's form invites a reading opposing the pastoral to the political, the timeless agrarian world to the antagonisms of class struggle and revolution. Similarly, in 'For the Record', Thomas relates how the peasant farmer Iago Prytherch – a recurring character in his poetry – spent the Second World War tilling

³⁸ R. S. Thomas, 'The Welsh Hill Country', from *Collected Poems 1945 – 1990* (London: Phoenix, 2000), p. 22. Quotations from Thomas's *Collected Poems* shall hereafter be cited in the body of the text.

³⁹ Christopher Morgan, *R. S. Thomas: Identity, Environment, Deity* (Manchester: Manchester University Press, 2004), p. 51.

his hill farm in Wales.⁴⁰ On his farm, Prytherch inhabits 'the same world as before / Wars were contested.' The farmer was

on the old side of life,
 Helping it through the dark door
 Of earth and beast, quietly repairing
 The rents of history with [his] hands.
 (p. 164)

Despite its grounding in a negative thematics of finitude and mortality, Thomas's farm is opposed to and privileged over the world of human political conflict, from which it is here both geographically and conceptually removed. The permanence and (perceived) transhistoricality of agricultural labour form a durable counter-point to the violence of modernity, even assuming a palliative or restorative aspect in its capacity to repair 'the rents of history'.

This retreat from history is crucial to the conceptual work performed by agriculture in Thomas and Orwell. Despite this, both authors share a paradoxical concern with historical innovation and novelty in farming practices. For Orwell, as we have seen, the coming mechanisation of farming is instantiated in *Animal Farm's* electricity-generating windmill. The novel represents this technological innovation as marking the dissolution of 'the ancient style' of agricultural labour (p. 18). Similarly, in Thomas's poetry, the mechanisation of farming during and after the war emerges as an unprecedented historical innovation which severed the farmer from his grounding in the nonhuman world:

Ah, you should see Cynddylan on a tractor.
 Gone the old look that yoked him to the soil;
 He's a new man now, part of the machine,
 His nerves of metal and his blood oil.
 ('Cynddylan on a Tractor', p. 30)

For both authors, the danger posed to traditional farming by mechanization is understood as an eruption of history in a fundamentally extrahistorical space. In the discourse of Trotsky, cited earlier, the technologically-facilitated remaking of nature becomes something like the historical destiny of future (socialist) humanity. Taking this narrative of technophilic optimism at its word, Orwell and Thomas identify history and modernity with technological development,

⁴⁰ The recurring use of Iago Prytherch in Thomas's poetry works to construct a kind of generic and universal archetype of the peasant farmer. This strategy of deindividualisation challenges the hegemony of humanist liberal individualism, stressing a concept of identity which is rooted in an embeddedness in the nonhuman world, rather than in the agency and autonomy of the individual subject. I will return to this theme later in the thesis, with readings of the figure of 'the mass' in postwar social criticism, and of the generic humanity enshrined in the Universal Declaration of Human Rights.

instrumental reason and a power for intervention in the nonhuman world; for both, however, this modern narrative of progress is transfigured as a narrative of alienation and loss.

A fragile opposition between nature and history thus marks Thomas's poetics, with this opposition threatening to collapse into two related but distinct concepts of agriculture. On the one hand, the nonhuman world is emphatically extrahistorical, and on the other, its status as the exemplary victim of historical development allows it to be deployed to think the relations between history and violence more generally. The unresolved tension between these concepts produces some of his characteristic images. To return to 'The Welsh Hill Country', the image of the diseased sheep grounds agricultural life in bodily vulnerability and decay, even as this universal, transhistorical claim articulates a distinctly historical narrative of a decline in the tradition of Welsh hill farming. The disease-ridden sheep is related to the malaise afflicting the tradition, as we see later in the poem: 'The houses stand empty' and 'the fields are reverting to the bare moor' (p. 22). Thomas's credentials as a 'green' poet are harmed by his fixation on the identities and traditions made possible by certain modes of relation to the nonhuman world, rather than his concern for the nonhuman world as such. The image of the diseased sheep is impressed, in a conventional enough fashion, to make two claims whose scope is decidedly anthropocentric: firstly, that the tradition of Romantic pastoral is inadequate to the task of representing rural life; and secondly, that *we humans* stand to lose an intrinsically valuable tradition to the homogenising effects of modernity.

There is another strand of Thomas's poetics which, I suggest, can be read against his sometimes narrowly anthropocentric fixation on identity, and this strand emerges most clearly in his treatment of the notion of vulnerability. If, as I have argued, Thomas seeks to ground agrarian life in finitude and mortality rather than the more conventional *topoi* of natality and regeneration, these traits by no means mark a limit which differentiates the human from the nonhuman. In the Western intellectual tradition, the idea of finitude has frequently been deployed in the service of human exceptionalism, as we see in, for instance, the Heideggerean concept of being-towards-death, or the commonplace (and increasingly, empirically dubious) assertion that, since only humans have a relation to death as such, death cannot be a harm for nonhumans.⁴¹ In the work of R. S. Thomas, however, a concept of finitude emerges which is

⁴¹ Heidegger elaborates the concept of being-towards-death in his *Being and Time*, trans. by John Macquarrie and Edward Robinson (Malden, MA: Blackwell, 1962), pp. 279-311. As he develops this conceptual relation to finitude, he suggests that the temporal structure of (human) subjectivity means that, while animals can certainly 'perish', only humans *die* in an existentially meaningful sense: the existential meaning of this specifically human experience of death 'must be distinguished from the going-out-of-the-world of that which merely has life' (p. 284).

consonant with recent developments in pro-animal literary and cultural criticism.⁴² Here, finitude and bodily vulnerability are taken viewed not as solely or even especially human, but as the shared condition of biological life. Ted Hughes claimed that ‘All sheep, lambs and calves are patients: something in them all is making a steady effort to die. That is the farmer’s impression.’⁴³ Thomas radicalises this claim by including the farmer as an equal partner within the logic of finitude. The shared exposure of human and nonhuman life to bodily decline and mortality becomes a radical point of departure for thinking difference and ethics beyond humanism’s narrow anthropocentrism.⁴⁴

A ‘weak’ notion of finitude is at work in ‘Death of a Peasant’ (p. 34), in which the farmer Davies dies ‘Lonely as a ewe that is sick to lamb’. Here the precariousness of human and nonhuman life is expressed through simile, gesturing towards the resemblance – though not the identity – of human and nonhuman affective and bodily vulnerability. In ‘The Mill’ (pp. 144-145), Thomas offers a stronger account of finitude across species boundaries. An aging farmer, retreating to his deathbed, becomes ‘one more beast / To be fed and watered / On that hill farm.’ Thomas discards simile (and thus, resemblance) for the stronger relation of metaphor, asserting cross-species vulnerability as the common horizon of biological life. At first glance, this image appears to present embodiment as a kind of corporeal incarceration, the limitation of subjective interiority by the weak, ‘animal’ body (and indeed, in ‘The Mill’, the ‘rusty mill / Of the [farmer’s] mind’ continues to turn). Such a reading neglects the consistent privileging of embodiment over the hallmarks of humanist subjectivity (language, reason *et al.*) in Thomas’s poetics:

No speech: the raised hand affirms
 All that is left unsaid
 By the mute tongue and the unmoistened lips.
 (‘Peasant Greeting’, p. 12)

Communication is founded not on the disclosure of subjective interiority through language, but on an embodied practice which is prior to language. Thomas’s valorised yet fundamentally mute

⁴² Anat Pick’s *Creaturely Poetics: Animality and Vulnerability in Literature and Film* (New York: Columbia University Press, 2011) is the landmark text in this turn towards shared bodily finitude. Cora Diamond and Cary Wolfe have also made important contributions to this theoretical reorientation, most prominently in Stanley Cavell and others, *Philosophy and Animal Life* (New York: Columbia University Press, 2008), pp. 1-89.

⁴³ Ted Hughes, cited in Terry Gifford, *Pastoral*, p. 137.

⁴⁴ I am aware that in making this argument, my reading of Thomas goes against the poet’s own interpretation of his intellectual project. Thomas’s theological commitments led him to reject the legacy of Darwinian materialism, reserving a non- or extra-material category of spirit for humans alone. Unlike Cartesian dualism, Thomas’s concept of spirit is founded on, though distinct from, its embeddedness in the nonhuman world (Morgan, *R. S. Thomas*, pp. 84 - 85). My hope is that Thomas’s critique of Cartesian subjectivity can be radicalised and purged of its residual humanism by pursuing the reading strategy that I’m following here.

peasants trouble a humanist metaphysics of subjectivity, challenging the prestige of the human's key marks of its differentiation from the nonhuman world. 'Our aboriginally constituted bodily being with others', as Acampora puts it, is Thomas's favoured subject of poetic representation.⁴⁵

In 'A Peasant' (p. 4), Thomas again privileges embodiment over interiority through a portrayal of Iago Prytherch. 'There is something frightening in the vacancy of his mind', we are told, yet the poetic voice which so responds to the peasant is that of 'the refined / But affected' metropolitan outsider. This voice, which often serves double duty as both the implied author and the imagined audience for Thomas's work, is repulsed by Prytherch's grotesque bodiliness: 'His clothes, sour with years of sweat / And animal contact, shock'. Here, the function of clothes in the symbolic economy of humanism is radically challenged. No longer do clothes mark the origins of culture by their covering of the merely animal body; instead they mark a point of contact between the human and nonhuman world, a contaminating link to animality, including the animality of human labour (or 'sweat') as a practice founded on embodiment. This is far from a metropolitan critique of peasant vulgarity; Prytherch is elevated in Thomas's account: 'he, too, is a winner of wars, / Enduring like a tree under the curious stars.'

Thomas, then, defends embodiment against the distanced rationality of the enlightened metropolitan outsider. His peasants are of a wholly different species to the exemplary subject of humanism. In 'Green Categories' (p. 77), Thomas sketches an imagined meeting between Iago Prytherch and Immanuel Kant. Prytherch represents the permanence and certainty of agrarian life, where philosophical scepticism is seen to be redundant, and embodiment is again privileged over pure reason. In Prytherch's world, 'all is sure; / Things exist rooted in the flesh'. The Kantian categories are figured as the product of a specifically metropolitan intellectual culture, which lose their potency when brought to bear on the agrarian world.

Space and time
Are not the mathematics that your will
Imposes, but a green calendar
Your heart observes.

The humanist 'will', and with it the myth of agency, is revealed to be founded on an embeddedness in the nonhuman world. Temporality is disclosed neither as abstract, linear time, nor as an effect produced by an agent's will; rather, these abstractions give theoretical expression to a more primordial exposure to the rhythms of the nonhuman world, which itself is pre-theoretical. For Thomas, all metropolitan, intellectual discourse is predicated on a

⁴⁵ Acampora, *Corporal Compassion*, p. 5.

forgetting of this originary exposure. The Kantian attempt to account for the phenomenal world – that is, the world as it is experienced through the intellectual ‘categories’ – brackets (because constitutively unthinkable) the noumenal world of raw experience that, for Thomas, forms the peasant’s living reality. The competing concepts of nature and intellect can be reconciled only through an act of ‘faith’, demanding the use of the pastoral to create a space of truce:

Yet at night together
In your small garden, fenced from the wild moor’s
Constant aggression, you could have been at one,
Sharing your faith over a star’s blue fire.

The unity which is achieved here represents a conservative retreat from Thomas’s critique of humanism. Here, and elsewhere, Thomas stages the reconciliation of embodiment and intellect under the familiar banner of universal humanism. In ‘The Hill Farmer Speaks’ (p. 31), he adopts the uncharacteristic strategy of giving voice to a farmer directly. The first-person voice, with all the connotations of subjecthood that follow, represents peasant life in familiar terms of cross-species community and alienation from the metropole:

The pig is a friend, the cattle’s breath
Mingles with mine in the still lanes;
I wear it willingly like a cloak
To shelter me from your curious gaze.

This refiguration of community and species is ultimately rejected in favour of a twice-repeated humanist appeal to the urban reader: ‘Listen, listen, I am a man like you.’ This ambivalence between on the one hand, a conventional universal humanism, and on the other, a critique of humanism founded on cross-species bodily finitude, demands further investigation. The roots of this ambivalence can be found, I suggest, in the complex and contradictory cultural work performed by the idea of agriculture. Throughout this chapter, I have suggested that the concept of agriculture is strongly linked to ideas of identity – be they species, gender, national, modern or pre-modern identities. In what follows, I shall more closely examine some of the ways in which agriculture has been mobilised to articulate identity in mid-twentieth century culture. I argue that an over-emphasis on anthropocentric concepts of identity displaces a more radical critique of human exceptionalism.

Displacements: Identity and the Retreat from the Nonhuman

Hannah Arendt’s *The Human Condition* (1958) elaborates an ontology which is founded on an abyssal break between the human and the nonhuman. Like Thomas, she grants that human life

is founded on nature, but she discovers a decisive ontological break in the concept of artifice: 'The human artifice of the world separates human existence from all mere animal environment, but life itself is outside this artificial world, and through life man remains related to all other living organisms.'⁴⁶ Arendt's influential mid-century account of the meaning of modernity partitions human activity into three categories: labour, that activity which sustains humans as biological organisms; work, or activity which adds to the durable human artifice of the world; and action, which corresponds to human plurality, discourse and political life. This ontology gives agriculture a privileged place in mediating between the human and the nonhuman world, as the point of contact between labour and work.

Tilling the soil, its close relation to the biological cycle and its utter dependence upon the larger cycle of nature notwithstanding, leaves some product behind which outlasts its own activity and forms a durable addition to the human artifice; the same task, performed year in year out, will eventually transform the wilderness into cultivated land. (p. 138)

If agriculture in Arendt 'prepares the earth for the building of the world' (ibid.), it correspondingly prepares the grounds for the human within the nonhuman. The category of labour, which so strikingly pertains to human animality, is transcended by the category of work, the mark of human exceptionalism.⁴⁷ It is no surprise that in 'Green Categories', cited above, R. S. Thomas chooses to effect the reconciliation between peasant embodiment and Kantian intellect in a 'small garden, fenced from the wild moor's / Constant aggression' (p. 77). The cultivation of the soil becomes a condition of the emergence of (properly human) subjectivity.

If agriculture plays this decisive role in clearing a space for human culture, and if this task is taken to play a foundational role in producing human subjects, it can also be enlisted to produce more specific configurations of identity. Gender identities in particular are linked by both George Orwell and R. S. Thomas to particular forms of agricultural life. These green masculinities are perceived (particularly by Orwell) to be threatened by the encroachment of a 'feminising' technological culture. I will close this chapter by analysing the gendered basis of their pastoral ideologies, and its relation to their critique of modernity's deleterious effects on the nonhuman world.

⁴⁶ Hannah Arendt, *The Human Condition* (Chicago: University of Chicago Press, 1998 [1958]), p. 2.

⁴⁷ Arendt's understanding of the humanity of agriculture is qualified by an appreciation of its precarity. For Arendt, agricultural labour can only imperfectly transform earth into world: 'The tilled soil, if it is to remain cultivated, needs to be laboured upon time and again. [...] It needs to be reproduced again and again in order to remain within the human world at all' (*The Human Condition*, p. 139). This precarious status of human artifice suggests an analogy with humanist subjectivity, which likewise (and despite the humanists' disavowals) requires constant production and reproduction in order to maintain its coherence.

While R. S. Thomas's work offers a poetics of the nonhuman world that (at least partially) resists the hegemony of humanism, it remains unambiguously masculinist. His concern for identity and tradition is framed within a narrow horizon of masculinity and patrilineality. In 'Song for Gwydion', for instance, he links animal death to the transmission of male tradition: 'My father brought me trout from the green river [...] They were the first sweet sacrifice I tasted, / A young God, ignorant of the blood's stain' (p. 23).

Thomas elaborates his linking of agrarian practice and gendered subjectivity at more length in his longer poem, 'The Airy Tomb' (pp. 17-20). Here the unscholarly Tomos (or Twm) leaves school at the age of fourteen, 'Scatheless as when he entered,' in order 'to help his father / With the rough work of the farm'. 'Stepping with one stride thus from boy to man,' Tomos enters the world of masculine subjectivity through his initiation into 'rough work' (p. 17). Female figures are marginal and deprecated in this account (as they are throughout Thomas's work), and the ideal farming community is formed through the constitutive exclusion of women: Tomos's 'mind was free / Of the dream pictures that lead to romance' (p. 19). He is pursued by local women, 'but never a voice replied / From that grim house, nailed to the mountain side, / For Tomos was up with the lambs' (p. 20). Thomas's rejection of the conventions of pastoral representation, and his supposed fidelity to the reality of agrarian life, falters at this point. As Rhoda Wilkie has recently argued, 'Women have been, and continue to be, integral to the everyday running of small to moderate-size farms, but until the 1980s they were largely absent from agricultural research studies', and, we might add, from literary representation.⁴⁸ What emerges from Thomas's work is a sense of agrarian life as a machine for the production of tough, masculine identities.

This gendered pastoral assumes a more political cast in the work of George Orwell, feeding into and undermining the basis of his ethical critique of modernity. Orwell privileges masculine virility and conceives of agrarian culture as one of the last redoubts of a traditional masculinity which has been eroded by modernity. In *Animal Farm*, this masculinist anxiety is instantiated in Boxer, the draft horse whose physical prowess is sacrificed to technological modernity when he dies constructing the farm's electric windmill. It will be instructive here to compare Orwell's representation of Boxer with his earlier celebration of proletarian virility in *The Road to Wigan Pier*: 'To see [Boxer] toiling up the slope inch by inch, his breath coming fast, the tips of his hoofs clawing at the ground and his great sides matted with sweat, filled everyone with admiration' (p.

⁴⁸ Rhoda Wilkie, *Livestock/Deadstock: Working with Farm Animals from Birth to Slaughter* (Philadelphia: Temple University Press, 2010), p. 44.

41). In *Wigan Pier*, his interwar report on the English working class, Orwell offered a strikingly similar representation of (male) proletarian bodies:

It is only when you see miners down the mine and naked that you realise what splendid men they are. [...] Nearly all of them have the most noble bodies; wide shoulders tapering to slender supple waists, and small pronounced buttocks and sinewy thighs, with not an ounce of wasted flesh anywhere.⁴⁹

Here the proletarian body is anatomised and appreciated almost as horseflesh. Both Boxer and the miners are seen as the last instances of a masculine tradition which pre-dates what Orwell dismissively calls the ‘machine-worship’ of modernity, and which is in terminal decline thanks to, respectively, the mechanisation of the farms and the industrialisation fuelled by the miners’ coal.⁵⁰

Orwell’s male labourers – whether equine or hominid – are compared favourably to female characters in his work, whose imputed conspicuous consumption and demand for the luxury commodities of industrial society fuel the deleterious effects of modernisation: ‘The stupidest questions were asked by Mollie, the white mare. The very first question she asked Snowball was: “Will there still be sugar after the Rebellion? [...] And shall I still be allowed to wear ribbons in my mane?”’ (p. 10). This critique of female vanity persists in Orwell’s non-fiction. Arguing for the necessity of suppressing the rich in order to boost the morale of the working class in wartime, Orwell decried that ‘common soldiers risk their lives for two and sixpence a day, [while] fat women ride about in Rolls-Royce cars, nursing pekineses.’⁵¹ And again: ‘The lady in the Rolls-Royce car is more damaging to morale than a fleet of Goering’s bombing planes.’⁵² Women embody bourgeois decadence, in Orwell’s account, and the morphologically distinctive Pekinese represents a kind of distortion of the nonhuman world which is held to follow from its incorporation into the devitalising ‘feminine’ softness of modernity.

The rationalisation of production, it is claimed, displaced the centrality of masculine virility in labour: ‘modern industrial methods tend always to demand less muscular effort. [...] The old-style “proletarian” – collarless, unshaven and with muscles warped by heavy labour – still exists, but he is constantly decreasing in numbers.’⁵³ Returning to *Animal Farm*’s Boxer, we are now better able to appreciate a claim made previously; that Boxer’s death is mourned not as a nonhuman victim of the mechanisation of agriculture, but as a figure for the demise of

⁴⁹ Orwell, *The Road to Wigan Pier*, p. 20.

⁵⁰ *Ibid.*, p. 179.

⁵¹ Orwell, *The Lion and the Unicorn*, p. 86.

⁵² *Ibid.*, p. 91.

⁵³ *Ibid.*, p. 68.

traditional masculinity in technological society. In *Wigan Pier*, the anthropocentric stakes of Orwell's discourse are made explicit: 'The result of the transition from horses to cars has been an increase in *human softness*'.⁵⁴

These meditations on identity have led us far from the images of technological violence towards the nonhuman world with which I began this chapter; and indeed, concern for the latter in Thomas and Orwell has often been articulated only in a secondary, inessential fashion, as a symptom of the crisis of identity in modernity. For Orwell, as we have seen, the potent affective image of Boxer's death reveals nothing about the cost of modernity on nonhuman animals, functioning instead as a conservative elegy for the masculinities of pre-mechanised society. R. S. Thomas shares Orwell's concern with the perceived devitalising effects of modernity, though his thematics of embodiment and finitude pose a challenge to the prestige of the humanist subject, affording a strong point of departure for critiques of instrumental violence towards the nonhuman world. Despite this, Thomas's work is compromised by its anti-historicist character, which has the effect of narrowing down the possibilities for critical intervention. Conceiving of modern agriculture as a wholly novel eruption of history into the extrahistorical agrarian world, Thomas naturalises 'pre-modern' agriculture and thus forfeits the ability to subject it to critique. Moreover, in his retreat from history, he takes refuge in representations of marginal farming practices even as the first factory farms are being conceived and developed. In 'The Welsh Hill Country', with which I introduced Thomas, he challenges the representational inadequacy of romantic pastoral, offering an unflinching account of the disease-ridden 'real' of agrarian life. This strategy is itself predicated on an evasion of the costs – for the human *and* the nonhuman world – of the mechanisation of farming. Thomas clings to an affective ethics and set of practices which are rapidly becoming obsolete without offering a substantial challenge to industrial agriculture; his 'real' is itself illusory.

The farm, for Timothy Morton, is an uncanny space which stands at the threshold linking the human world of artifice to the nonhuman world of natural forces. 'Because humans plough, [because] they transform Earth into agricultural space', we imagine ourselves as mediators between two distinct ontological and spatial domains.⁵⁵ We establish an enclosed space which is jealously guarded against an insurgent nature. The anti-instrumental nostalgia of Orwell and

⁵⁴ Orwell, *The Road to Wigan Pier*, p. 181, emphasis added.

⁵⁵ Timothy Morton, 'The Oedipal Logic of Ecological Awareness', *Environmental Humanities*, 1 (2012), 7-21 (p. 9).

Thomas downplays this defensive framing of agricultural labour, stressing instead the notion that the farm is a space of contact between the human and nonhuman world. The imperatives of technological reason, which were everywhere transforming agriculture in the mid-twentieth century, were far more thoroughly invested in practices of enclosure, containment and control. In the next chapter, I turn to the zoo – a self-consciously historical space compared to the supposedly extra-historical traditional farm – as a key site where technological reason was deployed as a strategy for managing nonhuman agency. If, in Orwell and Thomas, the farm was a kind of imaginative refuge from the political crises of contemporary society, the zoo's architectural mandate for confining and making visible the nonhuman body became intimately related to the postwar political and military requirements of containment.

'Not a Guardian but a Prisoner of the Caged Beasts'
Administrative Reason and Its Discontents in the Postwar Zoo

In my introduction, I have sketched how the relationships between reason, technological development and concepts of species difference were reevaluated during the crises of the Second World War and the postwar period that followed. Mid-century intellectuals such as Max Horkheimer charged that the faculty of autonomous reason which had been associated with Enlightenment, modernity and liberation had been drastically attenuated by psychosocial and, particularly, technological changes in the twentieth century. In both its routinisation of behaviour in the modern factory and in the new mass culture which it had made possible, technological reason had *standardised* humanity and made impossible the pursuit of liberation that had been the founding promise of modernity: 'Advance in technical facilities for enlightenment is accompanied by a process of dehumanization. Thus progress threatens to nullify the very goal it is supposed to realize—the idea of man'.¹ This supposed failure of reason, and the anxieties which attended it, can be read from the vantage point of posthumanist theory as an indicator of the precarity of the concept of the human. It is not only the question of whether processes of technologisation are more or less harmful or beneficial that is at stake in these mid-century debates; instead they concern the possibility of the (re)production of species difference itself.

The technologisation of reason can be read as a threat to the internal coherence of the category 'human' (and I will pursue this possibility in Chapter Three), but it also left its mark on postwar intellectual culture through fears concerning the externalisation of its effects—namely, the deleterious toll which the new, technologically-equipped and instrumentally-minded humanity was exacting on a nonhuman environment now conceived simply as 'resource' for exploitation. Autonomous reason had been replaced, Horkheimer claimed, by a strictly instrumental reason which was fully subordinated to the processes of technological development that were transforming the natural as well as the industrialised world: 'Reason has been completely harnessed to the social process. Its operational value, its role in the domination of men and

¹ Max Horkheimer, *Eclipse of Reason* (London: Continuum, 2004), p. v.

nature, has been made the sole criterion'.² Horkheimer's qualification, 'and nature', has been inadequately attended to by readers of postwar culture, and this thesis attempts to account more carefully for the ways in which processes of technologisation have impacted, both materially and symbolically, on the nonhuman world.³

I want to turn now from these broad diagnoses of postwar anxieties to a more concrete analysis of their material-semiotic effects in particular institutional sites. We have already seen something of how the farm functioned as a locus of anxiety where technology was perceived to injure both animal lives and human modes of subjectivization. This chapter reads the zoo as a crucial space in which culture's relation to 'nature' is negotiated and contested. Zoos function as the point of convergence for multiple competing discourses and dispositions towards the nonhuman world, from the technologisation of strategies of domestication and control (zoo architecture as the production of disciplinary space) to the fantasy of the omnipotence of human vision which is nourished by the spatial arrangement and display of animal bodies. The particular focus of my analysis is the Zoological Society of London from 1945 through the 1960s. I aim to trace the imbrication of postwar zoo discourse and practices with wider transformations in postwar society, including the growing social prestige of science, the inscription of nonhuman life into processes of militarisation, and the emergence of an ecological ethics which, I shall argue, is deeply resistant to the hegemony of a certain conception of imperious, technologically-abetted vision. I draw on two novels published in the 1950s and 60s to make the case that literature is a key cultural site at which these anxieties concerning instrumental reason and nonhuman life are negotiated.

Angus Wilson's *The Old Men at the Zoo* (1961) forms part of a literary tradition of anti-instrumentalist fiction which resists the hegemony of science in the postwar period. Wilson suggests that a more affectively engaged relationship to the nonhuman world can be achieved by cultivating acts of human-animal spectatorship outside of the artificial, technologized space

² Horkheimer, *Eclipse of Reason*, p. 15.

³ Neither Davies and Sinfield's edited collection *British Culture of the Postwar: An Introduction to Literature and Society 1945 - 1999* (London: Routledge, 2000) nor Gary Day's collection *Literature and Culture in Modern Britain, Volume Two: 1930 - 1955* (London: Longman, 1997) make any sustained reference to ecological themes. Several overviews of post-war culture do engage, albeit briefly, with themes beyond the conventional anthropocentrism of cultural criticism. Alan Sinfield's *Literature, Politics and Culture in Postwar Britain* (Berkeley: University of California Press, 1989) frames a discussion of imperialism and humanism in an ecological register of nature and culture, and Dominic Head's *Cambridge Introduction to Modern Fiction 1950 - 2000* (Cambridge: Cambridge University Press, 2002) explores the fate of the pastoral novel in post-war fiction from a broadly ecocritical perspective.

of the zoo.⁴ Brigid Brophy's *Hackenfeller's Ape* is an early literary defence of animal liberation.⁵ Published in 1953, it predates by over twenty years the inauguration of animal liberationist philosophy by Peter Singer.⁶ *Hackenfeller's Ape* presents a comedy of vision. A scientist's serial failure to observe the (previously unwitnessed) sex act of a fictional ape becomes, in Brophy's hands, a dramatization of the prurience of at least some varieties of scientific research, and an indictment of the staging of visual encounters by the zoo. Touching on the use of animals in spaceflight (and by extension, military) research programs, Brophy links the imperiousness of vision in the zoo and in scientific research to the militarist imperatives of the Cold War state, which imagined nuclear warfare from orbit as a kind of 'eye of God, seeing everything [the enemy] does' (p. 65). Brophy's claim, then, is that the technologies of vision which are deployed in their purest form in the zoo, and which are intimately associated with the ascendancy of instrumental reason in modernity, subject human as well as nonhuman populations to arbitrary violence.

Between Science and Spectacle *The Zoological Society of London After the War*

Three recurring themes organise zoo discourse in the postwar period. The first of these concerns the role of the zoo in the production of scientific knowledge, and saw the essential function of the zoo as being represented by its scientific publications and research programs. The second was the more familiar logic of spectatorship, which focused on the zoo as a space for the recreational observation of nonhuman animals, reinforcing relations of power between the species by installing the sovereign human as a viewing subject, and by arranging spaces and animal bodies in order to maximise the visual pleasure of the observer. The third concerned the relationship between space and ecological ethics in and beyond the zoo environment, with a focus on the ethics of captivity. While marginalised in official zoo discourse, literary responses to the postwar zoo presented an attitude of suspicion or hostility towards the established spatial logic of confinement. I will argue that this shift can be read as an attempt to establish a new ecology of space particular to the postwar period, a rethinking of relations between species, space, and technologies of control (principally the zoo), which would resist the

⁴ Angus Wilson, *The Old Men at the Zoo* (London: Penguin, 1992). Further references will be given in the body of the text.

⁵ Brigid Brophy, *Hackenfeller's Ape* (London: Virago, 1991 [1953]). Further references will be given in the body of the text.

⁶ Peter Singer, *Animal Liberation*, 2nd edn (London: Pimlico, 1995). Originally published in 1975, *Animal Liberation* cites Brophy's early pro-animal writings approvingly on p. 231.

imperatives of confinement and control that linked the zoo to the normalisation of security culture in Cold War society. By relocating instances of human-animal encounter from the zoo to 'the wild', postwar fiction imagined that vision could become a positive act of affective engagement, rather than an imperious and appropriative act predicated on the domestication of animal agency.

This new spatial logic is very poorly represented in the official zoo discourse, which focused almost exclusively on the scientific and recreational function of the zoo. The competing logics of science and spectatorship were formalised by the Zoological Society's Royal Charter of 1829, which declared the Society's dual purpose to be 'the advancement of zoology and physiology and the introduction of new and curious subjects of the Animal Kingdom'.⁷ The conjunction 'and' suggests that these two aims should effect what Zoo secretary Solly Zuckerman called 'a healthy scientific and non-scientific symbiosis'.⁸ In practice, these two logics were often in conflict, and this intensified as the social prestige of science grew throughout the twentieth century. By 1942, secretary Julian Huxley (brother of the novelist and essayist Aldous) was in conflict with the Zoo council. Huxley, described by Zuckerman as 'very much a biologist of the modern school', sought to extend the scientific remit of the Society but was opposed by a traditionalist council. The council forced Huxley to resign in a move which Zuckerman described as 'a rout of the scientific modernists'.⁹ This conflict establishes an opposition between the scientific and the 'traditional' function of the zoo which persists in Angus Wilson's novelistic representation of London Zoo, as we shall see. At stake here is a definition of modernity which identifies the modern with the technical and the scientific, and which relegates the recreational aspect of the zoo to the status of deprecated tradition. There are also ethical stakes to this distinction; Zuckerman suggests that the crucial institutional distinction between the Society of 1928 (when he joined the Zoo) and the reforms made during Huxley's tenure was the widespread extension of 'licences to carry out experimental work on animals' in the latter period.¹⁰ This reorientation of the zoo away from populist acts of spectatorship and towards the work of scientific experimentation and research was thus conceived as part of a trajectory of ever-increasing modernisation, and the animal body is the terrain of which this remapping of the modern takes place.

The tension between the scientific and what I will call the spectacular concept of the zoo has its roots in the zoo's nineteenth-century origins, but its effects are articulated differently in the

⁷ Solly Zuckerman, 'The Zoological Society of London: Evolution of a Constitution', in *The Zoological Society of London, 1826 - 1976 and Beyond*, ed. by Solly Zuckerman (London: Academic Press, 1976), pp. 1-16 (p. 10).

⁸ *ibid.*

⁹ *ibid.* pp. 9-10.

¹⁰ *ibid.* p. 9.

postwar period as they are shaped by wider social trends. Foremost among these is the renewed centrality of technoscientific reason in postwar society. Having demonstrated its instrumental value through its contributions to military research and development during the war, science subsequently found itself in demand in the effort to rebuild society. One postwar government report claimed that ‘least of all nations can Great Britain afford to neglect whatever benefits the scientists can confer upon her’, and the social prestige of science increased accordingly.¹¹ The postwar consensus, which advocated an increased role for the state in economic activity and social life more broadly, required a class of scientist-technicians to advise on questions of policy. This was obviously attractive to certain members of the scientific institution, and Julian Huxley had, in the inter-war years, been a major advocate for centralised social and economic planning for this reason.¹²

This renewed prestige of science bolstered the case of those within the Zoological Society who saw their vocation as privileging research over recreation. Prominent figures in the mid-century history of the Zoo were linked by their research to the socio-medical projects associated with the postwar consensus which, with their special concern for managing populations and for framing good health as a civic duty, can be described as biopolitical.¹³ In his autobiography, Zuckerman recounts a meeting with Aneurin ‘Nye’ Bevan, the architect of the National Health Service, who reportedly asked him “‘What is the relevance of your work on reproduction in monkeys to the problem of human population?’”¹⁴ These kinds of encounters were commonplace in postwar culture. Zuckerman, for instance, was chief scientific advisor to the British government in addition to his role as secretary of the London Zoological Society. The London Zoo was therefore a clinical space, in Foucault’s sense, where expert observation of animal bodies would provide the intellectual material necessary to underwrite state policy in healthcare and other biopolitical projects.¹⁵ Private capital was another major actor in

¹¹ *Scientific Manpower* (London: HMSO, 1946) Cmnd 6824.

¹² Colin Divall, ‘From a Victorian to a Modern: Julian Huxley and the English Intellectual Climate, in *Julian Huxley: Biologist and Statesman of Science*, ed. by C. Kenneth Waters and Albert van Helden (College Station, TX: Texas A&M University Press, 1992), p. 35.

¹³ Here I’m drawing on the account of biopolitics developed by Michel Foucault in his later work, in particular *Society Must Be Defended: Lectures at the College de France, 1975-1976*, ed. by Mauro Bertani and Alessandro Fontana, trans. by David Macey (London: Penguin, 2003).

¹⁴ Solly Zuckerman, *Monkeys, Men and Missiles: An Autobiography 1946-88* (London: Collins, 1988), p.42.

¹⁵ Here I’m drawing on Michel Foucault’s analysis of the teaching hospital in his *The Birth of the Clinic: An Archaeology of Medical Perception* (London: Routledge, 2003). Like the clinic, the zoo is a space which produces knowledge by privileging a certain concept of vision exercised by specialists (*le regard medical*, or, perhaps, *le regard zoologique*) which in its use asserts and reproduces the epistemological strategies associated with modernity (that is, the sovereignty of the viewing subject, the singular authority of scientific knowledges). In the context of the zoo, these strategies have the additional effect of reproducing human exceptionalism: the sovereignty of the (human) scientist is confirmed, and the animal body is relegated to the status of mute, passive object of the scientific gaze.

redefining the scope of the zoo's mission. The Ford Foundation, owned by the Ford Motor Company, became the largest donor to the Zoo's scientific fund on the understanding that research into nonhuman reproductive systems could contribute to arresting global population growth.¹⁶ In the postwar period, then, the Zoological Society was drawn into a network of capital, policy, and scientific research, united under the rubric of biopolitical modernity.

If the Zoological Society's institutional function came to be defined more and more by its role as a site for the production of scientific discourse, in its most visible and public manifestations the Zoo remained essentially attached to the older, aesthetic imperatives of recreation and spectacle. A contemporary guide to the London Zoo makes only one passing reference to the zoo's scientific mission.¹⁷ The guide's visual rhetoric can also be read as an acknowledgment of a shift away from pre-war spatial ethics of captivity and confinement. The photographs are predominantly close-shots of popular and charismatic animals, with many of the images clearly depicting the animals in their 'natural' habitats; where the animals are photographed in the zoo, the framing of the images tends to exclude or obscure the enclosures and the human observers.¹⁸ This is only a rhetorical strategy, however; the Zoo at mid-century remained committed to the conventional project of captivity. The Society's Whipsnade site, opened in the inter-war years, afforded the initial promise of a reconfiguration of the spatial logic of confinement, before turning out of expediency to conventional enclosures. The revaluation of the ethics of captivity came largely from outside of the Zoo establishment, with one key (albeit problematic) development being the opening of the first domestic safari park at Longleat in 1966. A definite strand of postwar literature is another key site of resistance, not only to captivity, but also to the entire technical-instrumental orientation of postwar culture, and it is to this that I will now turn.

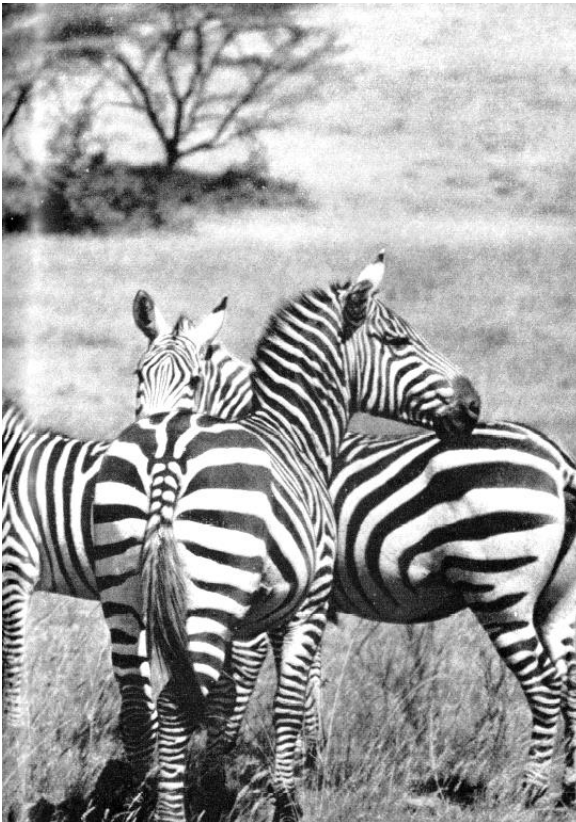
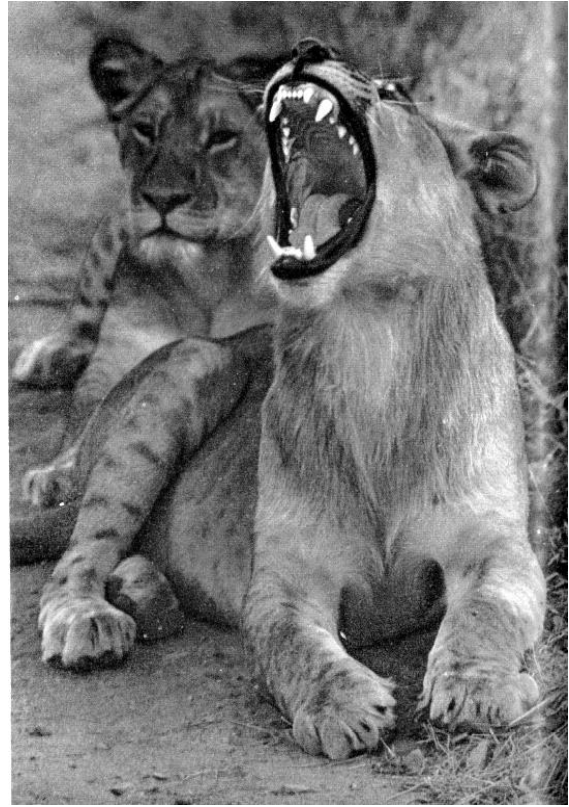
The Administered Animal: Angus Wilson's The Old Men at the Zoo

Angus Wilson's *The Old Men at the Zoo* (1961) is an early example of literary engagement with the shift in attitudes towards the non-human world in postwar British culture, and in this, it reflects a turn away from the attitude towards nature that is associated with literary modernism. Philip Armstrong argues that modernist literature tended to conceptualise nature as a permanent and resilient counter-point to urbanised modernity. Wilson's novel, in contrast,

¹⁶ Zuckerman, *Monkeys, Men, and Missiles*, p. 77.

¹⁷ Zoological Society of London, *Zoo Guide* (London: Zoological Society of London, 1958).

¹⁸ See images overleaf.



*Various images from Zoo Guide
(London: Zoological Society of
London, 1958).*

is concerned with articulating an emerging sense of the precarity and vulnerability of the nonhuman world, especially in relation to its exposure to fallout from international military conflicts.¹⁹ *The Old Men at the Zoo* is set in the near future where shifting Cold War allegiances have seen European nations establish an international state, leaving Britain dangerously isolated and subject to external compulsion in the form of sanctions, trade embargoes and threats of military action. The novel sets these geopolitical crises into relation with a series of strategies for managing the relationship between the human and the nonhuman worlds, as articulated through the internal political struggles of the London Zoo's team of administrators.

The majority of critical engagement with Wilson's novel has tended to neglect or displace the ethical thrust of the text in favour of a humanist reading which reads the prominent role of non-humans in the text as (at best) a cipher for anthropocentric meanings and concerns. In doing so, they perpetuate the assumption, widespread across the humanities and social sciences, that 'the human-animal relation is not really of interest or value – indeed, cannot reasonably be countenanced – *as a relation in itself*.'²⁰ Wilson's ecological imagination is thereby reduced to 'an abiding concern with human values and human beings.'²¹ In part, such readings are invited by the fact that Wilson's animals and environments clearly *are* enlisted as metaphorical vehicles, set as they are in a meaningful relation to geopolitical concerns and the personal lives of the novel's human protagonists. But such readings ignore the parallel effort that Wilson makes to satirise the total reduction of the non-human world to a mere screen for human meanings. My reading starts from the assumption that the non-humans which that populate *The Old Men at the Zoo* are irreducible to their allegorical function. I follow Susan McHugh in resisting the violence of interpretative strategies that dissolve literary animal figures: 'reading animals as metaphors,' McHugh claims, 'is a process that ends with the human alone on the stage.'²² I argue that it is only by reading the ecological dimension of the text as intrinsically meaningful that we are able to make sense of one of its key antagonisms: the tension between scientific instrumentalism and the emergent new ethics of human-nonhuman relations.

The text uses the space of the Zoo to contrast three conflicting strategies of managing the ways that humans experience – and make use of – the non-human world. These strategies correspond broadly to the triad of science, recreation and ecological ethics that I identified in the discourse of the Zoological Society. The first strategy subordinates the aesthetic function of the Zoo, as

¹⁹ Philip Armstrong, *What Animals Mean in the Fiction of Modernity* (London: Routledge, 2008), p. 170.

²⁰ Annabelle Sabloff, *Reordering the Natural World: Humans and Animals in the City* (Toronto: University Of Toronto Press, 2001), p. 35, emphasis in original.

²¹ Averil Gardner, *Angus Wilson* (Boston: Twayne Publishers 1985), p. 2.

²² Susan McHugh, 'Animal Farm's Lessons for Literary Animal Studies', *Humanimalia*, 1.1 (2009), 24-39 (p. 24).

well as the welfare of the animals, to the goal of scientific research; the ‘utility’ of experimental animals, in this approach, lies in their providing the raw materials for the production of a body of discourse. The second transforms the Zoo into a spectacle which testifies to the triumph of humans over non-human nature. Animals are reduced to vehicles for signification, and inserted into narratives of British chauvinism and imperial nostalgia. The third draws on an emerging environmental awareness and dispenses with the Zoo altogether in favour of an open nature reserve. This is accompanied by a new ethics of observation which moves away from the clinical-instrumentalist style which characterises the research-oriented zoo in favour of an affective engagement with the objects of observation. In the remainder of this essay, I aim to analyse the text’s representation of competing strategies for managing the relation between the human and the nonhuman, with a view to tracing the emergence – and the limits – of a new ethics of ecological responsibility in the text, and in postwar society.

Scientific Instrumentalism and the Clinical Mode of Observation

Wilson’s narrative is principally driven forward by the para-political struggle between two of the titular ‘old men’ over the future of the Zoo. Sir Robert Falcon stands in the imperialist tradition which argues for human mastery over the non-human world and – as inseparably bound to this – for European mastery over non-Europeans. He conceives of the Zoo as a space in which to display and narrate this triumph over nature. In contrast, Dr Leacock hopes to replace the zoo with a nature reserve without cages. In doing so, he hopes to refashion human-animal relations so that a cultivation of authentic communion with nature might replace the earlier attitude of imperialism and domination.²³

While the conflict between traditionalists and environmentalists is being played out, a third mode of relation is quietly represented by the group of technicians and scientists who populate the margins of the text. They conceive of the proper role of the non-human world as providing experimental material for the benefit of human knowledge, and in this they most clearly reflect the hegemonic function of the zoo in postwar culture. Wilson imagines these competing ideologies as forming a historical trajectory, with Falcon’s imperial nostalgia representing the past of human-animal relations, and Leacock’s ‘progressivism’ representing the future. This

²³ We should note here how the text’s protagonists themselves play an allegorical role in representing the competing poles of the debate surrounding human-nonhuman ethics. In a novel which, I shall argue, critiques the metaphorical reduction of the non-human world to a cipher for human concerns, this strategy satirically inverts the process by reducing human characters to metaphorical stand-ins for non-human meanings.

leaves the present in the hands of the technicians, and the text addresses itself to this state of affairs from the position of an anti-instrumentalist tradition which is wary of modernity's strictly technical understanding of human-nonhuman relations.

The novel's narrator, Simon Carter, plays a central role in mediating between the technical project of the scientists and the affective, quasi-environmentalist project of Dr Leacock. Carter comes closest to Leacock through his hobby of amateur naturalism, which challenges the tactics of confinement which define the Zoo in favour of an ethological, emotionally invested engagement with nature. As we shall see shortly, the representation of Carter's ethological practice is crucial to the novel's ethical project. In his professional life however, Carter oversees the Zoo's research team. At the very beginning of the novel, his work as administrator is linked to a specific modality of vision which reiterates some of the tropes of the technical-instrumentalist mentality. Looking down on the Zoological Gardens from his office window, Carter approvingly notes the expansiveness of his view:

To command one's chosen view of the brute creation was one of the unexpected advantages I had secured by taking on the newly instituted post of Administrative Secretary at the London Zoo. (p. 9)

Carter's reference to 'the brute creation' appeals to the theological tradition of human dominion over nature, but substitutes the divine mandate for a legitimacy derived from the technical and administrative mastery that is associated with one understanding of modernity. He puts forward a concept of vision which is rooted in the model of subjectivity that subtends the scientific worldview: that of the transcendental subject of humanism, possessing a 'view-from-nowhere' that is able to detach itself from its embeddedness in cultural and material contexts in order to fix its gaze on the noumenal non-human world without mediation. The technical mentality that defines Carter's professional life is also associated with a refusal of sentiment. Complimented by a colleague for his thorough investigation of a fatal accident at the Zoo, Carter denies that his actions were incited by compassion for the victim or his family: "Don't mark me too highly for sensitivity. It's more that I feel there's been some muddle or incompetence somewhere in this business." (p. 24) The text therefore poses a distinction between, on the one hand, the technical and the instrumental, and on the other, sentiment and ethics; the administrative scruple becomes the principle for action, apparently rendering any ethical motivation redundant. As we shall see, it is only when Carter breaks from the technical and administrative mode that he is able to offer a properly ethical response to events.

Wilson's Zoo is only superficially a recreational space in which city-bound humans can view captive animals. Its primary purpose is rather to facilitate its embedded scientific research

community with experimental subjects. The culture of scientific instrumentalism which follows from these practices accords with the technical and administrative mode that defines Carter's professional life; in both cases, the opening to an ethical response to the Zoo's non-human inhabitants is occluded by the privileging of instrumental rationality over affect and sentiment. In one case, Dr Beard, the novel's chief proponent of the instrumentalist worldview, appears to offer an inversion of the conventional ethical hierarchy of humans and animals:

Do please remember that every dead animal counts. The death of a liver fluke is every bit as important as that of the most advanced primate. And a great deal more important than either of ours. (pp. 211-212)

But the context of this quotation makes clear that what is at issue here is nothing like the expansion of the sphere of ethical concern to include (let alone privilege) non-human life. Beard's animals possess no intrinsic value; their worth lies in their status as valuable subjects of scientific research. This particular assessment of their worth depicts the administrative cataloguing of the deaths of particularly valuable non-human subjects who, on account of their importance to scientific research, had been evacuated in advance of the anticipated nuclear conflict between isolated Britain and the new European state.

This reduction of the Zoo's animals to scientific capital is made more explicit as the Cold War (in Wilson's alternate history) threatens to escalate into open conflict. Caught off guard by a reconciliation and alliance of the United States and the Soviet Union, the European nations face a political crisis. Fear of the new U.S.–Soviet bloc sparks tensions in Europe between competing nationalisms and an emergent, pan-European internationalism which seeks to establish European unity as a bulwark against the new international order. These tensions renew fears of war in Europe, and in response the Zoo's administrators take measures to protect their nonhuman capital. As Carter's superior tells him, "In my opinion we shan't have any too much time to evacuate the more valuable specimens before the country finds itself at war" (p. 136). Beard reiterates that the justification for Dr Leacock's hoped-for nature reserve lies not in its providing a space to facilitate reconciliation with the nonhuman world, but rather in its efficiency as a strategy for preserving valuable scientific capital:

The move to Stretton is in some degree an evacuation. War is nearer round the corner than the man in the street knows. Now if it does come, one thing that must be preserved is some record of the work of the society, even if we're all blown off the face of the earth. (p. 184)

Speaking of 'the work of the society', Beard here removes any reference to the animals themselves, substituting instead the discursive field which surrounds and – following Foucault –

constitutes them.²⁴ Here Wilson satirises the super-valuation of scientific instrumentalism by underscoring the reification of scientific knowledge in modern technocratic society. The discursive field is endowed with autonomous value such that its existence would continue to be meaningful even if the community of human actors for whom scientific knowledge is intelligible were to be 'blown off the face of the earth' by nuclear war.

The instrumentalist attitude, in Wilson's account, grants scientists and technicians a hitherto unprecedented place in contemporary power relations. In his later work on biopolitics, Michel Foucault argues that the primary form of power exercised in modernity was no longer that which characterised the juridical relationship between state and citizen, but rather that which is exercised over the subject by the discourses which define and constitute his or her social being.²⁵ Power is thus exercised in a dispersed way through the institutions which produce and enact discourse, with medical and scientific institutions being particularly prominent loci of power in Foucault's analyses. Under a biopolitical rationale of fostering the productive forces of society, the clinician is entrusted with the right to section or quarantine individuals in the interest of managing public health and safety.

Moving from the human to the non-human, the powers of intervention granted to medical and scientific personnel are extended substantially. As Matthew Chrulew argues,

in the second half of the twentieth century, zoos were swept up in a constant process of reform that understood the role of the institution to be the thriving of its captive animals, a goal to be achieved through applying the principles of biological and ethological science.²⁶

This productive power to cultivate and even 'improve' natural life interacted with the ongoing revolution in genetics to redefine nonhuman animals as genetic capital, as we can observe in contemporary proceedings of the Zoological Society. One member of the Society recommends that 'animals should be brought from every part of the globe to be applied either to some useful purpose, or as objects of scientific research, not as objects of vulgar admiration.'²⁷ Here the competing concept of the recreational zoo is derided as a vulgarity, and the value of nonhuman life is discovered in its genetic potentialities; the Zoo should invest its energies in 'grafting "wild

²⁴ Michel Foucault, *The Archaeology of Knowledge* (London: Routledge, 2002), p. 35.

²⁵ See especially Foucault's *History of Sexuality, Volume 1: The Will to Knowledge*, trans. by Robert Hurley (London: Penguin, 1998), and *The Birth of Biopolitics: Lectures at the Collège de France, 1978-1979*, ed. by Michel Senellart, trans. by Graham Burchell (Basingstoke: Palgrave Macmillan, 2008).

²⁶ Matthew Chrulew, 'Managing Love and Death at the Zoo: The Biopolitics of Endangered Species Preservation,' *Australian Humanities Review*, 50 (2011), 137-157 (p. 143).

²⁷ R. V. Short, 'The Introduction of New Species of Animals for the Purposes of Domestication', in *The Zoological Society of London, 1826 - 1976 and Beyond*, ed. by Solly Zuckerman (London: Academic Press, 1976), pp. 321-333 (p. 332).

genes” onto stock of proven domestic temperament’ for the purpose of ‘[improving] the performance of existing domestic breeds.’²⁸ This positive power to ‘improve’ animal life has a negative counterpart in the violence done to individual animals whose value as genetic capital is negligible. The Copenhagen Zoo caused international controversy when, in February 2014, its staff killed a juvenile giraffe in order to clear a space for a ‘genetically more important giraffe.’²⁹ Significantly, the negative act of killing is justified as a positive act of fostering the collective health of the biopolitical community; a zoo representative argued that ‘giraffes had to be selected to ensure the best genes were passed down to ensure the long-term survival of the species’ (ibid.).

The Old Men at the Zoo responds ambivalently to the exercise of biopolitical power over nonhuman life. In an incident involving a sick animal whose illness causes him to become dangerous, Dr Beard assumes the sovereign role of the medical professional in biopolitical society. Although in this instance he refrains from exercising his power to kill for the collective good, he insists that ‘my say is the decisive one’ (p. 42). Carter rebukes Beard for failing to act decisively enough to remove the danger posed by the sick animal, and the biopolitical consensus is upheld by representatives of each of the contending ethical dispositions operative in the novel. Despite the pervasiveness of this biopolitical attitude to nonhuman life, an alternative view of the powers granted to technicians emerges at the margins of the text. Although the following example retains the clinician’s sovereignty over life and death, this power relation is now refigured in ethical rather than strictly instrumental terms. On hearing of Dr Beard’s clinical curiosity in the progress of a sick animal’s disease, his colleague decries the apparent evacuation of ethical feeling which he sees as accompanying the scientific will-to-knowledge:

I suppose you were too interested in the pathology [of the sick animal’s disease] to put the poor beast out of its misery. All you chaps in the Dead House are the same. You’ll have us all there to cut up, but in your own good time. (p. 44, emphasis added)

In this ‘us all’ lies the recognition that both human and non-human life is captured within the mechanisms of biopolitical society. Both can become the objects of instrumentalist discursive practices, and here this becomes a protest, familiar from liberal humanist ethical discourse, against objectification. What is unusual about this case is that Beard’s colleague’s protest includes non-human life – conventionally excluded from metaphysical definitions of subjectivity – within its critique of objectification. What is at issue here is, I think, a latent recognition of the shared bodily finitude of human and non-human life, their senescence and final mortality, and

²⁸ Ibid., p. 321.

²⁹ “‘Surplus’ giraffe put down at Copenhagen Zoo”, BBC News, 9th February, 2014
<<http://www.bbc.co.uk/news/world-europe-26098935>> [accessed 28th October 2014].

their ready incorporation into the voracious will-to-knowledge which characterises scientism, often to the exclusion or marginalisation of any ethical considerations.

The Zoo as Spectacle: Signifying Animals and Imperialist Nostalgia

Opposed to the scientific instrumentalism which characterises the Zoo's current function, one of its chief curators, Robert Falcon, aims to restore the Zoo to its previous function as a trophy-house displaying (specifically European) Man's [sic] conquest of nature, and the non-European world. An unabashed nostalgist for Victorian imperialism, Falcon proclaims, "I'm [...] an anachronism. I belong to the older order of things." (p. 26) His appropriative orientation towards the animals is an attempt to manage what Paul Gilroy has referred to as 'postcolonial melancholia',³⁰ and his experience of the postwar and (especially) postcolonial geopolitical order is marked by resentment and a sense of loss: "The Chinese put an end to my old hunting ground. I tried to swallow that little change. After all, what was Asia? There was still Africa left." (p. 82) As European political and ecological imperialism declines in the face of communism and anti-colonial national liberation movements, Falcon retreats from international affairs into the enclosed space of the Zoo, which he aspires to transform into a kind of museum of the old, imperial order.

Falcon's imperialist temperament leads him to relate to the non-human world using a language which is largely inherited from the legitimating discourses of colonialism. Justifying himself to a colleague who worries for the animals' welfare, he exclaims:

"My dear Sanderson, [...] have you ever thought how damned lucky the animals are that fall into the hands of the Society? By and large, that is, unless the climate's against them. No ghastly search for scarce food or water in times of drought! No relentless native huntsmen! No jungle rivalry! No old age, tracked down, feeble and desperate!" (p. 238)

His argument transposes into an ecological register one of the most prevalent themes in colonial discourse: the framing of the disenfranchisement of the colonized subject as a gesture of altruism by the colonizing powers. This points towards a confluence of the post-colonial critique of humanism and ecocriticism's critique of Western ecological imperialism. Gayatri Spivak has argued that the West's colonial discourse conflated a figure of 'the human' which was grounded in European norms and values with the supposedly universal subject of humanism. This gesture positioned European culture as the yardstick by which colonized nations were to be measured, thus legitimating the colonial enterprise on the grounds that 'after all, these people had not

³⁰ Paul Gilroy, *After Empire: Melancholia or Convivial Culture*, (London: Routledge, 2004).

graduated into humanhood, as it were.’³¹ The colonial project then becomes one of educating the colonized nations in European – and therefore, properly human – values.

It is clear that, for the most part, ecological imperialism is not justified on the basis of humanising the non-human world.³² Rather, both nonhuman animals and non-European peoples are figured as diminished versions of European subjectivity: less rational, more unruly, and in need of domestication or containment. In each case, the idea of their independent and autonomous existence is unintelligible to colonial discourse. Both are recast as problems to be solved (or at least managed) by the colonizing powers for the benefit of the colonized subjects, and both are figured as fundamentally *disordered* in the absence of colonial intervention. Within this framework, the zoo functions as a paradigmatic space of instrumental management of nonhuman disorder, as Harriet Ritvo points out: ‘In their physical design, zoos re-enacted and celebrated the imposition of human structure on the threatening chaos of nature.’³³ Just as colonial administrations imposed ‘order’ on the apparently ‘disordered’ pre-colonial political formations of the colonized subjects, so the zoo (in its traditional role) performs an equivalent function for the non-human world. In each case, it is not a universal but a particular form of order which is imposed: that which is intelligible to the European colonial ideology. In his capacity as a curator at the zoo, and as a representative of the ideology of Western (eco)colonialism, this is precisely what Falcon sets out to achieve.

The imperial attitude towards human-nonhuman relations results in the transformation of the zoo into a spectacle which attests to human dominance. Animals are enlisted into signifying practices which reflect and sustain the dominant imperial order. Towards the end of the novel, as the Cold War escalates, British nationalism is stoked by the ruling classes as a prelude to open warfare. In this drive to increase patriotic feeling, the zoo becomes a key site of ideological reproduction, being entrusted to the care of Robert Falcon, who transforms it into the centrepiece of ‘British Day’ (p. 233). This nationalist exercise references the British government’s 1951 ‘Festival of Britain’, which was intended to link the social-democratic policy of the state to a patriotic revival, rejecting both the old liberal-capitalist order and Bolshevism while underscoring a vigilance against external threats; the power of the British state was displayed ‘defending her people from aggressors by robustly showing off her traditions and

³¹ Gayatri Chakravorty Spivak, “Remembering the Limits: Difference, Identity and Practice”, in *Socialism and the Limits of Liberalism*, ed. by Peter Osbourne (London: Verso, 1991), pp. 227-239 (p. 229).

³² Although this has occasionally been the case; see for example Donna Haraway on early twentieth-century primatology in *Primate Visions: Gender, Race and Nature in the World of Modern Science* (New York: Routledge, 1989), pp. 19-21.

³³ Cited in Randy Malamud, *Reading Zoos* (London: Macmillan, 1998), p. 33.

achievements.³⁴ As well as its utility as a piece of wartime propaganda, Falcon's British Day exhibition also acts as a kind of compensation for the decline of Empire. The exhibit houses a 'British lion and an Indian elephant' (p. 253), which flatter the nostalgic sentiments of the British ruling class in the face of the trauma of decolonisation and the loss of international prestige. Elsewhere, Falcon transforms the office of the Zoo's director into 'a *symbol* of all we stood for', filling it with 'some authentic dodo feathers, a Victorian card case covered in quagga skin, the thigh bone of a moa, and a genuine stuffed Great Auk surveying the world with great surprise from its viewpoint of extinction' (p. 237, emphasis added). With this aesthetic strategy, Falcon deploys the non-human victims of Western colonialism as stand-ins for the colonial project as a whole, albeit now with an inevitably melancholic inflection, since the trophies of Empire have proved to outlast the now-fragmenting Empire itself.

Beyond the parameters of Wilson's fictional world, zoo animals showed themselves to be significant and disruptive actors in networks of cold war power.³⁵ In the 1950s, a loan of Père David deer to a Chinese zoo sparked a minor diplomatic crisis. Britain having at that time no formal relations with post-revolutionary Communist China, zoo secretary Solly Zuckerman was called upon by the Foreign Office to justify his decision to loan the deer.³⁶ In a more carefully executed deployment of nonhuman animals as vehicles of signification, the London Zoo sent a giant panda to Moscow in a dual strategy of conservation and international conciliation. This effort was thwarted when Desmond Morris, the zoologist in charge of the operation, was investigated by the Russian secret police on account of his links to the naturalist and MI5 agent Maxwell Knight.³⁷ This traffic in animal bodies across national borders aspired to create what the military historian John Kinder has referred to as 'a globally integrated *zoo world*' which could serve as a model for more conventional projects of political internationalism.³⁸ Although the Society's panda was meant as a gesture of international cooperation, her deployment as an instrument of geopolitical strategy shares the same logic as Robert Falcon's imperial-chauvinist animal pageantry. In each case, the nonhuman animal is almost entirely obscured by the human

³⁴ Harriet Atkinson, *The Festival of Britain: A Land and Its People* (London: I.B. Tauris, 2012), p. 23.

³⁵ I use 'actor' in the sense derived from work in Actor Network Theory as developed by Bruno Latour and others; this work decouples the concept of agency from the humanist insistence of intentionality. See especially *Reassembling the Social: An Introduction to Actor Network Theory* (Oxford: Oxford University Press, 2007).

³⁶ Zuckerman, *Monkeys, Men and Missiles*, p. 52.

³⁷ Desmond Morris, interviewed for the Wild Film History project, <<http://www.wildfilmhistory.org/oh/19/Desmond+Morris.html>> [accessed 6th November 2011], unpaginated.

³⁸ John M. Kinder, 'Militarising the Menagerie: American Zoos from World War II to the Early Cold War', in *The Martial Imagination: Cultural Aspects of American Warfare*, ed. Jimmy L. Bryan (College Station, TX: Texas A&M University Press, 2013), p. 17. I will return to the role of animal life in mediating constructions of international solidarity in my final chapter.

meaning it is conscripted to signify; animal life is rendered as the pre-political material from which political alliances are constructed.

The Old Men at the Zoo suggests that neither the instrumentalist ideology represented by the scientists and technicians nor the imperialist understanding of human-nonhuman relations leave space for ethical considerations. The zoo administration's preparations for British Day exemplify this erasure, as Wilson shows how the ethical status of the animals in question stands in direct relation to their role within the system of signifying practices:

Those creatures such as lemurs, armadillos, Brazilian tapirs, sloths and manatees whose species had never known the glories of British rule, were temporarily banished to a remote corner of the North Side of the Gardens. Had Beard so wished, he could have slaughtered them all with an easy nod of assent from our President or our Director. Their mere presence was in some sense a counter-demonstration. (p. 254)

Non-human life is granted provisional inclusion within the sphere of ethical consideration, not on the basis of its intrinsic value, but of its coherence with the prevailing narratives of the dominant ideology. Those elements of the non-human world which are unintelligible within the schema of colonial chauvinism, or which contest its dominance, are excluded from the ethical community.

It is important to note that, in their appropriation within anthropogenic signifying practices, non-human animals are not entirely without agency of a kind. The power relations which characterise Falcon's appropriation of the non-human world take the form described by Foucault, who argues that

power is not exercised simply as an obligation or a prohibition on those who 'do not have it'; it invests them, is transmitted by them and through them; it exerts pressure upon them, just as they themselves, in their struggle against it, resist the grip it has on them.³⁹

Foucault grasps power and agency within an anthropocentric frame, whereby power is the understood as the totality of relations existing between *human* actors, and the concept of agency is narrowed to encompass only that kind of agency which we conventionally ascribe to humans. In spite of this, his underscoring of resistance as an inevitable component of power relations holds for those relations existing between humans and the non-human world. In *The Old Men at the Zoo*, non-human animals are not passive or inert objects on which human power inscribes itself; rather, they are marked by their ability to resist, albeit with curtailed means, the power which is exercised over them – for instance, the sick animal which lashes out at its keeper at the

³⁹ Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. by Alan Sheridan (London: Penguin, 1991), p. 27.

beginning of the novel. The field of power which contains Wilson's animals is irreducible to the strictly negative relations of captivity and dominance; they always retain, at the level of the body, the ability to physically contest those relations.

Resistance does not only take place at the level of physical forces; it also occurs – beyond the apprehension of the animals themselves – at the level of signification. In the case of Falcon's signifying animals, quoted above, it is precisely their incorporation into human systems of meaning that best manifests the animals' capacity for resistance. One common trope of humanist discourse, connecting approaches as diverse as cultural anthropology and Lacanian psychoanalysis, is to stress that humans alone are capable of creating signifying systems and symbolic meaning. For example, Marshall Sahlins argues that

The distinctive quality of man [is] not that he must live in a material world, a circumstance he shares with all organisms, but that he does so according to a meaningful scheme of his own devising, in which capacity man is unique.⁴⁰

Falcon's incorporation of non-human animals into a narrative of colonial triumphalism exemplifies this tendency to transform the natural world into units of symbolic meaning. But in this case the signifying scheme fails to encapsulate all of nature, so that those animals which exist beyond the scope of (both political and ecological) imperial power necessarily constitute 'a counter-demonstration' (p. 254). Sahlins argues that the human creates 'a meaningful scheme of *his own* devising', but it is precisely this 'own', this sense of ownership or possession of our signifying practices which is called into question by the failure of signification to circumscribe its objects. Falcon aspires to create a signifying system which could naturalise British hegemony over nature (and non-European nations), with the trophy-like display of the animals becoming a powerful display of force, an instantiation of an apparently limitless British mastery. Against this, the material existence of 'species [which] had never known the glories of British rule' points to the inability of the author of signifying practices to contain the meanings that those practices can generate. The only recourse for the author is to manage those meanings by marginalising elements which do not produce the intended effect, whether through the symbolic violence of 'banish[ing]' them to some 'remote corner', or the actual violence of commissioning their 'slaughter'. These strategies of managing meaning therefore effectively separate those animals who are included within the sphere of ethical concern from exposed to violent death. The suppression of those nonhuman animals which are in a relation of exteriority to imperial power thus demonstrates their agentive capacity to resist (albeit negatively) the universalising claims of colonial discourse.

⁴⁰ Marshall Sahlins, *The Use and Abuse of Biology: An Anthropological Critique of Sociobiology* (Ann Arbor: University of Michigan Press, 1976), p. vii.

Falcon's efforts to curtail the unintended excesses of signification through exclusion can be understood as a strategy for managing disorder. I have argued that a conceptual framework relating order to disorder can shed light on Wilson's critique of the imperial model of human-nonhuman relations, and critic Averil Gardner has shown how this opposition structures much of Wilson's thinking. For Gardner, Wilson's novel invokes

the dichotomy between Town and Country, between two kinds of garden which are yet, as [Wilson] admits, the same thing seen from different angles: the 'wild garden' which simulates the disorder of nature in an orderly way, and the 'garden or clearing in the wild' which demonstrates man's ability to conquer that powerful disorder but only within narrow limits.⁴¹

Falcon's project of using the zoo to contain and incorporate the natural world into symbolic practices can be usefully understood as creating a kind of 'clearing in the wild', where human meanings (and therefore order) take precedence over the material existence of non-humans. Opposed to Falcon, we can identify Dr Leacock's proposal of a managed nature reserve as representative of the 'wild garden' concept, and this concept should in turn be understood as expressing a shift in attitudes towards nature in wider society which seeks a revaluation, however limited, of human relations to nature.

Postwar Ecologies of Space and the Affects of Observation

At the root of the conflict between competing visions of human-nonhuman relations in *Old Men* lies an argument over the meaning of modernity. Robert Falcon embodies a definition of modernity which has been thoroughly critiqued in postmodernist and postcolonial theory. This understanding defines modernity as a Eurocentric imposition of a bogus universality, leading inevitably to political, cultural, and, I would add, ecological imperialism. It sees modernity as anxiously preoccupied with purifying its constitutive oppositions – especially in this case, human/non-human and European/non-European. Another definition of modernity finds expression in the novel's representation of science. This would characterise modernity by its faith in instrumental rationality, and is expressed (with markedly different emphases) by figures as diverse as Jürgen Habermas, Martin Heidegger and Adorno and Horkheimer. In *The Old Men*, Dr Leacock resists the dominance of instrumentalism, but nonetheless legitimates his project by inscribing it within a familiar rhetoric of modernisation: “I think it more than probable that this sort of menagerie [i.e. the London Zoo] will become obsolete. Probably in our lifetime, if you want my candid opinion” (p. 148). The shift in human-nonhuman relations

⁴¹ Gardner, *Angus Wilson*, pp. 2-3.

heralded by Leacock's dissolution of the zoo is posed as an instance of progress, driven almost by historical inevitability, and therefore perfectly compatible with the teleologies of liberal humanist modernity. Despite this, I will argue that his project in fact uneasily occupies the space between modern progressivism, Romantic anti-modernism and an emergent environmental awareness specific to postwar culture that takes the reconfiguration of spatial relations between town and country as its point of departure for a new ecological ethics.

In spite of Leacock's modernising rhetoric, his and Falcon's competing ideologies share an understanding of the contemporary instrumental culture as representing a kind of loss or decline. Wilson's narrator, Carter, who sides with Leacock in the dispute, characterises their positions thus: "I wanted, as [Leacock] did, a much larger National Wild Life Preserve to *replace what we had lost*; I did not want Bobby's romantic, childish *revived Victorian Zoo*" (p. 18, emphasis added). Both argue for a return to an earlier mode of relating to nature, but disagree over what form this must take. In spite of Carter's dismissal of Falcon as 'romantic', it is Leacock's vision which draws most heavily on the tradition of romanticism. In an episode which underscores the emergence of the televised nature documentary in postwar mass culture, Leacock presents a television special in which he appeals to the pastoral aesthetics which mark certain tendencies within romanticism in order to make his case for revaluating human relations to nature.⁴² His polemic presents images of crowds, traffic and widespread urbanisation as an 'evocation of a modern strangled, frustrated existence' (p. 113). Leacock proclaims this "'the death of Man's soul'" (p. 114). Counter-posed to this, he offers images of 'the former green belts around our cities' (p. 115) as icons of the fragile and retreating boundary between urbanised modernity and nature. Referencing a romantic tradition of pastoralism, he decries the assault of industrial capitalism on agrarian society: "'That countryside," said Dr Leacock, "was sacrificed in the name of boom and expansion"' (p. 115), and in this, Leacock also alludes to the overlooked costs of the postwar economic resurgence.

Unlike the instrumentalism of the researchers or the performance of mastery in Falcon's imperial zoo, Leacock's intention to replace the cages of the zoo with a cageless wildlife reserve is framed as a specifically ethical intervention in the interests of the animals. Leacock chooses to foreground this in his television polemic:

⁴² Desmond Morris, whose zoological diplomacy confounded the Soviet secret police, presented *Zoo Time* at the London Zoo between 1956-1959, when he left to take up the position of Curator of Mammals for the Society. David Attenborough established his career in television while presenting *Zoo Quest* (1954-63), in which he was filmed capturing wild animals for the Zoological Society's collections. A valuable overview of postwar nature documentaries as a mass cultural phenomenon is provided by Gail Davies, 'Networks of Nature: Stories of Natural History Film-Making from the BBC' (unpublished doctoral thesis, University College London, 1997).

Now suddenly we saw photographs of the Zoo – animals, birds, reptiles, fish, even insects, he had managed to direct the camera at all of them so that they were seen cornered, cramped, monotonously pacing backwards and forwards across what seemed minute spaces, flying to the tops of oppressively low cages, swimming in desperate circles, jostling one another at the corners of dwarf rockeries or midget pools. (p. 114)

This representation of the stereotypical behaviour of captive animals is the text's most explicit expression of unease at the ethics of zoo-keeping. The zoo is figured as an artificial space at odds with a more authentic mode of experiencing nature. This in turn is understood as a product of the alienation which accompanies modernity, and Leacock asserts that this alienation works across species boundaries by assimilating these images of animal captivity to the preceding images of urban crowds. Reversing this alienation is the primary motivation of Carter and Leacock, who concisely defines his project as seeing "Man restored to Nature" (p. 88).

Dr Leacock's critique of the zoo as a space of confinement resonates with many of the arguments commonly deployed in the environmental movement. While I would broadly agree with the aims of this critique, the precise manner in which it is advanced presupposes some problematic ontological assumptions. It is worth pausing to interrogate these assumptions here, since they are so widespread in the postwar pro-animal and environmental movements, and remain a crucial part of the conceptual framework of environmentalism today.

Underlying Leacock's proposal and the discourse of environmentalism is the notion that humanity has become alienated from nature. Though this notion has spurred many positive attempts to forge less destructive relations with the nonhuman world, it has the disadvantage of sharing a conceptual foundation with arguments which seek to legitimate human ecological imperialism. The idea of alienation, in an ecological context, concedes the basic premise of metaphysical humanism: that humans represent a complete and decisive ontological rupture with all that is non-human, thereby necessitating a series of conceptual breaches which partition the world into nature and culture, the natural and the artificial, primitive barbarism (or utopia) and civilization.

Even if one seeks their eventual reconciliation, the assumption that nature and culture could ever have been cleft apart, or that they are even especially coherent concepts in a post-Darwinian world, ensures that Leacock and other environmentalists must share the same conceptual framework which legitimates the modern expansionism that they struggle against. The conventional narrative of humanist modernity describes an ascent from the state of nature: a hard-fought battle between human culture, reason and order on the one hand, and disorderly nature, human animality and barbarism on the other. Leacock's ethics finds resonances in ecological political thinking, and in literary ecocriticism and theory; in each case, the basic

orientation of humanism is conceded, only with the privilege bestowed on the human now inverted.⁴³ The idea of a ceaseless triumph of order and culture becomes instead a narrative of decline, which stresses that nature – understood as a kind of ordinary plenitude – has been perverted by the overbearing hubris of human civilization, and that a widening gulf – experienced as alienation – has opened between the two conceptual poles. Humanist ontologies on both sides of the debate grant the human an exceptional status, for better or for worse. Against this, I would propose a posthumanist analysis of the figure of the human, which genealogically stresses that the idea of humans representing a decisive ontological break is itself of relatively recent historical provenance, and in any case relies on anachronistic pre-Darwinian assumptions.

One exemplary attempt to offer an ethical critique of zoos shares this problematic conceptual dualism. In *Reading Zoos*, Randy Malamud argues, like Wilson's Dr Leacock, that zoos can never provide an authentic experience of nature because they are artificial spaces which present nature mediated through human structures of meaning. He stresses that animals as they appear to us in zoos are always-already *interpreted* animals. In this sense he can be understood as critiquing the tradition, embodied in *The Old Men* by Robert Falcon, of zoos presenting a narrativised account of human-nonhuman relations. Malamud is right to point to the pernicious effects of zoos as a social institution, both for humans and non-humans. Nonetheless, I remain wary of any critique which grounds itself in a common-sense distinction between the natural and the artificial, accepting as it does a tacit humanist understanding of the human as the sole author of artifice, and thereby opening a space for a narrative of alienation which is ultimately grounded in an inverted human exceptionalism. Malamud's critique of zoos as a mediating institution draws on this ontology to counterpose against artifice the idea of an unmediated, authentic experience of nature:

It is impossible to overstate the cultural importance of knowing animals *in authentic ways*. The more pervasive zoos become as a mediating institution between people and animals, the more impoverishment and degradation we can expect to characterise any of our numerous cultural practices that interact with the realm of animals.⁴⁴

One half of this critique shares the tacit ontological assumptions of much post-Kantian philosophy. In zoos, we only have access to the phenomenal animal; that is, the animal as it

⁴³ This attitude is most pronounced in the radical environmentalism (or deep ecology) of Arne Næss, but it shares features with the more modest environmentalism of literary ecocritics such as Jonathan Bate, who, like Wilson's Dr Leacock, draws on a specifically English-nationalist tradition of Romantic naturalism in order to propose a more ecologically responsible alternative to the instrumentalism of modernity. See especially Bate's *The Song of the Earth* (London: Picador, 2001).

⁴⁴ Malamud, *Reading Zoos*, p. 34, emphasis in original.

appears mediated by our structures of understanding. Breaking with this tradition, Malamud seems to suggest that the wild animal—observed in a state of nature as opposed to the artifice of the zoo—represents the real or authentic animal, the noumenal animal-in-itself, and it seems to follow that we can experience it as such if only we can escape the mediation of the zoo space. This strategy of heralding immediate and authentic experience over and against a mediated (and therefore alienated) relationship to nature, which is common to both Malamud and Wilson's Dr Leacock, makes the problematic assumption that mediation could ever be escaped. Even in the ethological encounter between the subject and nature in the 'wild', our experience of nature must remain mediated by our structures of understanding, language and discourses. And is it true that this mediation – which in Western modernity we have learnt to conceptualise as 'alienation' – announces the ontological break of 'Man' (and only Man) with 'Nature'? Or might it rather inhere in our embodied, animal being, a product of cognitive capacities which belong to our evolutionary inheritance?

In *The Old Men at the Zoo*, Falcon's nostalgic, imperialist zoo is condemned by Dr Leacock and Carter as a manifestation of the most pernicious effects of a mediated, alienated relationship to the non-human world. The position of the scientific-instrumentalist ideology is more ambiguous, with Leacock welcoming the material benefits afforded by scientific modernity whilst at the same time bemoaning an attendant loss of authenticity; a multiplication of technologies of mediation in the form of the laboratory and the classroom. He privileges instead a particular form of scientific practice associated with 'those who learn to live among wild life': the 'naturalists and ecologists' (p. 117). He goes on to offer this qualification:

“Of course,” Leacock told us, “this does not mean that the intellectual workers with all that they have done and will do for humanity do not still have a central place in zoological studies.”

And there we saw the anatomists, the biologists, the bacteriologists, the biochemists and a legion of others in their labs and their lecture rooms. We saw, we admired, but after the field workers, we somewhat doubted. (p. 117)

Leacock retains but deprecates laboratory-based science, suggesting that it is incapable of overcoming the alienation from nature which characterises modernity. He advocates a shift in emphasis from the laboratory to the field, and in doing so he reflects the growing prestige of ethological work in the public imagination, as reflected in the emergence of figures like Desmond Morris, David Attenborough and Konrad Lorenz as public figures and celebrity environmental advocates. With this imaginative relocation of the human-animal encounter in scientific work, Wilson sketches the displacement of the laboratory by the field, and this might be understood as part of a broader resistance towards the objectifying imperatives of scientific

modernity. This change was met with resistance, however, as Jonathan Burt points out: Zuckerman, who was the Secretary of the Zoological Society for much of the postwar period, expressed

contempt for fieldwork and severely criticized those who, in his view, mistakenly looked to ethnology rather than physiology as a basis for their theoretical models. Zuckerman preferred the laboratory to the field, whereas the reverse was true for the primate scientists that came of professional age after the Second World War.⁴⁵

This postwar turn towards the field as the privileged space of scientific research displaces some of the key tropes of instrumentalism – disinterested rationality, human exceptionalism, transcendental subjectivity – in favour of a more affectively engaged style of scientific practice. Leacock hopes that this will precede a general reconfiguration of human relations to nature, where a new generation will ‘come to know animal life as it should be known, through the senses and the instincts’ (p. 118). This grounds the act of spectatorship not in the disinterested God's-eye-view of the subject of humanism, but explicitly in the ‘instincts’, in human animality.

The novel's narrator, Simon Carter, enacts Leacock's wish for a shift from an instrumental, clinical and objectifying style of observation to a new, affectively engaged form of (para)scientific vision, and Wilson links this new mode of observation to a reevaluation of the ethics of human-nonhuman relations. Comparing his professional role as a custodian of the zoo with his private practice of amateur naturalism in the field, Carter makes this ethical dimension explicit:

I felt myself not a guardian but a prisoner of the caged beasts. My delight had been in their free movements, their untamed terrors and cruelties, the slow discovery of a pattern of life as I watched it unfold for hours at a time had freed me from all consciousness of self. There in the Suffolk beach copse or the Norfolk pinewood, I had myself known life only through the senses. (p. 81)

Again, the humanist trope of disembodied, objective vision which characterises instrumentalism is displaced in favour of a new mode of observation founded on human animality. In this case, the full sensorium is placed at the centre of the act of observation, and Carter refrains from privileging the visual, which in scientific accounts defines the practice of observation (what Donna Haraway has described as the use of the visual ‘to signify a leap out of the marked body and into a conquering gaze from nowhere’).⁴⁶ Instead, he levels the distinctions between the senses, placing vision on an equal footing with those senses – auditory, olfactory, haptic – which

⁴⁵ Jonathan Burt, ‘Solly Zuckerman: The Making of a Primatological Career in Britain, 1925-1945’, *Studies in History and Philosophy of the Biological and Biomedical Sciences*, 37 (2006), 295-310 (p. 296).

⁴⁶ Donna Haraway, ‘Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective’, in *Simians, Cyborgs and Women: The Reinvention of Nature* (London: Free Association Books, 1991), pp. 183-201 (p. 188).

are most often associated with human animality. Carter's naturalism repeats some of the rhetoric of scientism, but with a radically different, ethically-invested inflection. In observing nature, he is 'freed from all consciousness of self', but not, this time, in order to claim the privilege of scientific objectivity over the material and cultural embeddedness of the observing subject. Here, the dissolution of self is a prelude to a fuller immersion in the natural world, which – even if it is founded on a problematic understanding of alienation – is nonetheless ethically productive in that it acts as a counterpoint to the violence of captivity, leading to a sympathetic identification with the captive animals which is precluded by the imperialist and instrumentalist schemas. Importantly, this reframing of observation simultaneously restores animals to authenticity, understood as bodily autonomy (their 'free movements') and a reversal of domestication and control (their 'untamed terrors').

Carter's cultivation of the unalienated environmental sensibility advocated by Leacock finds its fullest expression in his attempts to locate and observe badgers in the wild. Throughout the course of the novel, these efforts are continually thwarted, and Carter only succeeds as the text draws to a close. The Cold War between Britain and the European state has erupted into open conflict, and Carter retreats to the war-ravaged countryside with the intent of safeguarding a shipment of valuable animal specimens. The war has disrupted the regular supply of food to the countryside, and, desperate with hunger, Carter is forced to hunt in order to survive. At this point, Carter finally encounters his badgers:

First a snout, then a flash of black and white, then a heavy boar badger trotted out and stood sniffing the wind. [...] A few minutes later came, more cautiously, his mate. She was followed by two young cubs, who began at once to snap and roll over each other in mock fighting. The sow joined in the play, and soon even the boar was sliding and rolling with his family. This was the happy family play whose healing innocence I had been cheated of again and again in the days of watching at Stretton. (pp. 299-300)

The eventual success of Carter's efforts is marked by a shift in tone in Wilson's prose. As Averil Gardner notes, 'the passages in the novel [...] where [Carter] attempts to observe badgers are rendered with a lyrical delicacy unusual in Wilson's work.'⁴⁷ Carter's shift from the instrumental to the affective *ethos* of human-nonhuman relations finds its definitive expression in this encounter, and the cynicism which inflects Carter's narrative voice evaporates. The badgers are transformed into objects of sympathetic identification by their assimilation to human familial and domestic norms.

In spite of this identification, Carter, in his hunger, shoots the badgers for food. Wilson presents this by drawing on themes familiar from Hobbesian political philosophy and certain popular

⁴⁷ Gardner, *Angus Wilson*, p. 79.

interpretations of Darwinism: in the absence of sovereignty – that is, in the confusion that follows a wartime crisis – the social contract which determines civil social and ethical relations is dissolved; existence becomes a struggle in which the strong kill the weak, and the gains of civilization are rolled back as human animality asserts itself as the dominant principle. So, even if Carter and Leacock's 'authentic' mode of observation can identify with its objects and invest them with ethical status, this redefinition of the ethical community is immediately nullified in the event of a crisis or a struggle for survival. But the text refuses to accede to this conventional narrative of crisis and predation, as Carter is finally unable to consume the badgers:

'Nausea fought with hunger in me. [...] Suddenly I vomited. So violent were the spasms that it seemed as though my body were rejecting all its vital organs. I spewed a flash of light vermilion blood.' (p. 301)

Carter repudiates his ethical transgression at a bodily level, and it is through the visceral aspect of his embodied being, which seems to 'reject all its vital organs', that this is represented. The trigger for his nausea is a partner's encouragement to eat – "'That'll put body in you'" (p. 301) – which unwittingly offers an unbearably literal description of the act of consumption. This climactic episode mobilises several of the text's key motifs – the shared bodily finitude of human and animal; the relationship between modes of observation, natural and artificial spaces, and the ethics of human-nonhuman relations – to create a compelling ethical moment which challenges the modern orthodoxy of disengagement from the nonhuman world.

Carter's amateur naturalism challenges the spatial logic of confinement and detachment which characterises the zoo in late modernity. Its culmination in the slaughter of the badgers, however, reflects a sense of defeat which pervades all of the text's icons of reform. Dr Leacock's nature reserve suffers a similar fate, being compelled to dissolve itself after a series of accidents and conflicts. In a quote to the press, Leacock says that "'I've come regretfully to the conclusion that what we are doing at Stretton is wrong. An animal that cannot trust in the surety of its own confinement is an unloved animal'" (p. 215). Of course, Leacock's response should not be taken as an authoritative judgement on the prospects for reform, but the text's persistent retreat from more positive ecological representations demands a response. What, after all, is the text trying to say about the possibility of meaningful change to relations between the human and the nonhuman world?

Dominic Head is sceptical of attempts to read Wilson's fiction as advocating a shift towards ecological responsibility. Referring to a novel by Wilson's biographer and literary *protégé* Margaret Drabble, Head claims that 'as is often the case in Angus Wilson's novels, however, the

possibility of low impact living, and the social disengagement it implies, is exposed as a false option'.⁴⁸ This pessimistic reading is borne out by the final pages of the novel, where Carter has been installed as Director of the Zoo in a phase of postwar reconstruction: 'The last three years had given me a wealth of ideas for the Zoo's future and a corresponding wealth of caution and moderation in my belief in their possible application' (p. 341). This disposition is in marked contrast to the attitude that followed the end of the Second World War, when in Solly Zuckerman's words 'visions of a new and ideally reconstructed world were in the air'.⁴⁹ Wilson's ambivalence reflects his liberal investments in moderation, as well as perhaps the broader retreat from the political which characterised literary culture after the transition from postwar optimism to Cold War tension.⁵⁰ To conclude, I'd like to turn to a novelist who challenges this tendency towards political cautiousness, and who uses the zoo to imagine instead the wholesale rejection of modern instrumentalism's pernicious effects on nonhuman animal life.

Hackenfeller's *Ape, or, the Comedy of Scopophilia*

The political and military priorities of Western governments in the Cold War period were oriented towards the goal of *containment*. Soviet expansionism was the primary target of this policy, but strategies of containment were also applied in a broader sense to anything which might pose a risk to the security of the Cold War state (we might think here of the strategies of securitisation – of surveillance, infiltration and control – that were applied to domestic political movements from civil rights to nuclear disarmament). In Britain, the literary culture of the period was broadly complicit in reproducing this political orientation towards containment according to Andrew Hammond, who argues that 'with few exceptions, novelists contributed to the British Cold War consensus as much as film makers, broadcasters and journalists'.⁵¹ One consequence of this proximity of cultural production and state power was the proliferation of narratives concerning the confinement and domestication of risk, and, as I will argue throughout this thesis, the risks of the Cold War moment were frequently externalised in literature and film as nonhuman in origin.

⁴⁸ Dominic Head, *The Cambridge Introduction to Modern Fiction 1950 – 2000* (Cambridge: Cambridge University Press, 2002), p. 33.

⁴⁹ Zuckerman, *Monkeys, Men and Missiles*, p. 97

⁵⁰ In his introduction to *The Nouveau Roman Reader* (London: Calder, 1986), John Calder traces a similar historical dynamic in French literature, linking the repudiation of the political engagement which was associated with literary modernism to the crises of the early Cold War; see especially pp. 12-15.

⁵¹ Andrew Hammond, *British Fiction and the Cold War* (London: Palgrave Macmillan, 2013), p. 23.

In what remains of this chapter, I will read the work of novelist Brigid Brophy as a rejection of these imperatives of confinement and control. In *Hackenfeller's Ape* (1953), Brophy develops a more radical critique of scientific instrumentalism and human chauvinism than we find in Wilson's *The Old Men at the Zoo*. Starting, as Wilson does, from the zoo as an exemplary space of containment, Brophy rejects the carceral zoo (and the reformist strategy of 'limited liberty' advocated by Wilson) by offering an early literary representation of animal liberation. Her own attitude towards animal use is notable for its early, trenchant critique of exploitation. Writing in defence of 'animal liberation' some ten years before Peter Singer's book of that title was published, Brophy asserts that

in all relationships between humans as a group and the other animals as a group, the moral position of the humans is straightforward. We simply override the others. Arbitrarily and wantonly—without, that is to say, justification or necessity—we are tyrants.⁵²

Brophy's liberationist politics thus shares with Wilson a suspicion of a certain disinterested or clinical style of observation in zoos and in scientific research. More radically than Wilson, however, she asserts a structural link between the visual objectification of the animal-as-image on the one hand, and the technological militarism of the Cold War state on the other.

Hackenfeller's protagonist, the bachelor aesthete-scientist Professor Darrelhyde, is a researcher attached to the London Zoo, where he hopes to observe the supposedly spectacular mating rituals of a fictional primate species, Hackenfeller's Ape; these rituals comprise 'a ceremonial so poetic, so apparently conscious that, if it were true, it must mark a stage between the highest beast and Man' (p. 19). The subjects of his research, two apes named Percy and Edwina, are uncooperative, with Percy in particular coyly refusing the advances of his more sexually assertive partner. Darrelhyde waits, and, unable to witness the sexual act the description of which would cement his reputation as a researcher (p. 114), he amuses himself by singing arias from Mozart's *The Marriage of Figaro* to his apes. Meanwhile, the Cold War exigencies of security and militarism are making their own claims on his research subjects. Kendrick, a technocratic functionary on confidential state business, wants to requisition Percy for state-sponsored research. Percy is to be the test subject of the first orbital rocket flight, the purposes of which are unclear, but which, it is later suggested, may have something to do with military applications. In particular, it is hinted that the rocket program might one day be used for the deployment of nuclear bombs from orbit (pp. 43, 52-53, 65). Overcome by an inchoate sense of ethical responsibility towards Percy, Darrelhyde finally devises a comically inept plan to

⁵² Brigid Brophy, 'In Pursuit of a Fantasy', in *Animals, Men and Morals*, ed. by Stanley and Roslind Godlovitch and John Harris (New York: Grove Press, 1971), pp. 125-145 (p. 125).

liberate him. The plan fails, but does secure a moment of freedom for Percy, who, after touring the zoo, returns to his enclosure to finally mate with his partner Edwina. Percy is killed by the zoo staff, though even his death won't stop him being requisitioned as resource for state business. With human spaceflight trials prohibited by the state, Kendrick circumvents this restriction by skinning Percy's body and wearing his pelt, and is blasted into orbit on a flight he likely won't survive (p. 110). Meanwhile, the professor is at least partially satisfied, since Percy's brief sexual encounter with Edwina has resulted in conception, and this has saved her life; pregnant apes are barred from research, not out of sentiment, but because their use would upset scientific 'calculations' (pp. 98-99).

The novel opens with a parody of the naturalist's gaze, which ranges over Regent's Park (where the London Zoo is situated) and frames its human occupants as so many 'creatures' exhibiting 'a high degree of social organisation' (p. 11). This inversion of conventions of species representation and styles of observation is central to the novel's project, which investigates relationships between power, scientific discourses and the act of looking. In her reading of the zoo space, Brophy shares with feminist film theory a preoccupation with the political uses of visual pleasure. The Freudian concept of scopophilia names a libidinal investment in the act of looking, and is usefully glossed by Laura Mulvey, for whom scopophilia is 'associated with taking other people', and, we could add, other animals, 'as objects, subjecting them to a controlling and curious gaze'.⁵³ The zoo is obviously a space organised around maximising the likelihood of gratifying scopophilic desire, and Mulvey's association of scopophilia with *control* hints at a possible point of convergence between the act of looking in the zoo and the technoscientific drive to domesticate risk that dominates Cold War culture. *Hackenfeller's Ape* is in large part devoted to elaborating this link between visual and technical power.

For Brophy, human scopophilia is exceptional (and exceptionally problematic), since we are 'the only species which imprisons other species not for any motive of economic parasitism but for the dispassionate parasitism of indulging its curiosity' (p. 12). This 'dispassionate' gaze is of course not so dispassionate; rather, it relies on suppressing its own aesthetic, and, as Brophy contentiously suggests, erotic investments in the act of looking in favour of establishing distance between the viewer and the animal. Dispassionateness here becomes a strategy of legitimisation which allows the viewing subject to continue looking while suppressing the possibility of any ethical responsiveness towards the recipient of the gaze.

⁵³ Laura Mulvey, 'Visual Pleasure and Narrative Cinema', *Screen*, 16.3 (1975), 6-18 (p. 8).

[Percy] seemed to demand from the Professor some intellectual illumination. He sought enlightenment of his torment in prison.

The Professor had for a long time hedged, declining to admit that there was torment, refusing to stand in the receiving position of this enquiring relationship, disinvolving himself from the monkeys' affairs. (p. 18)

The disinvolvement of the scientist from the object of his scopophilic attention here becomes part of a generalised policy of establishing a unilinear structure of response which rules out the possibility of reciprocity: the scientist looks, but is not looked upon; he has proprietorial and scientific claims over the animal's body, but the animal may make no demands from him.

In my reading of *The Old Men at the Zoo*, I argued that modern scientific reason represents its characteristic modality of vision as one that is divested of the particularity of a finite viewing body in a definite situation. In the mythology of science, it is not a case of *this* viewing subject observing *this* particular animal in *this* space, but rather the disembodied gaze of science-in-general observing a representative of an (internally homogenous) species: the 'view-from-nowhere' which Simon Carter rejects in his cultivation of an affective, embodied appreciation of his badgers. In *Hackenfeller's Ape*, Brophy offers a similar account of the fantasy of disembodied vision, and indeed, her viewing subject is himself curiously incorporeal; we are told 'how little flesh there was on [Darrelhyde's] flanks' (p. 23). Far more than Wilson, however, Brophy is interested in exposing the fantastical nature of this account of scientific vision. In the first third of the novel, she stages the serial failure of scientific power.

He [Darrelhyde] was here on business—observation. What he had come to observe, however, and had fully expected to observe every day for the next three weeks, was not happening. Meanwhile, he sang. (p. 14)

Darrelhyde's singing of arias from Mozart's *The Marriage of Figaro* to his apes is itself an index of the constitutive repressions of scientific vision. Science aspires to be a neutral observer of the sexual act, but finds instead that its observational distance is compromised by an inevitable aestheticisation of desire. Later, Darrelhyde thinks he sees signs of consummation, though on closer inspection this turns out to be merely

a false alarm. The male monkey, with that disregard of his own dignity which, rather than his physical appearance, marked him as non-human, had stood up to scratch his buttocks and then once more squatted down on them. Nothing else had changed. (pp. 14-15)

Hackenfeller's Ape thus dramatizes the failure of the clinical gaze, and the frustration of Professor Darrelhyde's scopophilic desire reveals the masculinist, imperious concept of vision (operative in both the zoo and in research more broadly) to be more impotent than penetrating.

Darrelhyde's professional impotency is one factor in his eventual turning away from the anti-affective economy of scientific observation. When he learns of the plan to use Percy for spaceflight research, he struggles with his conscience.⁵⁴ In conversation with Kendrick, the state operative who has come to requisition Percy for the space program, Darrelhyde struggles to articulate his grievances:

The wrongness of the whole idea, which was the strength of the Professor's protest, could not, he knew, be put to Kendrick. He was forced into a weaker position, on Kendrick's own ground.

"You realise I'm studying these animals?" (p. 30)

The hegemony of instrumentalism means that conscience is unintelligible as such, and must be translated into a more appropriate epistemological register. It is not only the military and scientific apparatuses of the state, but also the zoo as an institution which insists on a pragmatic and instrumentalist approach to the ethical problems raised by animal use. Though in some respects reluctant to compromise with the cruelties towards animals that he argues are specific to modernity (pp. 48-53), the zoo's administrator Post concedes that a settlement must be achieved between the zoo and the state. In this, he reflects the networks of power which, according to Kinder, linked the postwar zoo to the military requirements of Cold War politics: 'From World War II to the early decades of the Cold War, zoo directors, animal keepers, exhibit designers, and wild game traders found their professional aspirations bound up with geopolitical forces that, on the surface at least, had little to do with displays of caged animals'.⁵⁵ These links between state power and the zoo led to the sharing of animal bodies as resources for various Cold War projects, with Brophy's Percy being a typical instance of the 'nexus of beast and bomb' identified by Kinder.⁵⁶ As well as material 'resources', the zoo and military shared a commitment to the sovereignty of vision, and both institutions enact their power by guaranteeing the visibility of their respective objects (the captive animal on the one hand, and the enemy population on the other).

⁵⁴ There is an emerging body of cultural and critical work on the use of animals in Cold War space programs. See especially Erica Fudge's analysis of NASA's 1961 test flight and its experimental subject Ham (a chimpanzee), in *Animal* (London: Reaktion, 2002), 25-27, as well as Nick Abadziz's graphic novel *Laika* (New York: First Second, 2007), on the Soviet space dog program.

⁵⁵ Kinder, 'Militarizing the Menagerie', p. 16. In 'Solly Zuckerman: The Making of a Primatological Career', Jonathan Burt points out that Solly Zuckerman, who was secretary of the Zoological Society of London from 1955-77, made his reputation by 'turn[ing] primatological expertise to military purposes' (p. 307). Zuckerman spent the Second World War devising animal experiments to test the body's resilience to explosive blasts.

⁵⁶ Kinder, 'Militarizing the Menagerie', p. 16.

Eventually, Darrelhyde realises the impossibility of confronting the instrumental logic of the military-zoological complex on its own terms. He conceives a plan to liberate Percy from the zoo, though not before attempting to recruit various allies to support his cause. One such encounter sees Darrelhyde meeting with a former Colonel who now works as a campaigner for animal welfare. The Colonel is presented as morally compromised, a figure for the complicity between mainstream animal protection and existing animal industries. He is more interested in acquiring artefacts from the history of animal experimentation than in effectively opposing the exploitation of animals. His prize acquisition is a taxidermied dog formerly owned by Ivan Pavlov, and Darrelhyde is encouraged to view it: ‘The Professor bent down beside the cabinet and, closing his eyes, pretended to look in’ (p. 63). This gesture of refusing the spectacle of the animal body contrasts with the attitude of the Colonel, who derives scopophilic gratification from both his collection of animal trophies and, by proxy, from the efficiency of emerging technologies of vision. Seeing the possibility of its military utility, the Colonel endorses the space program’s use of animal experimental subjects:

“I know the Ruskie. What he respects is strength. When he knows we’re up there, like the eye of God, seeing everything he does, with his industrial areas and his centres of population wide open to us—by jove,” he finished, “we’ll be able to bomb the hell out of the Ruskies.” (p. 65)

The Colonel’s obvious pleasure in the ocular power of military space technology establishes a relationship between scopophilic gratification and physical violence. Transferred from the zoo to the space program, Percy is moved between two institutions which share a common investment in maximizing visibility, and this visibility is intimately linked to power over life and death. The colonel’s words reveal scopophilia as a military-scientific imperative which links the violence of vision in the Zoo to the possibility of nuclear annihilation, and the animal body is the material point of connection between these two institutions.

As the novel concludes, Professor Darrelhyde becomes acutely conscious of the entanglement of aesthetic and instrumental investments in scientific scopophilia. After Percy has escaped from the zoo, he returns to his enclosure in order to mate with his partner. Darrelhyde forgoes the professional prestige of having ‘witnessed what no white man had ever seen’, finding instead that ‘he had, in unscientific compunction, averted his eyes’ (p. 91). As the space which is most fully oriented towards the act of looking, and where the viewing subject is at least partially immunised against the reciprocation of their gaze, the zoo, in Wilson and Brophy, is the site where these investments of power and instrumental violence are given their clearest

expression.⁵⁷ Their fiction suggests that by refusing to look, or by looking otherwise, we might begin to imagine a more responsible relationship towards the other animals and, in the same gesture, to gain some critical distance from the processes of instrumentalisation and militarisation which threatens planetary life itself in the mid-twentieth century.

⁵⁷ John Berger famously suggests that ‘nowhere in a zoo can a stranger encounter the look of an animal. At most, the animal’s gaze flickers and passes on.’ Animals ‘have been immunised to encounter’ by the architectural design of the zoo, and the scopophilic relations it makes possible. ‘Why Look at Animals?’, in *About Looking* (London: Writers and Readers, 1980), pp. 1-28 (p. 28).

Automatic Animals, Lively Machines, and the Disappearance of the Human

I have attempted to demonstrate that the years following the Second World War saw the use of animal life as a device which could be deployed in order to make sense of the transition to a technological culture which was properly global and founded on mass production on an unprecedented scale. This culture, which was subject to the rigours of technological rationalisation (and its political corollary, technocratic oversight), was perceived as effecting the consummation of a tendency already inherent in the project of modernity; namely, the thoroughgoing instrumentalisation of nonhuman animal life as a resource for human use. My analyses thus far have focused on two sites where the concept ‘animality’ played a crucial role in the cultural and symbolic work that accompanied this transition to an intensified regime of production: the zoo, where resistance to the confinement of animals engaged an imagined geography of ‘the wild’ as a location removed from the artifice of late industrial modernity; and the farm, where the thanatopolitics of industrial agriculture figured as a proxy for a more abiding concern with the cultivation of properly virile subjects at a moment when the physical burdens of traditional labour are being ameliorated by technology.

I now want to turn away from these enclosed sites and move towards a diagnosis of a more generalised anxiety in postwar culture concerning the future of humanist individualism and its relation to animal life. The figure of ‘the human’, and the perceived differences between this figure and its exemplary other, the nonhuman animal, underwent a profoundly ambivalent transformation in the years following the Second World War. The development of institutional internationalism in the postwar period saw the establishment of humanist political subjectivity (always figured as a speaking subject, over and against the mute, extra-political animal) as the foundation of a new, supra-national politics of universal humanism.¹ This enlargement of the political community – and most especially, the exclusionary violence which was its condition of possibility – will form the subject of my final chapter.

¹ See Raymond Corbey, “‘Race’ and species in the post-World War II United Nations discourse on human rights”, in *The Politics of Species: Reshaping Our Relationships with Other Animals*, ed. by Raymond Corbey and Annette Lanjouw (Cambridge: Cambridge University Press, 2013), pp. 67-76.

In the present chapter, my aim is to elaborate the negative counterpoint to this enthusiastic institutional humanism. Refusing the optimistic universal humanism of postwar internationalism, many humanists were beset by a double anxiety about the future of subjectivity in technologically-rationalised postwar society. In the first case, humanist subjectivity was perceived to be attenuated by technological and cultural transformations. In the context of an emerging mass culture, new technologies of entertainment and media were charged with rendering their audiences as docile, passive recipients of received truths. Thinkers as diverse as the novelist Ray Bradbury, the philosophers T. W. Adorno and Max Horkheimer, and the social theorist David Riesman identified, in very different ways, a new horizon of subjectivity engendered by the pacifying effects of technologically-saturated mass culture. In the new society, they asserted, inhuman idiocy was endemic, and technology was drawing humanist subjectivity into ever closer proximity to the (alleged) animal stupidity against which it had formerly defined itself. At the same time, subjectivity was being divested of its autonomy and individuality, becoming as regularised and predictable as the technological apparatuses to which it was subjected.

This new conjuncture of humanist subjectivity, animal 'stupidity', and technological regularisation found expression in the repeated invocation, across varying genres of postwar culture, of a figure that I will call the 'automatic animal'. This figure focuses humanism's anxieties concerning the relationship between the individual and the mass, rationalism and stupidity, and agency and instrumentality. Following the automatic animal across a variety of literary, scientific and theoretical texts, I aim to connect this constellation of ideas concerning species, agency and the idea of 'the mass' to a pervasive thematics of mass death (both animal and human) in postwar culture.

If the animalising displacement of human agency by technology and mass culture sets liberal humanism in crisis, this crisis is only intensified by the second, symmetrical development in postwar conceptions of the nonhuman: the emerging recognition that, far from being the mere passive materiality of humanist convention, both nonhuman animals and technologies exhibit a surprising range of wilful behaviours, resisting human attempts to incorporate them into apparatuses of instrumentalisation. This failure of instrumentalisation, and the concomitant coming-into-agency of the nonhuman, threatens the integrity of modernity's technical and political-anthropological project. The second half of this chapter explores the automatic animal as disruptive agency, taking Philip K. Dick's *Do Androids Dream of Electric Sheep?* as a speculative exercise in working through what it might mean for an embattled late-modern humanism to take animal and technological agency seriously. My pessimistic conclusion is that

it remains constitutionally impossible for any humanism to entertain the possibility of nonhuman agency, and that this ongoing failure exacts a deadly toll on nonhuman life.

Mass Culture and Bêtise: Stupidity and Species in Postwar Humanism

By the mid-twentieth century, the process of technological routinisation, which earlier in the century had transformed the sphere of labour and production, came now to revolutionise the leisure habits of the Western countries.² The imperatives of Fordism and Taylorism were translated into the production of culture, as the mass market for film and radio, together with the expansion of international networks of distribution for cultural commodities, meant that a larger section of the population than ever before were positioned as passive consumers of the same standardised and homogenous products of a mass culture industry. This intersection of the rhythms of labour and leisure was noted by T.W. Adorno and Max Horkheimer in their seminal critique of late modernity, *Dialectic of Enlightenment*. According to Adorno and Horkheimer, the new mass culture works ‘by subordinating [...] all areas of intellectual creation, by occupying men’s senses from the time they leave the factory in the evening to the time they clock in again the next morning with matter that bears the impress of the labour process they themselves have to sustain throughout the day’.³

For Adorno and Horkheimer, the intellectual autonomy that had been the promise of Enlightenment and modernity was no longer able to be cultivated in the soil of market-driven mass culture. The noetic act of ‘intellectual creation’ is superseded by a new concern with the occupation of ‘men’s senses’—a shift from wilful subjectivity to docile corporeality. The seduction of the Western masses by standardised cultural goods meant the standardisation of individuals as well as commodities: ‘The culture industry as a whole has moulded men as a type unfailingly reproduced in every product’ (p. 127). This anxious narrative of the disindividuation of late-modern subjects by a hegemonic mass culture found an ironic echo in that culture itself. In Don Siegel’s 1956 film *Invasion of the Bodysnatchers*, the tranquillity of American suburbia is disrupted by an alien invasion.⁴ Neither monstrous nor even obviously inhuman, the aliens of *Bodysnatchers* spread by forming themselves into duplicates of healthy humans. The duplicates are discoverable primarily through their disquieting affective flatness, by their refusal of the Cold War imperatives of faith, patriotism and heterosexual love, and most of all by their

² M. Keith Booker, *Monsters, Mushroom Clouds, and the Cold War: American Science Fiction and the Roots of Postmodernism, 1946-1964* (Westport, CT: Greenwood, 2001), p. 5.

³ T. W. Adorno and Max Horkheimer, *Dialectic of Enlightenment*, trans. by John Cumming (London: Verso, 2010 [1944]), p. 131. Further references will be given in the body of the text.

⁴ *Invasion of the Bodysnatchers*, dir. by Don Siegel (Allied Artists Pictures, 1956).

exaggerated lack of individuality. The replacement of healthy American citizens by indistinguishable inhuman clones stages a double anxiety in postwar culture: firstly, the fear of an elusive and indefinite Enemy that threatens American domesticity; and secondly, a concern that in contemporary society, individualism has been attenuated to the point where one citizen can be substituted for another without remark. In Cold War America, these two anxieties form a kind of unity, and the reassertion of individualism therefore becomes an indispensable ideological weapon against Communism. *Bodysnatchers* should not, however, be read as posing a simple opposition between Soviet collectivism and American individualism; the narrative is intelligible only if one grants that, while Soviet Russia may be a paradigmatic regime of disindividuation, the same social forces of standardisation and conformism are also present, if only incipiently, in Eisenhower-era American domesticity.

Contemporary research in the social sciences contributed to this diagnosis of mass disindividuation and conformism. In his highly influential study *The Lonely Crowd* (1950), social theorist David Riesman identified a trajectory of declining individual consciousness, which, though beginning earlier in the twentieth century, was coming to crisis in the years following the Second World War.⁵ As glossed by the Cold War cultural historian Alan Nadel, Riesman charted how 'In the eighteenth- and nineteenth-century industrialized West, [...] an inner-directed social character emerged that consolidated the values of what is usually called the Protestant Ethic. In the mid-twentieth century, however, this inner-directed individual was being usurped by other-directed people, whose values come not from what Riesman called an internal gyroscope but rather from external radar.'⁶ The autonomous individual which had served as the foundation for the political and philosophical projects of post-Enlightenment humanism suddenly found itself to be an endangered species.

Cold War culture (especially though not exclusively in the United States) therefore encapsulated a parallel series of tensions between individualism and conformism, dissidence and ideological orthodoxy, and human agency and technological determination. Intellectual historians of the period have had much to say about this complex of anxieties, but I would suggest that they have not sufficiently attended to its mediation by one of the primary antagonisms of Western individualism: the relationship between the fantasy figure of 'the human' and its nonhuman others.⁷ In particular, I claim that nonhuman animal life has been drawn upon (often tacitly,

⁵ David Riesman, *The Lonely Crowd: A Study of the Changing American Character* (New Haven: Yale University Press, 2001 [1950]).

⁶ Alan Nadel, 'Fiction and the Cold War', *The Cambridge Companion to American Fiction After 1945*, ed. by John N. Duvall (Cambridge: Cambridge University Press, 2012), pp. 167-180 (p. 167).

⁷ See, for example, Margot A. Henriksen's *Dr. Strangelove's America: Society and Culture in the Atomic Age* (Berkeley: University of California Press, 1997) and Alan Nadel's *Containment Culture: American Narratives, Postmodernism and the Atomic Age* (Durham and London: Duke University Press, 1995), both

sometimes explicitly) as a way of making intelligible the supposedly novel privations which, it was claimed, denatured humanist subjectivity in late-modern mass culture. If the transformations of the postwar period incited anxieties surrounding the disindividuation of the masses (recall Adorno and Horkheimer's assertion that 'The culture industry as a whole has moulded men as a type unfailingly reproduced in every product'), then 'the Animal' stands ready to hand as a cultural resource for thinking through concepts of the 'type' or mass. Because of their supposed conformation to type (or species), animal lives are disindividuated by default, according to humanist convention. In this account, animals are bound by a species-specific repertoire of behaviours and dispositions, and can only be individuated artificially and from without, as in the case of companion animals kept by well-meaning if naïve owners, who bestow upon them names and personalities. The Animal, as the privileged symbol of the mass, the kind, and the type, figures the negation of humanist individualism. It is little surprise, then, that Yale's 2001 edition of Riesman's *The Lonely Crowd* features on its cover the conventional image of a herd of sheep.

Elaborating further this structural role played by the Animal in making sense of the crises of postwar humanism, I'd like now to turn to a novel which explicitly thematises animality in relation to technology and disindividuation. Written in a nine-day stretch at a rented typewriter in the basement of the UCLA library, the origin story of Ray Bradbury's *Fahrenheit 451* (1953) invokes a notion of writing as inhuman, automatic labour, its outcome a novel born of a weird miscegenation of human, animal and machine. In Bradbury's own account, the work of producing the novel saw him

attacking that rentable machine, shoving in dimes, pounding away like a crazed chimp [...]. I did not write *Fahrenheit 451*, it wrote me. There was a cycling of energy off the page, into my eyeballs, and around down through my nervous system and out through my hands. The typewriter and I were Siamese twins, joined at the fingertips.⁸

Writing here effaces subjectivity, the subject being an effect rather than a cause of the text. Constituted in and through the technological apparatuses in which it is inextricably entangled, the writing subject owes more to the vital force of inhuman affect than to calculating reason. Bradbury's account of writing strikes this reader as deeply surprising, since his novel's project is seemingly to push back against the hegemony of the inhuman, the technological and the automatic in postwar society; to reassert literacy and literary culture as a mechanism for

of which are preoccupied with the relationship between the individual and the mass, while having little to say about nonhuman life. Booker's *Monsters, Mushroom Clouds, and the Cold War* is an exception to this tendency, featuring a lucid reading of the 'monster' in postwar popular cinema that I will be drawing on in my next chapter.

⁸ Ray Bradbury, 'Afterword', in *Fahrenheit 451* (London: Harper Voyager, 2008 [1953]), p. 220. Further references to this edition will be made in the text.

anthropopoiesis: an institution which can take up the difficult work of producing properly human subjects at a moment when mass culture seemed set to abolish the possibility of humanist individualism.

Fahrenheit 451 imagines a future American society in which literacy is morally and legally deprecated. Montag, the novel's protagonist, is a fireman: a worker charged with rooting out the last traces of literary culture. In Bradbury's world, the social function of the fire service is inverted. Instead of protecting culture, property and life from the dangers of fire, *Fahrenheit's* firemen are a force for destruction, burning books together with the homes and bodies of the literate dissidents who read them. Montag's introduction in the novel informs us of the new regimes of subjectivity which are produced by mandatory post-literacy. After a day at work in which he had most recently enjoyed the nihilistic spectacle of book burning, Montag returns home where, when we encounter him, he is 'thinking little about nothing in particular' (p. 11). Together with the proliferation of recreational machines and broadcasting devices in the novel, fire is the central figure for the displacement of literacy and cognition by *technē*. In an inversion of the Promethean myth, the acquisition of technics (represented metonymically by fire) which had classically placed humanity in transgressive proximity to godhood initiates instead, in Bradbury's account, a dangerous process which in its late-modern declension threatens to reduce human intellect to inhuman stupidity. When the novel begins, Montag, as a specialist in fire, is presented as having forfeited the intellectual autonomy made possible by literary culture and made impossible by the ascendancy of technological reason. He thinks little, and derives aesthetic nourishment only from the proper and efficient working of technology: 'It was a pleasure to burn', as the novel's opening line puts it (p. 9).

With Adorno and Horkheimer, who noted 'the enigmatic readiness of the technologically educated masses to fall under the sway of any despotism' (*Dialectic*, p. xiii), Bradbury reads the coming together of technology, culture, politics and subjectivity as entailing not liberation but domination. The post-literate masses in *Fahrenheit* spend their time absorbed in high-tech diversions, most notably the soap opera 'family' which is broadcast continuously on three of the four walls of the Montag family home. (The aspiration to add a fourth televisual wall, thus achieving a kind of closure in the conflict between techno-culture and subjectivity, instantiates the acquisitive attitude which Bradbury identifies with postwar consumerism, and supplies Montag with the obligation to go on working in spite of a crisis of conscience.) The effect of all this is to estrange Montag's wife Mildred from (what Bradbury considers as) 'authentic' heterosexual domesticity, as well as diminishing that faculty of critical agency which would

allow her to question the despotic nature of the state and its apparatuses.⁹ The technological apparatuses which disseminate the new mass media are thus charged with levelling and standardising postwar subjectivities, a tendency which Riesman noted in *The Lonely Crowd*. Under the heading 'Entertainment as adjustment to the group', Riesman asserted that, instead of relying on inheritance from tradition or on individual initiative, in the new cultural environment 'The child must look early to his mass-media tutors for instruction in the techniques of getting directions for one's life'.¹⁰

This techno-cultural interruption of the processes of individuation and political subjectivization impacts, it is suggested, on intellectual life, and Bernard Stiegler has recently argued (in dialogue with Adorno and Horkheimer) that this has led to

a process of *generalized proletarianisation*, [...] a process that *liquidates all forms of knowledge*, including and especially, today, *theoretical knowledge*. [...] While this process of proletarianization may produce a kind of pragmatic intelligence, *metis*, ingenuity, a shrewdness or a cunning *through* which everyone seems to have become "cleverer", it in fact leads to a *generalized stupidity* which, in 1944, comes along with the still very recent advent of the culture industry.¹¹

This substitution of acquisitive, practical knowledge for autonomous reason—which Stiegler significantly frames as the ascendancy of *bêtise*, or animal stupidity—finds an echo in the cynical manipulations of Montag's employer Beatty, a fire chief who perfectly well understands the deleterious effects of the new culture, but whose fascistic preference for homogeneity over agonistic individualism leads him to endorse them. For Beatty, one route to social conformity is to "Cram [the people] full of non-combustible data, chock them so damned full of 'facts' they feel stuffed, but absolutely 'brilliant' with information" (p. 80).

The upshot of this highly-mediated culture, where technical and quantitative knowledge enjoys unquestioned epistemological supremacy, is that (what Bradbury would characterise as) spontaneous human individualism is attenuated drastically by the new social forces. As Beatty puts it, "We must all be alike. Not everyone born free and equal, as the Constitution says, but

⁹ Although it is not the main focus of my analysis here, it has been insufficiently remarked in the secondary literature that Bradbury's defence of individualism rests on a paternalistic and socially-conservative conception of individual agency. This is readily apparent when Montag, sloughing off the disindividuating effects of mass culture, excoriates his wife and her friends for their 'dozen abortions', their vanity, and their insincere love for their partners (pp. 131-132). Significantly, when Montag and his allies relate a literary canon which could serve as a bulwark against mass-produced culture and a guarantor of individualism, all the named authors are male (p. 194 and elsewhere). This returns us to an older, feminist critique of humanism: that the paradigmatic Individual (which is another way of saying, the properly human Subject) is never simply an unmarked person, but always implicitly male.

¹⁰ Riesman, *The Lonely Crowd*, p. 149.

¹¹ Bernard Stiegler, 'Doing and Saying Stupid Things: *Bêtise* and Animality in Deleuze and Derrida', trans. by Daniel Ross, *Angelaki: Journal of the Theoretical Humanities*, 18.1 (2013), 159-174 (p. 161), emphasis in the original.

everyone *made* equal. Each man the image of every other” (p. 77, emphasis in original). Bradbury contends that post-literate mass society will result in the substitutability of human subjects: anyone can fill any role in the social totality, because all are essentially identical. Only literacy can cultivate the kind of agonistic individualism necessary to secure the continuation of properly human subjectivity, as one key character asserts. Faber, a former English professor now living in fear of the state, understands literacy as a mnemonic technology, a bulwark against cultural amnesia: books were a ‘type of receptacle where we stored a lot of things we were afraid we might forget’ (p. 107).¹² Persistence in time here is recognised as a condition for the formation of subjectivity, whether the personal time that marks the ontogeny of the individual or the historical time in which cultures emerge and ‘progress’. The new technologies of mass culture dissolve time, continually occupying one’s attention and preventing the reflective remembrance which Faber (and through him, Bradbury) sees as necessary to subjective individuation. Without literacy, and therefore memory, political subjectivity becomes impossible, though for Captain Beatty (the voice of technocratic cynicism in the novel), this is preferable to political conflict between individuals. Faber warns the newly literate Montag to be wary of his employer: ‘But remember that the Captain [Beatty] belongs to the most dangerous enemy of truth and freedom, the solid unmoving cattle of the majority’ (p. 140). Faber’s conventional image of the herd here recalls us to the thesis with which I began: that nonhuman animal life was deployed as a conceptual device for making sense of the supposed decline of humanist individualism in the postwar period.

The culture industry’s promotion of celebrity becomes, from this vantage point, a strangely inhuman exercise. Adorno and Horkheimer assert that ‘Those discovered by the talent scouts and then publicized on a vast scale by the studio are ideal types of the new dependent average’ (*Dialectic*, p. 145). The process of manufacturing celebrity instantiates the tendency, wherever culture and instrumental reason coincide, to efface individual variation and replace it with an appealing though generic substitute. The ideal and the average coincide, and the notion of an exemplary human now functions less as a regulative ideal for political humanism (the fully enlightened self-present subject of reason) and more as a morphological marker signifying value in the marketplace of culture (the film star with the attractive but otherwise unexceptional face). The displacement of individuated subjectivity by the generically appealing face indexes a more general displacement of intellect by corporeality, and for Adorno and Horkheimer, the culture industry’s promotion of a morphological norm places human

¹² Faber notes that books were ‘only one type of [cultural] receptacle’ which could perform this work of *anamnesis* (p. 107). Literature is privileged because ‘good writers touch[ed] life’ especially often, as Faber the Leavisite asserts (p. 108); other forms are in principle capable of doing the same, though they have been more thoroughly captured by the imperatives of commercial culture.

subjectivity in uncomfortable proximity to nonhuman life: ‘Ironically, *man as a member of a species* has been made a reality by the culture industry. Now any person signifies only those attributes by which he can replace everybody else: he is interchangeable, a copy’ (*Dialectic*, p. 145, emphasis added). This shift from cognition to morphology (and a standardised morphology at that) completes the disindividuation of late-modern subjects by the culture industry, and the inhuman remainder of this process is no longer the anthropological ‘Man’ but the biological species *homo sapiens*.

If Bradbury’s vision of post-literate humanity adheres to this narrative of decline in which humanist individualism becomes inhuman conformity to type, the text’s central animal figure of the Mechanical Hound reverses this movement by becoming so thoroughly individualised (albeit artificially) as to render impossible any attempts to account for its behaviour by recourse to the ethological archive of species-specific behavioural repertoires. Before attending more closely to this key figure, however, I’d like to make an important clarification to the political ontology of animal life which is (implicitly or explicitly) invoked in these discussions of individuation and the species. Recall Beatty’s cynical advocacy that the ideal society would give up the American attachment to individualism and set out instead on a project of active standardisation of subjectivities: “‘Not everyone born free and equal, as the Constitution says, but everyone *made* equal” by the techno-cultural apparatuses of post-literate society (p. 77, emphasis in original). This fabricated standard, which in the political ontology of humanism represents a kind of artificial distortion of an originary individualism, is presumed to be redundant for nonhuman animals who after all are standardised by default, falling into natural kinds (or species) which exhaustively determine their range of behaviours.

If the idea of a standardised human strikes political humanism as a dystopian nightmare, no such anxiety is felt about the idea of a standardised rat, for example, since rats are apprehended as always-already standardised. The generic Rat is not politically troubling, nor is it a state to be achieved through the work of fabrication; it is simply the default onto-ethological state of all rats, who are held to be constitutionally deprived of the possibility for individuation which is the exclusive inheritance of human beings. Of course, this reading of nonhuman life misses the diversity *within* species, flattening individual variation in the effort to construct a generic identity between all individuals of a given species. Strategies to arrest or divert recognition of nonhuman infra-specific variation abound in the epistemologies of humanism. At the level of zoological taxonomy, the concept of the holotype fixes an individual specimen as the archetype of a species; a kind of Platonism of the nonhuman which, while not in itself arresting the

apprehension of morphological variation, supplies a zoometric benchmark against which variations can be assessed in terms of deviation and similitude.¹³

Such strategies for domesticating infra-specific differences take place not only at the epistemic level but also at the level of technological and institutional practices, and most prominently so in the rigorously controlled breeding programs that supply animals to agribusiness and scientific research facilities. Not only conceptual animality but also individual animal bodies are made to conform to the species 'type' by these biopolitical practices of population control. Although selective breeding for research has a long prehistory, the establishment of controlled populations in the late nineteenth and early twentieth century came under more intensive disciplinary regulation in the postwar period, as Lynda Birke has noted:

Before the Second World War, lab animals might come from a variety of sources, including fanciers; conditions, too, were highly variable, with some animals literally kept in the lab. After 1945, conditions became more standardized, and specific animal houses emerged—changes that helped to perpetuate standardization of animals.¹⁴

Karen Joy Fowler's recent short story 'Us' follows this trajectory up to its apotheosis in the millennial project to produce an International Genetic Standard rat. Narrated by an IGS rat, "Us" sketches a genealogy of rat-human co-domesticity, from the earliest dispersal of rat populations on board the ships of emigrating humans to the confinement of rats in the research laboratories of the twenty-first century. These rats, our contemporaries, have undergone a process of selective breeding which sought to displace lively agency in favour of docile instrumentality. 'Our path is one of standardized breeding, standardized handling. Genetic variation has been minimized in the attempt to eradicate the noise of individual personality. The ideal laboratory rat is an apparatus in today's modern lab, a test tube.'¹⁵ If humanism deploys a notion of internally homogenous animal species as a deficient counterpoint to human multiplicity and potentiality, this deployment is only made possible by the forgetting of a whole history of technological disindividuation of animal life. As an promotional document for Charles River Laboratories' animals claims,

The International Genetic Standard system ensures our customers that, whether they buy CRL animals in Europe, the United Kingdom, Japan, the U.S., or any other Charles

¹³ The International Code of Zoological Nomenclature defines the holotype as 'the single specimen [...] designated or otherwise fixed as the name-bearing type of a nominal species or subspecies when the nominal taxon is established', <<http://www.nhm.ac.uk/hosted-sites/iczn/code/>> [accessed 15th August, 2014].

¹⁴ Lynda Birke, 'Who—or What—are the Rats (and Mice) in the Laboratory', *Society and Animals*, 11.3, (2003), 207-224 (p. 209).

¹⁵ Karen Joy Fowler, 'Us', *American Quarterly*, 65.3 (2013), 481-485 (p. 484).

River location, the animal will be bred with uniformity. This new generation of animals provides similarity and reliability from plant to plant and country to country.¹⁶

Through the work of its technological and scientific apparatuses, then, humanism militates against the recognition of nonhuman individuality by *producing* the standardisation which it elsewhere claims simply to have discovered.

Returning to the postwar cultural context, we can more clearly see how a discourse of species is used to make sense of the supposed attenuation of autonomous subjectivity that befalls human populations when both economic production and culture itself are exposed to the forces of technological rationalisation. The International Genetic Standard rat stands at the culmination of a trajectory of ever-increasing disindividuation which technological reason enforces on individual subjects, and the quasi-subjects which result from this process are characterised first of all by their *substitutability*: any individual can be replaced by any other and, assuming that both are operating within the same environmental context, each will perform predictably and identically. In this analysis, late-modern capitalist culture incites an expansion of the standardising (and inhuman) imperatives of the factory and the laboratory into subjectivity itself.

My brief foray into the political-ontological matrix which produces these claims of individuality and uniformity was intended to capture something of the bad faith of a humanism which reproduces these claims differently across species lines. The generic animality which allows humanism to think its own demise (apparent in *Fahrenheit* as Faber's 'unmoving cattle of the majority') is held to be the originary state of nonhuman animal species. In contrast, Captain Beatty counterposes literate, individuated humanity to the standardised quasi-subjects which comprise post-literate humanity; and this distinction, significantly, rests on the introduction of artifice into human development: "Not everyone born free and equal, as the Constitution says, but everyone *made* equal". The individualism of the United States' Constitution links freedom to natality, and this originary individuality, for Ray Bradbury, can either be further extended by literary culture or curtailed by the diversions of mass culture.¹⁷ While I would stop short of endorsing a thesis of originary individualism for either human or nonhuman, I hope to have shown how this schema opposing artificially standardised humanity to naturally uniform

¹⁶ Charles Rivers Laboratories, 'Charles Rivers Laboratories' International Genetic Standard (IGS)' (1999). Available online at <http://www.crj.co.jp/cms/cmsrs/pdf/company/rm_rm_n_ref_vol11_99.pdf> [accessed 15th August, 2014].

¹⁷ The linking of birth to freedom is not without complications here, since in many respects infancy shares a conceptual proximity to animality in humanist thought. As pre- or non-linguistic, both animals and neonates resist incorporation into an anthroponormative political community which privileges speaking subjects. Drawing on Hannah Arendt, I will return to this entanglement of concerns in my concluding chapter on international human rights.

animal species erases the technological work which can generate tendencies towards standardisation for both.

Reading Adorno and Horkheimer, Riesman, and later Bernard Stiegler, one senses that this narrative in which animals are always-already uniform, whereas humans are *becoming* inhumanly regularised under the hegemony of technological reason, must always follow a unilinear trajectory: humans may become inhuman, but there is no sense of a compensatory possibility of increased nonhuman agency. Stiegler, for instance, asserts that ‘Between the human and the animals there is a *change of regime* of individuation which is a *change of relation* to its preindividual funds. Humans individuate *psychically* whereas animals individuate *specifically*’.¹⁸ Developing this ontology with reference to Gilbert Simondon, Stiegler defends the exceptionality of human agency: ‘Psychic and collective individuation is what occurs when “life problematizes itself”. This problematization results in a *decoupling between perception and action*, that is, it means behaving *differently, otherwise* than merely a *reaction*’ (p. 168, emphasis in original). To speak of nonhuman agency here is to make a kind of category error, to misread animal reactivity as a form of wilful subjectivity. Human psycho-social individuation may be interrupted—and this is the fate of late-modern subjects who are nothing other than ‘non-inhuman beings faced with the fact of being-inhuman’ (p. 162), in Stiegler’s tellingly negative formulation—but animals are forever retained within the enclosure of ‘reaction’, ontologically incapable of offering an authentic response.¹⁹

Ray Bradbury, however, is less certain of the unilinearity of this trajectory. In *Fahrenheit 451*, he imagines that the same technological processes which render humans docile and compliant may, when directed instead at the nonhuman world, result in the monstrous graduation of animal life into agency and subjectivity. These tendencies are embodied in the novel by the Mechanical Hound, a figure of ontological indistinction which focuses Bradbury’s fears of a post-organic Nature. Neither strictly machine nor beast, the Hound is at once a mechanomorphic animal and a theriomorphic technology. It functions, on the one hand, as another iteration of a thoroughly instrumentalised nonhuman animal, akin to those which we have already encountered on the zoos and, especially, farms of mid-twentieth century literature. It is a tool of the fire service, engineered to enforce the regime of mandatory post-literacy by hunting and killing literate dissidents. In this guise, the Hound recalls its namesake the Cartesian beast-machine in being denied agency by a humanism which reserves for itself the privileges of autonomy and self-mastery; it tracks its targets ‘like a moth in the raw light’ (p. 36). Wondering

¹⁸ Stiegler, ‘Doing and Saying Stupid Things’, p. 166, emphasis in the original.

¹⁹ On the aporetic quality of the opposition between reaction and response, see especially Jacques Derrida, “‘But as for me, who am I (following)?’”, in *The Animal That Therefore I Am*, ed. by Marie-Louis Mallet, trans. by David Wills (New York: Fordham University Press, 2008), pp. 52-118.

about the possibility of the Hound malfunctioning or worse, wilfully disobeying (and perhaps endangering) its human masters, Montag fearfully suggests to Captain Beatty that the Hound might not like him. The Captain replies:

“Come off it. It doesn’t like or dislike. It just ‘functions’. It’s like a lesson in ballistics. *It has a trajectory we decide for it. It follows through. It targets itself, homes itself, and cuts off. It’s only copper wire, storage batteries, and electricity.*” (p. 38, emphasis added)

The Hound here materialises the Cold War imperatives of technological militarism. Like a ‘ballistic’ missile, it follows the ‘trajectory’ set for it by its human masters. The boundaries between repressive technologies and animal life become obscure, the one assimilated to the other under a regime of anthropogenic instrumentalisation which is capable of apprehending nonhuman materiality only as *means* to some (usually violent) end.

Animals and technologies thoroughly domesticated, transformed into predictable, compliant instruments: this, for Bradbury, is the fantasy by which late-modern technocracy orients itself towards the nonhuman world. As we have seen, however, this reduction to docile instrumentality equally designates the fate of human life in postwar culture, according to Bradbury and his co-thinkers. Significantly complicating Beatty’s account of the domesticated Hound, Bradbury imagines the nonhuman instrument metamorphosing into something like a quasi-agentive subject (and, as we shall see at more length in my reading of Philip K. Dick, this graduation into agency often sees the refiguration of the nonhuman in terms of threat or risk; a challenge to the Cold War security culture which is heavily invested in a political ontology that opposes human agency to nonhuman instrumentality).

This quasi-agency manifests first of all in the Hound’s refusal to abide by orthodox taxonomies of nonhuman life; to resist the ascription of identity that would make it fully knowable and therefore pliable. It is an uncanny or queer beast which ‘slept but did not sleep, lived but did not live’ (p. 35). A figure of ontological indistinction, the Hound is post-organic yet somehow still vital: ‘something that was not machine, not animal, not dead, not alive, glowing with a pale green luminosity’ (p. 174). Its constitution revisits the postwar *topos* in which the animal body is the site at which the risks generated by threatening new technologies are made manifest, from the ‘glowing luminosity’ of nuclear radiation to the ‘capillary hairs in [its] nylon-brushed nostrils’ (p. 35). As a post-organic substitute for wool, nylon attests to Bradbury’s anxieties about the displacement of ‘natural’ animality by artifice, as well as suggesting the novelties of

the new consumer culture (women's stockings being the most iconic use of nylon in the 1950s).²⁰

While notionally a fully-automatic, thoroughly instrumentalised stimulus-response machine not dissimilar from the stupefied humans seduced by the new mass culture, in other respects the Mechanical Hound resembles the properly autonomous subject of modernity. We learn that the uncanny Hound 'did not touch the world' (p. 176), and in this it echoes the self-regarding mythology of humanism. The human, in this account, transcends worldliness; it discovers its own subjectivity in an act of intellection (the Cartesian *cogito*), and exists first of all as pure subjectivity, being embedded in worldly relations only accidentally. Animals, in contrast, are apprehended as aboriginally worldly, immersed in (and fully determined by) their environmental contexts: 'There is, for the wolf, a continuity between itself and the world', claims George Bataille.²¹ More negatively, in many post-Romantic and ecocritical accounts, this supposed human worldlessness is figured as a privative divorce of humanity from its natural environment; a kind of ontological homelessness.²² As Ralph R. Acampora sketches this position, we humans are said to 'initially find ourselves as discrete objects whose original problem is to figure out how to connect to the world.' Humanism fantasises that we exist 'in some abstract, retro-Cartesian position of species solipsism where our minds seem to just float in a rarified space of pure spectatorship apart from all ecological enmeshment and social connection with other organisms.'²³ As the post-organic successor to Bataille's wolf, Bradbury's Hound inhabits this imagined space of ontological homelessness like a monstrous parody of transcendental subjectivity. Constitutionally dissociated from what Acampora describes as the 'climaticity' of its environmental context, the Hound is 'like a wind that didn't stir grass' (p. 176).²⁴

²⁰ Pap A. Ndiaye claims that 'In the 1950s, nylon symbolized a new way of life, the future, the spirit of America and its mythical modernity.' *Nylon and Bombs: DuPont and the March of Modern America*, trans. by Elborg Forster (Baltimore: Johns Hopkins University Press, 2007), p. 2. As Ndiaye demonstrates, this euphoric assessment obscures the extent to which nylon manufacturing was economically and technologically linked to the production of plutonium for nuclear weapons. DuPont was a primary manufacturer of both, and the mass market for consumer goods (figured metonymically by nylon stockings) had its origin and condition of possibility in the temporary prosperity afforded by the postwar arms economy.

²¹ George Bataille, *Theory of Religion*, trans. by Robert Hurley (New York: Zone, 1989), p. 24.

²² Within ecocriticism, this post-Cartesian anxiety has incited a broadly Heideggerian turn towards dwelling, rootedness and attentiveness to the specificities of place; see especially Jonathan Bate's *The Song of the Earth* (London: Picador, 2001). Ralph R. Acampora and other phenomenologically-inclined environmental philosophers suggest instead that the ontological divorce inaugurated by modernity was only ever an enabling fiction, a narcissistic conceit reliant upon the forgetting of an originary being-in-the-world, and a world, moreover, which comprises multi-species communities.

²³ Ralph R. Acampora, *Corporal Compassion: Animal Ethics and Philosophy of Body* (Pittsburgh: Pittsburgh University Press, 2006), p. 4.

²⁴ Acampora, *Corporal Compassion*, pp. 33-34.

In contrast, the environmental milieu of the novel's human masses now consists of "clubs and parties, [...] dare-devils, jet cars, motorcycle helicopters, [...] sex and heroin, more of everything to do with automatic reflex" (p. 80), as Beatty puts it. Montag's wife Mildred is permanently plugged in to 24-hour media, and she struggles to differentiate between her intimate social relationships and her soap-opera 'family', a 'gibbering pack of tree-apes that said nothing, nothing, nothing and said it loud, loud, loud' (p. 59). These technologies *captive* their audience, to appropriate Martin Heidegger's term for the supposedly impoverished ability of animals to transcend their environmental contexts.²⁵ If formerly 'throughout the course of its life the animal [was] confined to its environmental world, immured as it were within a fixed sphere', in *Fahrenheit* post-organic animality has achieved transcendence just as human subjectivity has become fully immured in (and continuous with) its technological and media ecologies.²⁶

Bradbury's account of an artificial future for organic animality further troubles the prestige of humanism by refusing one of its key organising principles. As we have seen, humanism deploys taxonomic and technological strategies for fixing and standardising the multiplicity of nonhuman animal life. In this account, the concept 'species' names discrete and imporous *types*, and the animals within each type are held to be substantially identical in terms of behaviour and character. Over and against these supposedly disindividuated nonhumans, humanism reserves for itself the privileges of individuated subjectivity. In *Fahrenheit 451*, the Mechanical Hound again encroaches on human exceptionalism by exceeding the fixity of species taxonomies. Its body is an uncanny amalgam of various nonhuman morphologies, a composite of different traits and capacities from a heterogeneous collection of animals. The Hound is a 'metal dog' (p. 155), but its canine form is complicated by its 'eight legs' with 'rubber-padded paws', and its 'multi-faceted eyes' (p. 37). Derrida notes that 'the human' of humanism opposes itself to a notion of animality which flattens differences between nonhuman animals; which fabricates a generic Animal as an impoverished counter-point to human subjectivity.²⁷ In its weird conjugation of canine and insect morphologies, the Hound instantiates not so much generic Animality as it does the coming obsolescence of the humanist species concept. Bradbury worries that the emergence of post-organic nature will lead to the abolition of static and predictable species differences. He is anxious that technology, which is claimed to standardise and disindividuate human subjects, will have the opposite effect on nonhuman animals: it will multiply differences,

²⁵ Martin Heidegger, *Fundamental Concepts of Metaphysics: World, Finitude, Solitude*, trans. by William McNeill and Nicolas Walker (Bloomington: Indiana University Press, 1995). See Brett Buchanan's discussion in *Onto-Ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Ponty and Deleuze* (Albany: State University of New York Press, 2008), pp. 65-114.

²⁶ Martin Heidegger, cited in Buchanan, *Onto-Ethologies*, p. 73]

²⁷ Derrida, *The Animal That Therefore I Am*, p. 34.

producing new forms of animal life which escape the taxonomies that made them intelligible, and therefore tractable.

Bradbury's response to this unsettling of humanism's prestige recalls the qualified anti-modernism of George Orwell and R.S. Thomas discussed in the previous chapter. He argues for a tactical retreat from the technological reason of late-modern mass culture, working through this topographically in the novel. As a new convert to the individuating potentials of literacy, Montag finds himself legally proscribed and is pursued by his former colleagues the Firemen. He flees the city – the privileged space of modernity – and finds refuge on the margins of an agrarian community. This spatial relocation materialises the rejection of modernity, and the deployment of the countryside repeats a now-familiar postwar *topos* of the salvific potential of organic authenticity: in fleeing the city, Montag 'was moving from an unreality that was frightening into a reality that was unreal because it was new' (p. 180). This new space allows for a partial reconciliation with human animality. Finally rejecting the inauthentic city, Montag rediscovers corporeality as organic dynamism: running from his former colleagues, he was 'the only man running alone in the night city, the only man proving his legs!' (p. 178) In contrast, the media-fixated masses watch his flight from their windows and screens 'like grey animals peering from electric caves' (p. 179). Mass culture, then, not only assaults autonomous reason; it also devitalises the natural (including the naturalness of human life, the physicality of running).

Montag's flight culminates in an encounter in which he mistakes a wild deer for the Mechanical Hound. The deer marks the threshold between the artifice of the city and the organicism of the rural, and Montag's encounter with it is thoroughly corporeal: 'He smelled the heavy musk-like perfume mingled with blood and the gummed exhalation of the animal's breath' (p. 185). Following this encounter, he becomes 'fully aware of his entire body, his face, his mouth, his eyes stuffed with blackness, his ears stuffed with sound, his legs prickled with burrs and nettles' (pp. 186-187). He discovers fire for the first time as a source of shelter and warmth, rather than as technological violence, and this discovery coincides with a revaluation of his own (formerly disavowed) animal bodiment:

[T]here was a foolish and yet delicious sense of knowing himself as an animal come from the forest, *drawn* by the fire. He was a thing of brush and liquid eye, of fur and muzzle and hoof, he was a thing of horn and blood that would smell like autumn if you bled it out on the ground. (p. 187)

Montag's reconciliation with the fleshy corporeality of his own existence is carefully qualified. It is a thoroughly personalised embodiment that is disclosed by his escape from the city: not the generalised animal being described by humanism but an intimate and individualising knowledge of one's own body as the necessary support or substrate of intellectual life.

Beginning from this bodily substrate, literacy induces a process of subjectivization, a superstructure of individuated consciousness which separates the human individual from the nonhuman type or mass. In the woods, Montag encounters a group of literate refugees from the city; intellectuals who could not be assimilated by the technological reason that dominates late modernity. One of them, Fred Clement, was the “former occupant of the Thomas Hardy chair at Cambridge in the years before it became an Atomic Engineering School” (p. 192). Another, Granger, welcomes Montag “back from the dead” of the devitalised homogeneity of urban culture. Granger is a social theorist who wrote a monograph entitled *The Fingers in the Glove: The Proper Relationship Between the Individual and Society* (p. 193), a title suggestive of David Riesman’s elegy for American individualism, *The Lonely Crowd*. The collective efforts of these scholars to preserve literary and critical culture ensures the continuation of properly human subjectivity. Like the mythical Phoenix, Granger claims, the animalised mass of human society periodically destroys itself in a conflagration brought on by an excess of technological *bêtise* (whether by fire or nuclear weapons). Unlike that “damn silly bird”, humanity is bestowed (at least in principle) with the power of memory, so that “some day we’ll stop making the goddamn funeral pyres and jumping into the middle of them. We pick up a few more people who remember each generation” (pp. 208-209). The work of memory links social history to personal individuation, and literature is the technological condition of this anthropopoietic procedure; the Phoenix, as animal, remains constitutionally excluded from the possibility of subjectivity.

In a typically postwar response to instrumental reason, Bradbury suggests that the world beyond the city (and thus, beyond the *bêtises* of mass culture and deleterious technologies) functions as a clearing in which the disindividuated humanity of late modernity can rediscover the humanist inheritance of literacy, autonomous reason, personal identity—in short, everything that is said to separate the human from the animal. But what happens to animals in this conjuncture? The city renders animal life as uncanny, monstrous and threatening. The Mechanical Hound resists the confinement of animal being to the discrete and knowable corrals of ‘species’, troubling taxonomies and disputing the singularity of human world-transcendence. In the countryside, however, nonhuman animals are figured in more familiar terms. Leaving the city, Montag recalls a much earlier experience in the countryside:

He remembered a farm he had visited when he was very young, one of the rare times he had discovered that somewhere behind *the* seven veils of unreality, beyond the walls of parlours and beyond the tin moat of the city, cows chewed grass and pigs sat in warm ponds at noon and dogs barked after white sheep on a hill. (p. 182)

Here animals conform to their conventional roles within the human-centred mixed-species community of agrarian domesticity. No longer wilfully agentive, threatening or ontologically ambiguous, the farm animals exhibit predictable and comfortingly familiar behaviours. The

rural clearing which restores human individualism reasserts in the same gesture that the essence of animal life is conformation to type. Bradbury's response to late modernity's tendency to unsettle the discourse of species is to insist on the rejection (or at least, the domestication)²⁸ of technological reason, and to reassert the anthropopoietic potential of literacy. The repudiation of mass culture and at least some technologies will, he hopes, incite a return to an authentic and supposedly originary mode of species-being which guarantees the individuality of the bourgeois literate subject while simultaneously underwriting an essentialism of the nonhuman.

Fahrenheit 451 offers a rehabilitation of humanism (and a restoration of humanity's sovereign power over the nonhuman world) through a strategic rejection of certain aspects of late modernity. Montag's escape from the Mechanical Hound reflects a desired escape from technologies as well as from a denatured nature, as both of these have become intractable and threatening by the mid-twentieth century. Bradbury's rejectionist attitude echoes that of other postwar critics of technological reason, most notably Martin Heidegger. Bruno Latour critically characterises this position: 'To become moral and human once again, it seems we must always tear ourselves away from instrumentality, reaffirm the sovereignty of ends, rediscover Being; in short,' says Latour, with an appropriately canine image, 'we must bind back the hound of technology to its cage.'²⁹ The argument that Latour is reproducing here pays special attention to the instrumentality of technology, and more precisely to the power of certain nonhuman actors (both technological and animal, as I hope to show) to challenge or resist the attempt by human agency to reduce them to 'mere' instruments. I now want to look more closely at this anxiety through a reading of Philip K. Dick's *Do Androids Dream of Electric Sheep?*—a novel which represents the coming-into-agency of the nonhuman in ways that will shed light on mid-century humanism's imagined relation to its nonhuman others, both animal and technological. I will conclude by examining how both pairs of concepts elaborated here – individual/type and agent/instrument – function as conceptual apparatuses which, in the postwar period at least, allow for the designation of nonhuman actors (as well as certain humans) as subject to arbitrary biopolitical violence.

²⁸ Bradbury's commitment to the domestication (rather than the abolition) of technology is evidenced in a letter of 1974, where he offers qualified praise of robots, so long as they are subservient to human will: '[Books, like robots,] are extensions of people, not people themselves. Any machine, any robot, is the sum total of the ways we use it. [...] A motion picture projector is a non-humanoid robot which repeats truths which we inject into it. Is it inhuman? Yes. Does it project human truths to humanize us more often than not? Yes.' 'Ray Bradbury: "I Am Not Afraid of Robots. I Am Afraid of People" (1974)', <<http://www.openculture.com/2014/08/ray-bradbury-i-am-afraid-of-people.html>> [accessed 16th August, 2014].

²⁹ Bruno Latour, 'Morality and Technology: The End of the Means', trans. by Couze Venn, *Theory, Culture and Society*, 19.5/6 (2002), 247-260 (p. 247).

Machine-Agency and the Limits of Instrumental Reason

The figure of the machine has most often been deployed by thinkers who are eager to master, domesticate or neuter the multiplicity of animal life. The Cartesian beast-machine is the best known (and most persistent) of these figures, and in this formulation the animal-machine analogy renders animals negatively as a-subjective, automatic and devoid of any possibility of agency, subject as they are to the determining imperatives of mechanistic instinct. Through this conceptual frame, nonhuman life is disclosed as an impoverished counterpoint to the imperious autonomy of the human subject.

In this section I want to return to the second of the two anxieties outline in this chapter's introduction: the fear that nonhuman actors (both machinic and animal) are only ever provisionally and imperfectly instrumentalised by human technological reason. I want to consider an alternative to the privative conception of nonhuman animal being outlined above by reevaluating the notion of machine passivity on which it is based. While our Cartesian inheritance has accustomed us to think of animal life as displaying a predictable, stereotyped repertoire of behaviours after the fashion of a machine which lacks intentional subjectivity, the emergence of intelligent inorganic 'life' in the speculative fictions (and later, the scientific research programs) of the twentieth century offers a suggestive point of departure for reconsidering the relationships between agency and mechanism, affect and cognition, and the living and the non-living. By the mid-twentieth century, research programs in artificial intelligence were being established which, according to their most enthusiastic advocates, would realise the fantasies of speculative fiction by creating sapient, quasi-autonomous inorganic 'life' within a few decades.³⁰ At around the same time, ethological research into nonhuman animal behaviours were beginning to discover the presence of practices which had been *learned* from conspecifics, rather than belonging to a genetically pre-determined behavioural repertoire.³¹ Famously, in the 1960s, Jane Goodall's research with chimpanzees at Gombe in Tanzania revealed that at least some nonhuman animals constructed and made use of tools, thus upsetting the anthropological definition of humans as the technical animal.

At this particular historical moment, then, the recognition that the capacities of both organic and inorganic forms of nonhuman 'life' may have been sharply underestimated threatened to undo the conceptual bases of the thesis of mechanistic determination of behaviour. Parallel

³⁰ These early AI programs would fail due to their adherence to an (often implicit, un-theorized) Cartesian representationalist ontology; see especially Hubert Dreyfus's contemporary phenomenological critique of AI, 'Alchemy and Artificial Intelligence', RAND Corporation (1965), pp. 1-90. Available online at <<http://www.rand.org/pubs/papers/P3244.html>> [accessed 15th January, 2015].

³¹ Konrad Lorenz, *King Solomon's Ring: New Light on Animal Ways*, trans. by Marjorie Kerr Wilson (London: Methuen, 1961), pp. 140-143.

developments in animal ethology and artificial intelligence revealed in not only animal but also machine life a potential for emergent and unpredictable behaviours. Euthanising at last the Cartesian beast-machine, the arrival of these research programs presented a moment of rupture in which nonhuman *agency* displaces stereotyped mechanical passivity. Far from the negative and privative formulations of nonhuman life which we have inherited from Descartes, ethology and artificial intelligence began, in the mid-twentieth century, to open up a far more fruitful space from which to think through affinities between (what we have called) the animal and the machine.

In this space where both animals and machines resist the reduction to mechanistic determinism, the challenge that they pose to what Elaine L. Graham has called the 'ontological hygiene' of humanism is significantly sharpened.³² The capacities of agency, autonomy and cultural development, which the humanist subject has jealously guarded as the marks of his exceptional status, are discovered to flourish (albeit in modified forms) across species lines and even, embryonically, in inorganic machine 'life'. It is not only, of course, the simple matter of taxonomic precision that is at stake in this challenge to the ontology of humanism; rather, this affront to the propriety of humanist subjectivity has far-reaching ethical and political implications. In his recent work on *The Machine Question*, David Gunkel has pointed out that the existence of intelligent machines 'puts in question many deep-seated assumptions about who or what constitutes a moral subject'.³³ In this sense, and on the basis of agency rather than Cartesian-mechanistic passivity, artificially intelligent machines are structurally analogous to nonhuman animals who display so-called higher cognitive capacities. The uncertainty over 'who or what' (and this phrase recurs with extraordinary frequency in Gunkel's work on machine ethics) can count as a moral subject closely corresponds to debates in animal ethics. The presumed ontological break between the 'who' and the 'what' echoes the foundational distinction between the person and the object; between 'he' or 'she' on the one hand, and 'it' on the other.

The stakes of this debate lie in the partitioning of forms of life (however defined) into those whose killing is apprehended as a *homicide*, and those who are subject to what Jacques Derrida has described as a 'non-criminal putting to death'.³⁴ This question of killing is rarely addressed as such in the debates surrounding animal and machine ethics. Ethical discourse largely prefers

³² Elaine L. Graham, *Representations of the Post/human: Monsters, Aliens and Others in Popular Culture* (New Brunswick, NJ: Rutgers University Press, 2002), p. 33.

³³ David Gunkel, *The Machine Question: Critical Perspectives on AI, Robots, and Ethics* (Cambridge, MA: MIT Press, 2012), p. 1.

³⁴ Jacques Derrida, "Eating Well," or the Calculation of the Subject', in *Points... Interviews 1974-1994*, ed. by Elisabeth Weber, trans. by Peggy Kamuf and others (Stanford, CA: Stanford University Press, 1995) pp. 255-287 (p. 278).

the prophylaxis of a methodology which determines the status of animals and machines negatively as non-persons to a positive thought which would explicitly thematise the violence that such a designation licenses. I'd like to turn now to a novel which directly addresses the ethics of killing in connection with an attentiveness to the possibility of resistant agency in nonhuman life. My aim here is to elaborate further the implications of nonhuman agency for the ontology of humanism by reading the nonhuman agent against the conceptual enclosure within which it was most recently confined: that of the instrument, or the means to an (always human) end. I then want to situate this tension between agency and instrumentality in the context of debates around the ethics of killing.

Between Agency and Instrumentality: Philip K. Dick's Android Fugitives

Written in the later part of the 1960s, when postwar A.I. research was still entertaining utopian aspirations, Philip K. Dick's novel *Do Androids Dream of Electric Sheep?* imagines a future in which the greater part of humanity has abandoned earth in the post-apocalyptic aftermath of World War Terminus. The establishment of off-world colonies has been made possible by the invention of intelligent androids who are bound to serve the emigrant human colonists. On the irreparably scarred earth, where the novel's action takes place, communities of humans persist though greatly diminished in number. Those who remain risk contamination by radioactive dust: a legacy of a nuclear war the details of which remain unspecified. The dust has already driven the majority of nonhuman species to extinction, and after the war a seemingly endless stream of 'animal obits' filled the morning newspapers.³⁵ In an allusion to Rachel Carson's seminal environmentalist polemic *Silent Spring*, the narrator notes that 'First, strangely, the owls had died. [...] After the owls, of course, the other birds followed' (pp. 14-15). A consequence of this scarcity of animal life is that humans have been entrusted with stewardship over the animals that remain.

A new religion, Mercerism, is founded on the empathic link forged between humans, and one of Mercerism's key theological mandates is the extension of the boundaries of this affective community to incorporate nonhuman animals. Social stigma falls upon those who do not keep and care for an animal, to the point where a market in artificial animals has emerged to cater for those too poor to afford the real thing. Animals, and especially megafauna, figure as prestige commodities; a kind of biocapital who are valued, as Sherryl Vint has noted, both as indexes of the social success of their owner and, less cynically, as sources of empathic identification who

³⁵ Philip K. Dick, *Do Androids Dream of Electric Sheep?* (London: Gollancz, 2001 [1968]), p. 37. Further citations will be given in the text.

point beyond the anthropocentric strictures of ethical humanism.³⁶ At the same time as this ambivalent reevaluation of animal life is taking place, the possibility of ethics is being erased by the ascendancy of television. Reminiscent of Bradbury's fears of the deleterious effects of the new media, Dick imagines a conflict between mass culture and affective engagement through the person of Buster Friendly, a television host who is suspiciously industrious. (It is later revealed that Friendly's twenty-four hour broadcasts are possible because he himself is an android passing as human.) As one character puts it, "I think Buster Friendly and Mercerism are fighting for control of our psychic souls." "If so," replies another, then "Buster is winning" (p. 66).

After a period of neglect in which critics focused almost exclusively on Dick's deployment of the figure of artificial life, the secondary literature on the novel has, in recent years, produced a number of sophisticated readings of the text's incipient (and not unproblematic) animal ethics.³⁷ My approach here is somewhat different. I aim to tease out a number of structural analogies between machine ethics and animal ethics. Unlike Bradbury, who worried that late modern humanity was losing its modern inheritance and becoming inhumanly disindividuated by its absorption in technological culture, Dick suspects that the exemplary subject of 'high' modernity was always already machinic. In this sense, his androids are not impoverished subjects limited by their inability to respond authentically; rather they supersede organic humanity, representing an intensification of our most characteristically 'modern' attributes: 'more human than human', as Ridley Scott's film adaptation puts it.³⁸ Despite this, they remained confined to the category of instrument, and thus are subject to the kinds of arbitrary violence which is typically inflicted on wayward nonhuman animals.

Returning to the post-apocalyptic setting of Dick's novel, the nuclear context engages the humanist fantasy of mastery over the nonhuman world in two opposing senses. Firstly, for those who remain on the earth, the environmental situation substantially limits human activity and threatens, through the prospect of radioactive degeneration, to undo the hallmarks of humanist subjectivity while thrusting human life back into the struggle for existence from which it believed it had escaped: 'those who could not survive the dust [of radioactive fallout] had passed into oblivion long ago, and the dust, weaker now and confronting the strong survivors, only deranged minds and genetic properties' (p. 7). Secondly, and conversely, those humans

³⁶ Sherryl Vint, 'Speciesism and Species Being in *Do Androids Dream of Electric Sheep?*', *Mosaic*, 40.1 (2007), 111-126 (p. 119).

³⁷ In addition to Vint's 'Speciesism and Species Being', my reading here is informed by two eco-centric articles: Josh Toth's 'Do Androids Eat Electric Sheep?: Egotism, Empathy, and the Ethics of Eating in the Work of Philip K. Dick', *LIT: Literature Interpretation Theory*, 24 (2013), 65-68, and Simon A. Cole's 'Do Androids Pulverize Tiger Bones to Use as Aphrodisiacs?', *Social Text*, 42 (1995), 173-193.

³⁸ *Blade Runner*, dir. by Ridley Scott (Warner Bros., 1982).

who are able to escape from the polluted earth by means of interplanetary spacecraft seem to fulfil the fantasy of salvation through technology in a way which recalls the optimistic projections of 'green' technophiles; no matter how badly our technologies impact upon the earth, the argument goes, more powerful and better-designed technologies will be able, somehow, to rectify the situation.

This last claim depends upon a notion of technology as pliable and passive instrumentality, and this, as we have seen, is precisely what is put into question by contemporary speculations surrounding research in artificial intelligence. More generally in mid-century culture, humanism's belief that modernity had installed the sovereign subject as user and master of an instrumental object-world had begun to appear ill-founded. The ontology of modernity differentiated itself from an imagined 'pre-modern' approach through just this centralisation of (always human) subjectivity; as Adorno and Horkheimer claim, in modernity 'the multitudinous affinities between existents are suppressed by the single relation between the subject who bestows knowledge and the meaningless object' (*Dialectic*, p. 10). But the subject's pretence of sovereignty over its object-world had come to look untenable in a world where technologies (of nuclear weapons or atomic power, for instance) were now manifestly capable of transforming the world on a planetary level in ways that were conspicuously beyond the control of human agency. As Martin Heidegger concluded in a late interview, attempts to legislate or reform the use of technologies were bound to fail in so far as 'behind them all [...] stands the conception that technicity in its essence is something that man holds within his own hands. In my opinion, this is not possible. Technicity in its essence is something that man does not master by his own power.'³⁹

In *Do Androids Dream?*, anxieties surrounding our imperfect mastery of our technologies are focused through the figure of the android servant-turned-fugitive who escapes from servitude in the colonies and flees to earth. From the humanist standpoint, the ideal android would be containable within what Heidegger has characterised as the 'instrumental and anthropological definition of technology'; that is, it would be a docile tool created by humans to serve only human ends.⁴⁰ In mid-century SF, this view finds canonical expression in Isaac Asimov's Three Laws of Robotics, the second of which commands that 'A robot must obey the orders given to it by human beings, except where such orders would conflict with the First Law', the First Law

³⁹ Martin Heidegger, 'Only a God Can Save Us', reprinted in *Heidegger: The Man and the Thinker*, ed. by Thomas Sheeran (New Brunswick: Transaction, 2010), pp. 45-67 (p. 55-56).

⁴⁰ Martin Heidegger, 'The Question Concerning Technology', in *Basic Writings*, ed. by David Farrell Krell (London: Routledge, 2011), pp. 213-238 (p. 218).

being, of course, a prohibition on harming humans.⁴¹ Asimov's speculative formalisation of android instrumentality would directly influence scientific research programs, most notably inspiring the A.I. pioneer Marvin Minsky. An encounter with Asimov's Laws encouraged thoughts about 'how minds might work. Surely we'd someday build robots that think,' Minsky speculated, suggesting that future forms of artificial life would be characterised by a mechanistic passivity which is deliberately engineered, rather than inhering in the ontology of inorganic life.⁴²

This thoroughgoing instrumentalisation of nonhuman life appears in *Do Androids Dream?* not as the ethically neutral deployment of a mere *means* for human advancement (the promise of a 'trouble-free companion' (p. 16), as the omnipresent advertisements in the novel proclaim), but rather as a kind of violent constraint; and in his rejection of the hegemony of instrumentality, Dick returns us to the questions of animal ethics with which we began. Describing the origins of the androids, Dick's narrator relates that

In connection with [the colonization of space] a weapon of war, the Synthetic Freedom Fighter, had been modified; able to function on an alien world, the humanoid robot—strictly *speaking*, the organic android—had become the mobile donkey engine of the colonization program. (p. 15)

The novel here transposes the historical legacy of American expansionism into an imagined future which is similarly predicated on the total instrumentalisation of non-persons as a source of free labour; all emigrants are given a complementary android, and advertisements for emigration promise that life on the colonies 'duplicates the halcyon days of the pre-Civil War Southern states' (p. 16). The central image of the 'donkey engine' encapsulates a double reference to both early industrial machinery and to the instrumentalisation of non-human animals as sources of power especially (though by no means exclusively) in pre-industrial society. There is, perhaps, a certain topographical politics being played out here. The earth, with its near-mandatory imperatives towards the stewardship and care of nonhuman life, becomes a site of respectful and conscientious dwelling in (what remains of) nature. The extra-terrestrial colonies, in contrast, continue the old imperatives of modernity towards instrumentalisation, recapitulating in the figure of the android the earlier domination of human and nonhuman animal life in the pursuit of ever greater efficiency.

⁴¹ Isaac Asimov, 'Runaround', in *I, Robot* (London: Harper Voyager, 2013 [1950]), pp. 31-53 (p. 44). Originally published in 1942.

⁴² Marvin Minsky, quoted in John Markoff, 'Technology, A Celebration of Isaac Asimov', *New York Times*, April 12, 1992. Republished online at <<http://www.nytimes.com/1992/04/12/business/technology-a-celebration-of-isaac-asimov.html>> [accessed 18th August, 2014].

What these figures of objectified and dominated life have in common is their imbrication in asymmetrical relations of power, and their subjection to strategies of instrumentalisation which actively produce the mechanistic passivity which is held to inhere in their being. Just as writers of speculative fiction and postwar artificial intelligence researchers sought to build Cartesian predictability and docile instrumentality in to their robots, in the same way, nonhuman animals are produced as instruments by their situatedness in specific institutional and material contexts. The vivisection laboratory, the selective breeding of animals for maximum 'yield' regardless of health concerns, and the rigorous control of animal bodies in intensive agriculture are all technologies for producing passivity and curtailing manifestations of agency.

Central to the action of *Do Androids Dream of Electric Sheep?* is the nonhuman refusal of this reduction to the status of mere instrument. A common *topos* of the science-fiction horror novel, going back at least as far as Mary Shelley's *Frankenstein*, is the discovery in nonhuman or marginally human life something like a capacity for agency which frustrates (or often, terrifies) the humanist imagination. In Dick's novel this anxiety is instantiated in a group of androids who reject colonial servitude and flee to earth in a desire to make their own lives; to graduate, as it were, into fully humanist subjectivity. Despite the general prohibition on killing and the imperative towards care that characterises the novel's ethical universe, androids who return to earth are subject to summary killing by bounty hunters. The novel's protagonist, bounty hunter Rick Deckard, struggles with the dilemma of retiring androids whose agentive capacities trouble the ontology of humanism. In keeping with Derrida's analyses of 'non-criminal putting to death', the killing of androids is euphemistically named 'retirement' rather than execution. Despite their partial figuration as aberrant instruments, androids can still be objects of compassion. As Deckard's wife, Iran, accusingly puts it:

"You're a murderer hired by the cops."
 "I've never killed a human being in my life." His irritability had risen now; had become outright hostility.
 Iran said, "Just those poor andys." (p. 4)

Androids on earth are killed because they refuse their function as instruments of colonisation, and also because they appear to lack the empathic faculties necessary to participate in the affective labour of cross-species empathy which constitutes the community of moral subjects. Convinced of their own sovereignty and indifferent to the sufferings of nonhuman animals, they are, in short, paradigmatic modern humans. On graduating from instruments into agents, Dick's androids immediately enact instrumentalising strategies of their own. In contravention of established morality, nonhuman animals become the exemplary victims of the android's quasi-scientific mentality, as when they cruelly vivisect a spider out of curiosity (pp. 176-181). In terminating androids for their inability to experience appropriate affect, the bounty hunters

invoke an empathic (rather than deontological) variation of the contract ethics which is so frequently deployed to exclude nonhuman animals from ethical consideration.

The inability of the android to participate in the reciprocal exchange of affects that binds the community together is figured in animalising terms: 'Evidently the humanoid robot constituted a solitary predator', thinks Deckard (p. 28). Solitude here denotes not only the absence of, but also the impossibility of relation. The target of Dick's critique is the hegemony of liberal ontological individualism, which, with its attendant instrumentalising tendencies, is already android-like despite its incarnation in fleshy humans. In an essay published some years after *Do Androids Dream?*, Dick claims that "These creatures are among us, although morphologically they do not differ from us; we must not posit a difference of essence, but a difference of behaviour".⁴³ *Homo sapiens* can be (or become) android in Dick's account: 'We humans, the warm-faced and tender, with thoughtful eyes – we are perhaps the true machines'.⁴⁴

Dick's indictment of late capitalist modernity, with its instrumentalising tendencies, thus reveals the post-apocalyptic world of *Do Androids Dream?* to be a surprising kind of utopia; a world where the hegemony of instrumentality has been abolished, at least on earth, and where consequently androids appear as anachronistic remnants of the violence of modernity. Returning again to the image of androids as 'solitary predators', we can see a further affinity between machine and animal ethics in the positioning of artificial life as analogous to predatory animals. Insofar as these are subject to domestication, to neutralisation within technologies of pacification, both animal and machine predators are tolerated for their instrumental utility. When they become agents capable of resisting the imposition of passivity, and especially when they demonstrate the ability to instrumentalise others through their depredations, they become a biopolitical risk to be managed (or extirpated) for the benefit of the community of moral subjects: 'Rick [Deckard] liked to think of them [as solitary predators]; it made his job palatable' (p. 28).

The fate of the androids in *Do Androids Dream?* seems to point to a fatally aporetic 'winner loses' logic in ethical humanism's attitude towards nonhumans. As instruments subject to human use, the Cartesian passivity of nonhumans (which is produced, rather than given) serves to legitimate our domination of them. When they refuse the role of instrument and display a capacity for resistant agency which limits our ability to control them, this display of agency is not read as a serious challenge to the ontology of humanism; rather, it becomes an incitement to reassert our hegemony and police the boundary between person and non-person through force

⁴³ Philip K. Dick, 'Man, Android and Machine', in *Explorations of the Marvellous: The Science and the Fiction in Science Fiction*, ed. by Peter Nicholls (Glasgow: Fontana/Collins, 1978), pp. 199-224 (p. 201).

⁴⁴ Dick, 'Man, Android and Machine', p. 219.

if necessary. In the closing pages of the novel, Deckard's embarrassment at having killed the android fugitives, and his devotion to an electric toad – an exemplary non-person – seem to point to an alternative to this violent biopolitical logic: a practice of fidelity to the proto-ethical affects of care, sympathy and mourning without respect for pre-determined ontological divisions.

Both of the novels that I have read in this chapter engage with attempts to police the boundaries of subjectivity in the late modern moment where technological saturation is charged with dissolving the classical subject. Each novel draws upon the humanist tradition, taking up and deforming the properties through which the human subject had formerly been defined. *Fahrenheit 451* locates human-animal difference in the disappearing distinction between the individual person and the mass of the species, whereas *Do Androids Dream of Electric Sheep?* focuses on the Kantian ends-means relationship between agent and instrument. Both are sensitive to the function of violence in securing the singularity of the subject. Dick's bounty hunters kill fugitive androids in an effort to make the categories of agent and human coterminous, though Dick himself appears deeply suspicious of this violence which is required to uphold human exceptionalism. Bradbury's novel enthusiastically endorses nuclear annihilation as affording an opportunity for humanity proper – that is, the literate individuals outside of the city who are spared the effects of the bomb – to rebuild a world where (at least some) humans might be restored to individuality, and where animals would no longer be abject or machinic, but would return to their former dispositions of organic docility.

The apocalyptic denouement of *Fahrenheit 451* strikes a curiously fascist note in a famously anti-fascist novel. Bradbury wishes for a culling of the herd; for purifying violence against the post-literate, quasi-human masses of the modern city. 'The mass' names those who lack individuated personhood, and are thus subject to arbitrary biopolitical violence for the benefit of individual subjects: the 'non-criminal putting to death' that Derrida excavates in his work on animals. The concept of the mass is elaborated first of all in humanism's thought of the nonhuman animal, but it is by no means coterminous with the species boundary. *Fahrenheit 451* shows how animal figures are central to the biopolitical management of human as well as animal lives in pursuit of the ideals of humanist individualism. Since the possibility of atomic conflagration played such a central role in the postwar technological imagination, and since, as Bradbury shows, it stands in an intimate relationship to a thought of mass death which crosses species lines, in the following chapter I will pursue a more thorough investigation of nuclear culture.

'Fearful Engines'

Nuclear Reason and the Inhumanity of Risk in Post-Atomic Modernity

On October 25th, 1962, at the height of the Cuban Missile Crisis, an intruder was spotted climbing the fence at the Duluth Sector Direction Center, a high security air defence installation in Minnesota. A guard shot at the intruder before sounding the sabotage alarm, believing that he had witnessed the incursion of a Soviet agent intent on interfering with the United States' nuclear defences. The sabotage alarm was relayed to all nearby military installations, but at Volk Field base in Wisconsin the wrong alarm was broadcast. Miswired electronics meant that instead of a sabotage alert, the Volk Field security system sounded the alarm signalling for all nuclear-armed F-106 Interceptors to take off and prepare to defend American airspace from a nuclear attack by Soviet bombers. The security level had been increased due to the ongoing Cuban crisis, and this meant that all interception drills had been cancelled. Believing, therefore, that a Soviet nuclear attack really was imminent, the F-106 pilots prepared for takeoff. Meanwhile, and without informing the crews of interceptor teams, the United States' Strategic Air Command had increased patrols of nuclear bombers in the area. A misidentification of an American for a Soviet bomber would have resulted in the destruction of the bomber and the potential detonation of a nuclear payload in American airspace, which in turn would very likely have triggered 'retaliatory' strikes on the Soviet Union. Fortunately, communication with Duluth showed that there had been an error. A warning was relayed as the aircraft were starting down the runway, and the interceptors aborted their takeoff attempt. The intruder, whose incursion onto the secure Duluth site might have incited an (entirely accidental) international nuclear conflict, was not after all a Soviet agent—it was an American Black Bear.¹

This incident articulates several of the strands of postwar culture with which I have been concerned: the mutual imbrication of technological reason and state power; the fear (perfectly

¹ This story is recounted in S.K. Agarwal's *Nuclear Energy: Principles, Practices and Prospects* (New Delhi: APH Publishing, 2003), p. 290. Other sources include Chris Hubbuch, 'False alarm: How a bear nearly started a nuclear war', *LaCrosse Tribune*, 30th January 2009, available online at <<http://tinyurl.com/False-alarm-How-a-bear-nearly>> [accessed 25th January 2015], and Richard Rhodes, 'The General and World War III', *The New Yorker*, 19th June 1995, pp. 47–59. As far as I have been able to discover, the fate of the bear remains unknown.

justified, in this case) that technology might fail, or might respond in ways that upset our expectations, and that this failure might have disastrous implications; and, most of all, the suspicion that nonhuman animal life somehow sits outside of or resists the imperatives of instrumentalisation, regularisation, and control that govern the technological matrix which encompasses postwar society. A single, wilful bear inadvertently prompted into action the technological apparatuses of military security, and a sequence of miscommunications almost resulted in nuclear conflagration. If this thesis has so far been concerned largely with the function of nonhuman animals as first victims of instrumental reason—as life regularised and contained by the technological apparatuses of the postwar zoo and farm—I now want to examine their capacity to disrupt the technological networks which make possible the human’s fantasy of control over his ecological, political and technical milieu.² Behind the crisis of nuclear security at Duluth lies a crisis of humanist subjectivity: the dominant conception of the human which asserts human sovereignty over a nonhuman world disclosed as passive instrumentality – ‘the fantasy that “we” are really in charge of all those “its”’, as Jane Bennett puts it – appears less secure when the possibility of resistant agency on the part of nonhuman actors is taken seriously.³

Because of the astonishing, unprecedented destructive power of the new nuclear technologies, the stakes are significantly raised in this conflict between human and nonhuman agencies, and these new risks leave their mark on postwar politics and cultural production through a turn to the figure of nonhuman animal life as a way of making sense of this new technological conjuncture. Technology had promised to liberate humanity from necessity and labour, and to install the human as sovereign over its environment. As we have seen, however, an influential minority of postwar humanists saw in the ascendancy of what might be called a technological *culture* the abolition of the possibility of humanist subjectivity and the levelling down of humanity proper—a transition from individuated humans to a standardized, undifferentiated herd. The promise and the threat of the nuclear moment represented an intensification of this logic by which the human would either be secured or eradicated by technology, and as before, the spectre of nonhuman life haunted this narrative.

Assuming that human agency was equal to the task of forestalling war and domesticating its new tools, nuclear power might become a force for improving living standards. ‘It is not enough to take this weapon out of the hands of the soldiers,’ said President Eisenhower in his 1953

² I am deliberately gendering the universal human here, since this strategy of conflating the specifically male with the generically human is crucial to the work of humanism, as feminist scholarship has long pointed out. This is especially the case in the context of the early Cold War state, where political power is emphatically paternal.

³ Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010), p. x.

'Atoms for Peace' address. 'It must be put into the hands of those who will know how to strip its military casing and adapt it to the arts of peace.'⁴ One consequence of Eisenhower's strategy was the establishment of an International Atomic Energy Agency, reporting to the United Nations. The demilitarisation of the bomb marked the promise of a nuclear domesticity, and the supranational regulatory framework proposed by Eisenhower showed how technological developments could – at least in principle – create the conditions for new communities of international solidarity. (The relationship between the bomb and the reforging of humanist solidarities is a question to which I will shortly return.) In this account, and contrary to the anxieties of Bradbury, Adorno, Horkheimer, and other sceptics, technological development is cast as an anthropopoietic procedure: it extends human control over the environment, liberates humanity from scarcity, and in a sense *creates* the human as the universal subject of political internationalism through the foundation of supranational organisations which will foster the development of that nascent political subject.

The peculiar danger of the nuclear moment was that, whether by war or by a catastrophic failure of nuclear power stations, this fostering of human life by atomic power might be wildly, abjectly inverted. As Eisenhower continued in his 'Atoms for Peace' address, the failure to domesticate the 'fearful engines of atomic might' would mean 'the probability of civilization destroyed, the annihilation of the irreplaceable heritage of mankind handed down to us from generation to generation, and the condemnation of mankind to begin all over again the age-old struggle upward from savagery towards decency, and right, and justice'.⁵ In nuclear culture, then, technology wore a double aspect: it promised to underwrite our security and prosperity, attesting to our supposed separation from nature (recall Kubrick's ape-man in *2001: A Space Odyssey*, whose fashioning of a bone-tool was the threshold which announced 'The Dawn of Man'). At the same time, its potential to act against our intentions was experienced as the threat of a return to a state of nature, namely the post-apocalyptic disintegration of state power and human supremacism which haunted the postwar cultural imagination. This imagined space of Hobbesian anarchy would announce the return of scarcity and compulsion, and the surviving remnant of humanity would be subject to a process of anthropolysis, to use Philip Armstrong's term for the dissolution of humanity proper and the return to a bestial struggle for existence.⁶

Nuclear technology, then, is deeply intertwined with discourses of risk, and the capacity of technology to affirm rather than erase human subjectivity is contingent on the proper

⁴ Dwight D. Eisenhower, 'Atoms for Peace', Presidential address delivered on 9th January 1953. The official press release, from which I'm citing here, is available online at http://www.eisenhower.archives.gov/research/online_documents/atoms_for_peace/Binder13.pdf [accessed 20th November 2014], p. 7.

⁵ *Ibid.*, pp. 3, 4.

⁶ Philip Armstrong, *What Animals Mean in the Fiction of Modernity* (London: Routledge, 2008), p. 11.

management of these risks. The security culture of Cold War geopolitics was thoroughly invested in domesticating risk through the judicious application of technological reason. In pursuing this strategy, it instantiated the model of humanist subjectivity which stresses the uniquely agentive capacities of human beings to control not only their political fates but also their nonhuman environment; and indeed the nuclear technologies developed during the conflict stimulated transformations not only in global politics, but also for planetary life as such.⁷

In the previous chapter, I showed how the resistance of technologies in particular, and nonhuman agencies more broadly, haunted the imagination of the supposedly sovereign human subject. In this chapter, I want to examine how nuclear security discourses performed the double work of subjecting the nonhuman to more precise regimes of control while simultaneously reasserting the technological mastery of the human. I will argue that the tension between agency and risk in Cold War culture can be mapped as a conflict between, on the one hand, a (precariously) sovereign, technologically-equipped human subject, and, on the other, a certain inhumanity of risk, in which the threats to security (or the internal limits of security discourses) are figured as nonhuman, largely aleatoric actors—the unruly bear, for instance, or the intractable disobedience of nuclear security systems.

I will begin with the discourses of nuclear security, foregrounding the crucial rhetorical work performed by their humanist investment in calculation and their disavowal of animality. In this connection, I examine the game theory of American military strategists and the anti-nuclear polemics of Bertrand Russell. While these two discourses arrived at absolutely opposed conclusions concerning nuclear policy, both depended on the invocation of a rational, sovereign subject mastering risk through the use of ‘common sense’, in Russell’s terms, and as I will show, each policed the boundaries of its own discourse to carefully exclude the possibility of its contamination by nonhuman actors.⁸ Both animals and technologies, as exemplary nonhuman actors, are located in these discourses only as surfaces upon which human sovereignty might act, and never as potentially resistant agents. Cultural responses to Cold War security are broadly suspicious of this humanistic confidence, and I will read Stanley Kubrick’s seminal *Dr. Strangelove: or, How I Learned to Stop Worrying and Love the Bomb* (1963) as exemplary of this tendency.⁹ In *Dr. Strangelove*, technological autonomy circumvents human agency with

⁷ See especially the essays collected in *Nuclear Wastelands: A Global Guide to Nuclear Weapons Production and Its Health and Environmental Effects*, ed. by Arjun Makhijani, Howard Hu, and Katherine Yih (Cambridge, MA: MIT Press, 2000).

⁸ Bertrand Russell, *Common Sense and Nuclear Warfare* (London: Routledge, 2009 [1959]). Further references will be given in the text.

⁹ *Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb*, dir. by Stanley Kubrick (Columbia, 1964)

disastrous results, and the high rationality of statesmanship and military strategy is persistently disrupted by the interjection of bodily forces, revealing the universal rational subject of nuclear security discourse to be illusory.

Next, I examine the use of animals as research subjects in nuclear tests, reading these sacrificial animals alongside the popular cinema of the 1950s, which often featured mutant animals in starring roles. These animals testify to an anxiety surrounding the imperfect ability of human agency to domesticate risk, where the uncontrollable excess of risk once again takes the form of a (now monstrous) non-human nature—the incalculable Other of calculating technological reason. These films enter into a dialogue with the history of animal experimentation in nuclear culture, narrating a kind of ecological revenge fantasy in which the nonhuman ‘resources’ which supplied the data meant to underwrite nuclear security return in monstrous form to undermine the very security regimes in whose name they were ‘sacrificed’. The popularity of radioactive megafauna in postwar cinema indexes a fear that the stability of species is threatened by the atomic project; in these films, its capacity to unsettle genotypes through radioactivity dissolves existing morphological norms, and indeed, predator-prey relationships, and this dissolution of boundaries has political repercussions.¹⁰

I conclude by reading John Wyndham’s post-apocalyptic novel *The Chrysalids* (1955) as a meditation on the relationship between genetic uniformity and political solidarity.¹¹ If postwar humanism rests on a presumption of the uniformity of humanity as a condition for meaningful political action, *The Chrysalids* asks what happens to political communities when this uniformity is conspicuously disrupted. Wyndham’s novel imagines a future where lingering radioactivity means that mutations proliferate amongst humans. Mutations are jealously guarded against by the enforcement of religiously-sanctioned violence: morphological non-conformity spells death in this world. This community-defining labour reveals species identities as contingent, products of the work of exclusionary violence. *The Chrysalids* offers a particularly acute expression of contemporary anxieties surrounding the disruptive potential of radioactivity, which, through its ubiquity in the discourses (and indeed, the physical environment) of the postwar West, came to be seen as a threat to the integrity of the human itself.

¹⁰ In *Planet of the Apes* (dir. by Franklin J. Schaffner, 20th Century Fox, 1968), for instance, the virile Charlton Heston plays the American individualist who discovers that the atomic future might mean the unseating of the sovereign human subject, as rival primate species now hold political power. On the post-atomic disappearance of individualism in *Planet of the Apes*, see especially Susan McHugh, ‘Horses in Blackface: Visualising Race as Species Difference in *Planet of the Apes*’, *South Atlantic Review*, 65.2 (2000), 40-72.

¹¹ John Wyndham, *The Chrysalids* (London: Penguin, 2008 [1955]). Further references will be given in the text.

Nuclear and Anti-Nuclear Rationality: Calculating Subjects, Unruly Bodies

'The world is faced with a race between reason and death. Advocates of death point out, with a lamentable degree of truth, that reason is a very feeble force in human affairs'
—Bertrand Russell, *Common Sense and Nuclear Warfare*, p. 53.

The nuclear brinkmanship of Cold War geopolitics, and the domestic conflict between advocates and critics of nuclear policy, must be understood not only as a struggle for military or political hegemony; it was also a struggle to define what humanity, and human agency in particular, might mean in the postwar moment. Tacitly, no doubt, and often obscurely, nuclear discourses nevertheless drew upon the resources of post-enlightenment humanism in order to legitimate their own claims, or discredit their opponents. Both advocates of nuclear deterrence and its critics sought to mobilise an intellectual formation which established the proper relations between reason, death, technology, agency and species difference. Bertrand Russell, a staunch critic of nuclear policy and the most prominent intellectual associated with the Campaign for Nuclear Disarmament, claimed in his *Common Sense and Nuclear Warfare* that rational calculation demands nuclear disarmament as the only acceptable solution to geopolitical crisis, and the only way to preserve the integrity of the human from the deleterious effects of nuclear war. His opponents, the military strategists, argued the contrary: that the rational calculation of risk could be managed in such a way that the growing technical feasibility of total nuclear destruction would compel both parties to the conflict to reach an uneasy stalemate (the notorious doctrine of Mutual Assured Destruction).¹²

Their assurances were part of a larger movement in which the management of nuclear risk became central to Western culture, and this generated a replicable narrative scheme which Alan Nadel names 'containment culture', after the military policy of the same name.¹³ Containment culture linked national policy and personal identity, as Nadel points out, but it also linked the salvation of humanity to an investment in the efficacy of human agency. In this period of ongoing nuclear crises, the survival of the species became conditional on the ability of human agency to thoroughly domesticate its deadly tools, and on the power of human reason to properly calculate risks and design appropriate strategies in response. Both the anti-militarists and their detractors frame themselves as inheritors to enlightened rationalism, opposed to the

¹² See Robert Ehrlich's *Waging Nuclear Peace: The Technology and Politics of Nuclear Weapons* (Albany: SUNY Press, 1985) for an overview of the United States' nuclear strategies.

¹³ Alan Nadel, *Containment Culture: American Narratives, Postmodernism and the Atomic Age* (Durham and London: Duke University Press, 1995).

'instinctive' irrationalism of the other side.¹⁴ Another strand of postwar thinking, which I locate in Kubrick's *Dr. Strangelove*, seeks to frame the relationship between human reason and technological violence differently: it asks how the promises of humanism fail to account for the irreducibility of technology to compliant instrumentality, and it insists that the unruliness of affect and embodiment undermines attempts to ground security in the supposed certainty of rational calculation. The sovereignty of calculating subjectivity has, in this account, created a state of affairs in which 'the fully enlightened earth radiates disaster triumphant', to borrow Adorno and Horkheimer's portentously atomic phrase.¹⁵

The anti-humanist pessimism of *Dr. Strangelove* was not shared by the military leadership, whose primary intellectual resource for the development of nuclear strategy was the emergent field of game theory. Developed by the mathematician John von Neumann during the Second World War and gaining traction throughout the 1950s, game theory was conceived as a way of making the risks inherent in nuclear geopolitics amenable to a mathematical, probabilistic analysis—to subject the vicissitudes of military conflict to a procedure of rational calculation. As the Cold War cultural historian Stephen Belletto puts it, 'In the game theory narrative, the promise of scientific redemption combines with the power of rationality to triumph over the threat of chance, and, ultimately, with the power of the United States to triumph over the Soviets and their perceived goal of global Communism'.¹⁶ The ascendancy of game theory reflects an entrenchment of a certain model of calculating subjectivity—backed by the epistemological prestige of science—in the Cold War state and its various prostheses. The methodology of the game theorists installed a sovereign subject at the centre of nuclear strategy, as the mathematical psychologist Anatol Rapoport suggests: 'A game ... is idealised as a struggle in which the complete "rationality" of the opponents is assumed'.¹⁷ Game theory, then, asserts that nuclear risk can be made manageable because of the universality of reason. It translates the claims of post-enlightenment humanism (that there is such a thing as a

¹⁴ An important context for this discussion, but one which I don't have space to discuss fully here, is the explosion of contemporaneous biological and ethological research into nonhuman aggression, a research program which quite self-consciously set out to derive geopolitical strategy from animal behaviour. The most significant work in this area was done by Konrad Lorenz, notably in his *On Aggression* (London: Routledge, 2008), originally published in English in 1966. Popularising works by Robert Ardrey – notably, in the context of military strategy, his *The Territorial Imperative: A Personal Inquiry Into the Animal Origins of Property and Nations* (London: Collins, 1967) – brought this research to a wider audience.

¹⁵ Theodor W. Adorno and Max Horkheimer, *Dialectic of Enlightenment*, trans. by John Cumming (London: Verso, 2010), p. 3. Adorno and Horkheimer were writing some months before the bombings of Hiroshima and Nagasaki.

¹⁶ Stephen Belletto, *No Accident, Comrade: Chance and Design in Cold War American Narratives* (Oxford: Oxford University Press, 2012), pp. 102-103.

¹⁷ Anatol Rapoport, *Fights, Games, and Debates* (Ann Arbor: University of Michigan Press, 1960), p. 10.

generically rational, autonomous subject) into a methodological axiom on which rests the fate of international security.

The game theorists claimed that the universality of reason necessitated a policy of nuclear deterrence which would appeal to the rational self-interest of both parties to the conflict, and so prevent the outbreak of war. They appealed to the determinacy of reason, in which, faced with a situation of crisis, a rational subject would predictably choose a given course of action. But this confidence in reason's determinacy quickly began to appear misplaced when comparable appeals saw the supposed universality of reason mobilized for precisely the opposite strategic end. Bertrand Russell's *Common Sense* asserted that disarmament, not deterrence, was mandated by the judicious application of reason to international nuclear policy. Despite this strategic disagreement, Russell shared with the game theorists a primary investment in the sovereignty of the human. His pamphlet goes beyond the immediate questions of armament and military strategy, proposing instead a thoroughgoing reconstitution of social institutions on a pacifist and explicitly humanist basis. In place of nationalist pedagogy, which he holds accountable for the ongoing nuclear crisis, he argues for an anti-militarist pedagogy which would teach a narrative not of national triumph but of the collective human ascendancy over nonhuman world: 'the story of man's [sic] increasing mastery over nature' (p. 62).

This narrative of human mastery over the nonhuman enfranchises (and, perhaps, constitutes) universal humanity as the collective subject of the hoped-for post-disarmament international order, and Russell's 'promoting [of an] awareness of common humanity' (p. 22) is conditional on the subjection of the nonhuman world. He introduces his argument for disarmament through a thought experiment involving an outbreak of canine rabies in Berlin, assuming that both Marxist-Leninist and liberal capitalist states would cooperate to 'find measures of extirpating the mad dogs', rather than hoping that the dogs kill more of their ideological enemies than themselves (p. xxx). Animal life here incarnates the obscure but appalling risks associated with the nuclear moment, and the threat of zoonotic contagion is held to be exterior to ideology and community; unable to make ethical claims on us, it is apolitical 'common sense', in Russell's idiom, to exercise immunitary biopolitical violence to cull the dangerous animals. Like the nuclear weapons to which they are analogised, the eradication of the nonhuman threat is sanctioned as part of a consensus benefitting 'the welfare of the human species as a whole' (pp. xxix-xxx). As I will argue in more detail later, nuclear weapons, like animals, are positioned as exterior to and therefore constitute of the community of human subjects.

Russell's abjection of the nonhuman is backed by a symmetrical investment in human political agency, as he claims that 'we are not *doomed* to persist in the race towards disaster. Human

volitions have caused it, and human volitions can arrest it' (p. 13). But Russell's confidence in the salvific potential of reason conflicts with another conception of military-strategic reason employed by the Cold War systems theorist Herman Kahn. Kahn, whose work was deeply influential in United States policy circles, saw reason not as a power for arresting nuclear destruction, but rather for managing that destruction to the strategic advantage of the Western powers.¹⁸ His most important work, *On Thermonuclear War* (1960), famously presented a table under the heading 'Tragic but Distinguishable Postwar States', in which he calculated the number of nuclear deaths that America could withstand whilst still recovering economically within a reasonable period of time.¹⁹ I began this section with an epigraph from Russell's *Common Sense*, where Russell framed the peculiar crisis of the nuclear moment as 'a race between reason and death' (p. 53). What emerges in the work of Kahn and other military strategists is something altogether at odds with this reading of the situation. It is rather reason in the service of death, or reason *as* death, which characterises the strategic thinking of the Cold War state.

This calculating thanatology – which Eisenhower referred to as 'the awful arithmetic of the atomic bomb' – became the target of satire in Stanley Kubrick's *Dr. Strangelove*.²⁰ Released in the aftermath of the Cuban crisis, Kubrick's war-room comedy imagines a similarly critical moment of nuclear tensions between the Soviet Union and the United States. Overcome by paranoia, a rogue U.S. army officer, Brigadier General Jack D. Ripper (Sterling Hayden) unilaterally orders his strategic bombers (lead by Slim Pickens) to make a nuclear first strike on Soviet territory. At the Pentagon, President Merkin Muffley (Peter Sellers) attempts to stop the impending catastrophe, negotiating ineffectually with the Soviet premier (an inane and probably drunken buffoon) over the famous 'red telephone'—the Moscow-Washington hotline which linked the Pentagon and the Kremlin. The liberal ideal of communicative reason collapses as their conversation reaches a paralysing intensity of incomprehension and despair. Meanwhile, the President's hawkish advisor, General Buck Turgidson (George C. Scott), advises him to follow up with further nuclear strikes. The ex-Nazi nuclear expert Dr. Strangelove (also played by Sellers) recommends that the ruling classes of the United States be relocated to underground bunkers to escape from radiation and, eventually, rebuild society—a Kahnian wager that mass death is justifiable if strategic aims can be met while ensuring that enough people remain alive to guarantee the survival of the state. The Soviet ambassador (Peter Bull) reveals that the Russians have built a 'doomsday device' which will respond to any acts of

¹⁸ Kahn co-founded the influential security and policy think tank the Hudson Institute in 1961, and later worked as a consultant to the Department of Defence during the Vietnam War.

¹⁹ This table is reproduced in Belletto, *No Accident, Comrade*, p. 112.

²⁰ Eisenhower, 'Atoms for Peace', p. 4.

nuclear aggression. A fully-automated security system whose response cannot be prevented by human action, this device, when triggered, will launch enough nuclear warheads to destroy ‘all human and animal life’. Despite the frantic efforts of the United States’ leadership, the bombers cannot be stopped; the atomic bombs are dropped, and the film closes with a montage of detonations.

The narrative tensions of *Dr. Strangelove* emerge from its deployment of the postwar cultural anxieties I’ve have discussed in this chapter, principally the conflict between human agency and autonomous technology (in the form of the doomsday device) on the one hand, and the inhumanity of calculating reason on the other. Kubrick’s film was explicitly engaged with contemporary debates on game theory and nuclear strategy, and in pre-production he met with Herman Kahn several times.²¹ As Steven Belletto has shown, *Strangelove* is ‘a satire not only of nuclear brinkmanship but also of the particular game-theoretic rationality that was claimed to prevent such escalation from actually coming to war’.²² In *Dr. Strangelove*, nuclear reason is called into question in three respects. Firstly, the Kahnian wager of Dr. Strangelove himself is framed as appalling and self-serving. If its advocacy by an ex-Nazi wasn’t enough to condemn it, the suggestion that mass death could be justified if enough survive appears in the film as an act of astonishing bad faith; after all, it is Strangelove and his peers who would be shielded from the effects of the bomb, and Strangelove’s suggestion that the nuclear bunkers be populated with women and men at a ratio of 10:1, ostensibly to repopulate the earth, hints at a strange complicity not only of reason and death, but also reason and desire. The disinterested rationality of the calculating military theorist resembles nothing so much as the self-serving justifications of the libidinal subject seeking to maximise his access to opportunities for sex and procreation—a suspiciously inhuman motivation for this exemplar of human rationality.

The second aspect of *Strangelove*’s critique of humanist reason is found in its presentation of the relationship between agency and technology. The nuclear moment poses a challenge to the orthodox humanist account of agency, and particularly that aspect of agency which is concerned with wilfully subordinating the new atomic powers to effective control through the judicious use of technological apparatuses, as we saw in the encounter between bear and nuclear security systems at Duluth airbase. In our own time, nuclear power creates unprecedented technical and engineering problems. Michael Madsen’s 2010 documentary film *Into Eternity* followed the construction of the Onkalo spent nuclear fuel repository in Finland.²³ Intended to remain undisturbed for the entire period that the nuclear material remains radioactive (100,000 years),

²¹ Sharon Ghamari-Tabrizi details Kahn’s encounters with Kubrick in *The Worlds of Herman Kahn: The Intuitive Science of Thermonuclear War* (Harvard: Harvard University Press, 2005), pp. 275-276.

²² Belletto, *No Accident, Comrade*, p. 103.

²³ *Into Eternity*, dir. by Michael Madsen (Films Transit International, 2010).

the Onkalo facility is engineered for a future which is so distant as to elude conception. The management of the nuclear waste problem therefore renders unintelligible the familiar temporality of historical time as the stage on which human action plays out.

The attenuation of the human which these new forces produce (and the attenuation of human historical agency in particular) was observed by the philosopher and prominent postwar critic of technology Martin Heidegger:

No single man, no group of men, no commission of prominent statesmen, scientists and technicians, no conferences of leaders of commerce and industry, can brake or direct the progress of history in the atomic age.²⁴

For Heidegger, this forms something like the ontological destiny of humanity in modernity. We can more modestly assert that this fear of diminishing agency is a function of the emergence of technological forces which seem to operate according to their own logics, in excess of our imperfect abilities to control them; technology itself becomes something like an agentive force at just that moment when human historical agency looks set to disappear. In *Strangelove*, this reversal is instantiated in the doomsday device. Immune to the executive authority of the leadership of the Cold War states, the device bypasses human agency and presides over the transition to post-history, not as the Hegelian coming-to-itself of the human Spirit but as nuclear annihilation.

Finally, Kubrick's staging of the incapacity of reason in *Dr. Strangelove* sees this incapacity not only in relation to an external technological milieu that exceeds our control, but also as something internal to the human subject itself. The prevailing ontology of subjectivity in humanist modernity installs the subject as sovereign and master over his technological networks; but this mastery of technology is only possible after a prior mastery of the self, and in particular, the mastery of a body made to conform to the direction of the rational will. In *Strangelove*, the body is a site of profound anxiety. We see this most famously in the person of Dr. Strangelove himself, whose body betrays his unreconstructed fascism through its irrepressible urge to raise a right arm in the Nazi salute, much to the embarrassment of its owner (if, that is, it makes sense to talk about one 'owning' one's own body). Moments of bodily unruliness and unreason punctuate the narrative, which, after all, is initiated by the witless paranoia of General Jack D. Ripper who fears a conspiracy to steal his 'precious bodily fluids'. The hawkish general Buck Turgidson is distracted from affairs of state by the physical attentions of his mistress, and his name implies a bestial excess of virility at odds with the sober responsibilities of a military leader armed with nuclear weapons. The tension between calculation and unruly embodiment is worked through formally in the film, which shifts rapidly

²⁴ Martin Heidegger, *Discourse on Thinking* (New York: Harper & Row, 1966), p. 50.

between the affect of tension associated with the military-political thriller and the eruptive, bodily force of laughter associated with farce.

Reading *Dr. Strangelove* through a posthumanist framework focuses attention on its presentation of an incapacity at the core of the human. Failure is incompatible with the humanist fantasies of control that regulated the state's relationship to technology in the Cold War. In *Dr. Strangelove*, a film which is substantially *about* failure, Kubrick explains the miscalculation of nuclear risk as a consequence of this fantastical assertion that the human has escaped from its bodily and affective investments into a space of pure military-strategic reason. Where both the military strategists and Russell's anti-nuclear polemics found their deliberations on an orthodox account of the human as sovereign, rational and agentive, *Strangelove* recognises that we have never been human in quite this sense.

So far I have been principally concerned with the way that the problem of nuclear risk touches on the theme of inhumanity as something which is *internal* to human reason: nuclear risk cannot be calculated because, with Kubrick, the human subject who calculates is beholden to any number of psychic, erotic and affective forces which undermine its presumed sovereignty. In the next section of this chapter, I want to examine more closely the *externalisation* of anxieties concerning nuclear risk in the popular culture of the Cold War. Risk here is figured not as the failure of human reason and agency; it is not only a certain inhuman incapacity at the core of subjectivity, but a very definite inhumanity, projected outwards and discovered in nature in the form of radioactive megafauna, which stalks the humanist imagination in nuclear modernity. In order to pursue this inquiry, I now turn to the origins of the nuclear project as an inaugural moment which exposed the earth to unprecedented destructive forces and incited new anxieties concerning nonhuman agency in post-atomic nature.

Tracking the Animal in Nuclear Culture

The Trinity nuclear weapons test during the Second World War marked a threshold which saw the transformation of relations between technology and life. The extensive and damaging effects of human activity on the global environment in modernity has led some climate scientists and environmental humanists to define a new period in geological history: the Anthropocene, in which industrial processes left their mark in the geological record in the form of carbon deposits.²⁵ Timothy Morton has recently identified the Trinity test as the beginning of a 'Great

²⁵ The Anthropocene has become the key *topos* in the environmental humanities, generating a huge amount of critical interest including 'Imagining Anew: Challenges of Representing the Anthropocene', a

Acceleration, a moment in the Anthropocene during which its basic forces were exponentially sped up'.²⁶ Histories of the atomic project have, for the most part, focused on the international struggle for technological supremacy and the dramas of Cold War geopolitics.²⁷ Reading the nuclear moment through a posthumanist frame, however, one is compelled to acknowledge that the cultural and material impact of the bomb was in no ways restricted to such a narrowly anthropocentric set of concerns. The postwar period of intensive nuclear testing represented an unprecedented technological violence against the earth and its oceans, damaging ecosystems and spreading radioactive contaminants throughout the global atmosphere. In these tests, animal bodies were repeatedly exposed – both deliberately and incidentally – to the full force of the nuclear bomb, as well as its lingering after-effects. For this reason, when I suggest that the 1945 Trinity test inaugurated a transformation of relations between technology and life, I mean to resist the anthropocentric reduction that would conflate 'life' with 'human life'. The global fallout of the twentieth century's atomic weapons programs affects planetary life as such: nuclear culture impacted (and continues to impact) upon the living in general, human and nonhuman.

My aim in this section of the chapter is to recover some of the ways in which nonhuman life was implicated in the nuclear project. I will begin by analysing the transformation of animal bodies into experimental resources in the postwar atomic weapons tests undertaken by the United States' military. In substituting human for animal bodies, these tests rest upon the equality of exposure of all organic life to the deleterious forces of the nuclear blast. Next, I turn to the emergent genre of the nuclear science fiction film. In these films, post-atomic nature takes on a monstrous aspect, and the precarity of human mastery over the nonhuman world is made plain by a kind of ecological return of the repressed in the form of dangerous radioactive megafauna which challenge humanity's narcissistic self-regard as supposed apex predators. These films speak to a broader anxiety about contamination and mutation in postwar humanism, which registered the proliferation of elements like radioactive Strontium-90 as a threat which could easily traverse – and through mutation, threaten to undo – the boundaries between human, animal and vegetal life. In continuity with my arguments earlier in this chapter, I claim that in nuclear culture, the fear of a failure of calculating reason incites a discourse of risk in which risk

recent special issue of *Environmental Humanities*, 5 (2014), as well as Joanna Zylińska's *Minimal Ethics for the Anthropocene* (Open Humanities Press, 2014).

²⁶ Timothy Morton, 'The Oedipal Logic of Ecological Awareness', *Environmental Humanities*, 1 (2012), 7-21 (p. 7).

²⁷ See, for instance, *The American Atom: A Documentary History of Nuclear Policies from the Discovery of Fission to the Present*, ed. by Philip L. Cantelon, Richard G. Hewlett, and Robert C. Williams, 2nd edn (Philadelphia: University of Pennsylvania Press, 1991).

is figured as nonhuman, incalculable, and therefore potentially fatal to the humanistic fantasies of control which regulate our relation to both technology and nonhuman animal life.

The Atomic Ark: Operation Crossroads and the Animal Body

Bikini Atoll, 1946: The first peacetime detonation of nuclear weapons by the United States armed forces presented military scientists with an unprecedented opportunity to investigate the effects of nuclear radiation on organic life. Test Able, which inaugurated Operation Crossroads, saw 176 goats, 146 pigs, 109 mice, 57 guinea pigs and 3,030 white rats exposed to the blast of the first nuclear warhead to be detonated since the atomic bombing of Nagasaki.²⁸ The nonhuman test subjects were confined aboard U.S., German and Japanese warships stationed in the blast zone, comprising what the *Washington Post* described as a series of 'atomic ark[s]', and which the official military record referred to as 'a great dirtless farm, a palatial hotel for animals'.²⁹ Approximately 35% of animals died in the course of the research project, whether from the blast itself, secondary illnesses caused by exposure to radiation, or from subsequent invasive scientific procedures.³⁰ An advertisement produced a few years later memorialises these unconsenting test subjects: 'We must thank animals if good comes from the atomic bomb'.³¹

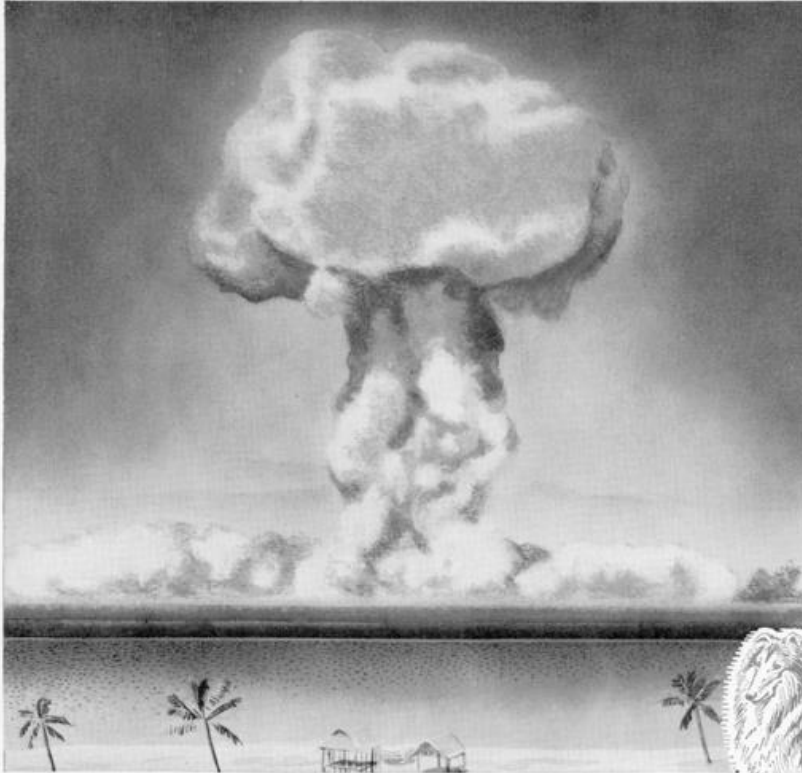
This final image reminds us that animal 'sacrifice' is central – both empirically and symbolically – to the narrative of Promethean mastery over the nonhuman world through technology. The nuclear cultures of the mid-twentieth century cast animal life in two conflicting roles: firstly, that of generous assistant in the work of technoscientific development; and secondly, as the exemplary victims of instrumental reason's unconstrained drive towards domination of the nonhuman world. The advertisement reproduces this ambivalent function through its strange convocation of two conventionally opposed symbolic imaginaries: the domestic and familiar, in the form of a glossy-coated long-haired collie dog; and the technological violence of nuclear modernity, instanced in the mushroom cloud of a test explosion at the Pacific Ocean test site. The text of the advertisement is similarly unsure how to place animals in the post-atomic moment, reporting the quasi-sacrificial deaths of animals in experimental detonations even as it

²⁸ W. A. Shurcliff on behalf of Joint Task Force One, *Operation Crossroads: The Official Pictorial Record* (New York: Wise and Co., 1946), p. 108.

²⁹ 'Aboard the Atomic Ark', *Washington Post*, 25th September, 1946; W. A. Shurcliff on behalf of Joint Task Force One, *Bombs at Bikini: The Official Report of Operation Crossroads* (New York: Wise and Co., 1947), p. 50.

³⁰ Shurcliff, *Bombs at Bikini*, p. 140.

³¹ Advertisement for the National Society for Medical Research, 1952. See image overleaf.



WE MUST THANK *Animals*
IF GOOD COMES FROM THE ATOMIC BOMB

A MEDICAL AUTHORITY, in a discussion of cancer and heart disease, says that radioactive substances made available to science by atomic fission are "the great opportunity for modern science."

Already radioactive chemicals, even germs that have been made radioactive, can be fed, or otherwise administered, and their progress traced through the body. As a result, it is known that radioactive sodium chloride may be useful in disclosing the extent or nature of certain heart and circulatory conditions; radio-iodide in diag-

nosing the extent of an enlargement of the thyroid; radiocarbon and radiocobalt in studying cancer.

It is important to realize that only by studying the diagnostic or curative effects of such substances in animals would scientists dare to extend their use to man.

It is also important to know that through the use of animals, including goats, hogs, rabbits, mice and sheep, at the sites of experimental explosions of atomic bombs, scientists are gradually learning how to overcome disease conditions caused by atomic explosions.

By education and experience, your veterinarian is best qualified to safeguard the health of your pets. Always entrust their welfare to his care.

concludes with an appeal to domestic animal welfare: 'Your veterinarian is best qualified to safeguard the health of your pets. Always entrust their welfare to his care.'

From this marginal collie dog, to the monstrous animality of the nuclear science fiction film, to Bert the Turtle in the famous 'Duck and Cover' public safety broadcast, animal images abound in the visual cultures generated by the nuclear project. The detonations at Bikini Atoll in 1946 were the occasion of an unusually intimate encounter between the animal body and the animal image. Shortly after the test explosions had taken place, fish inhabiting the Bikini Lagoon were captured, bisected and placed on a photographic plate. The effects of radioactivity on the fish's body, most especially the passage of radioactive algae through its digestive tract, meant that the body would expose the photographic film. With the development of radioautography, military scientists developed a representational practice which exemplified the instrumental or indexical function of animal life in nuclear modernity. The radioactive corpse of the fish is the medium through which the toxic legacy of Cold War weapons programs was committed to celluloid. Conscripted into the scientific-representational practices of the Cold War security state, the animal body became the author of the record of its own imbrication in the violence of the atomic project.³²

Nuclear culture thus established an intimate relationship between the imperatives of national security and the organic composition of the living being. As the anthropologist Joseph Masco points out, 'the legacies of a half century of radioactive nation-building are not only in our technological infrastructure and our social institutions—they are in our bodies. Every person on the planet now receives a certain amount of radiation each day produced by the cumulative effects of above-ground nuclear tests.'³³ Masco here restricts the bodily incorporation of radiation to the human species, but as he recognises elsewhere, the biological risks peculiar to the atomic age pay no heed to species distinctions. The official rationale behind the conscription of nonhuman animals into nuclear test projects was, of course, that animate organic life of whatever species is subject to similar deformations by nuclear blasts and radiation, and so animal bodies would provide useful experimental models for calculating the possible effects of the bomb on human life. For this reason, claims the official record of Operation Crossroads, 'Pigs were particularly valuable [to military scientists,] since their skin and short hair are comparable to man's.'³⁴

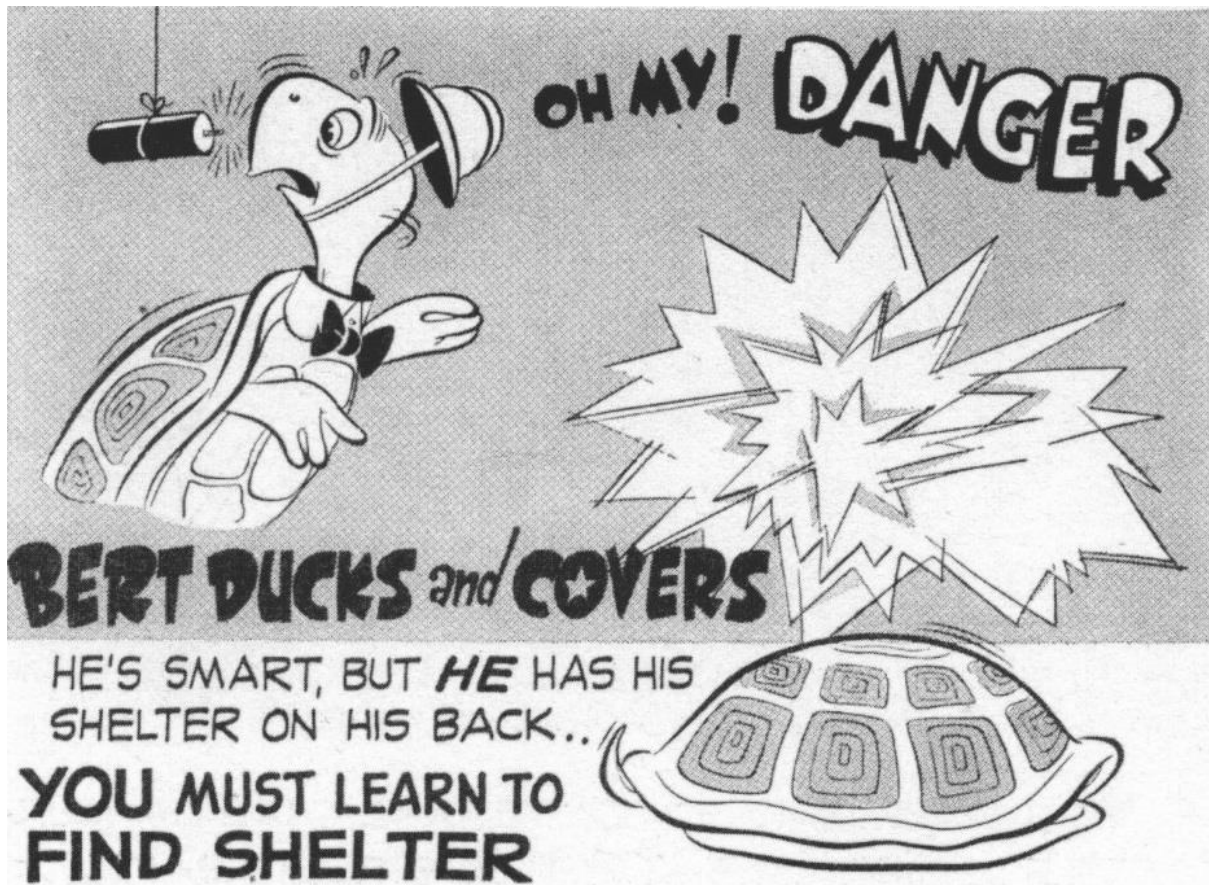
³² On radioautography, see *Operation Crossroads*, p. 216 and Joseph Masco, *Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico* (Princeton: Princeton University Press, 2006), pp. 303-305. See also image overleaf.

³³ Masco, *Nuclear Borderlands*, p. 26.

³⁴ Shurcliff, *Bombs at Bikini*, p. 85.



Radioautograph,
from Operation
Crossroads,
Bikini Atoll



Bert the Turtle, from promotional materials produced for the 'Duck and Cover' civil defence film (1951).

As Masco says of the later use of pigs in Operation Plumbbob (1957), ‘Nuclear trauma is not to be avoided [in weapons tests]—indeed it is instrumentally and methodically pursued—in an effort to test the fragility of human *and* animal bodies to nuclear radiation and blast effects’.³⁵ The demonstration of human technological domination over the nonhuman world, and the reaffirmation of the (supposedly) unique human capacity for technical ingenuity, were crucial to the cultural work done by the nuclear weapons program in the postwar humanist imaginary. At the same time, the substitutability of human for animal life in the context of nuclear testing served as a chastening reminder of the fleshy vulnerability of human as well as animal life. If the development of atomic technologies flattered the ego of *homo faber*, the animal experiments at Bikini Atoll and after demanded recognition of the equality of exposure of all organic life to the forces unleashed by the bomb.

Radioactive fallout, the phenomenon most readily identified with the uncontainability of nuclear risk, incited anxieties through its ability to traverse geographical boundaries and also, through its bodily incorporation in food production processes, boundaries of species. Strontium-90, a radioactive isotope the spread of which was a well-publicised risk of nuclear testing, became in the postwar period a kind of agentive vehicle carrying the dangers of the atomic age across species lines. As Albert Schweitzer pointed out in his 1958 polemic against nuclear testing, ‘In the form of radioactive rain and radioactive snow, [Strontium and other radioactive elements] fall down on the earth. They enter the plants through leaves and roots and stay there. We absorb them through the plants by drinking milk from the cows or by eating the meat of animals which have fed on them.’³⁶ An anti-nuclear protest song of a few years later asked:

Oh where, oh where has the fallout gone
 Oh where can the poison be,
 Why right in the milk and the other things
 That the milkman brings to me.³⁷

The productive fiction of agrarian purity and untainted food supplies, which was already coming under pressure due to the contemporaneous rise of intensive agriculture, was in the time of atomic weapons testing corrupted further by the global dissemination of radioactivity. Nuclear fallout transported the dangers of atomic weapons from peripheral spaces – the New Mexico desert, and the Pacific islands – to the symbolic centre of American domesticity. This dis-

³⁵ Masco, *Nuclear Borderlands*, p. 310, my emphasis.

³⁶ Albert Schweitzer, ‘Peace or Atomic War?’, a special *Peace News* supplement, reprinted from *Peace News*, May 2, 1958, p. 1.

³⁷ Cited in Ralph H. Lutts, ‘Chemical Fallout: *Silent Spring*, Radioactive Fallout, and the Environmental Movement’, in *And No Birds Sing: Rhetorical Analyses of Rachel Carson’s Silent Spring*, ed. by Craig Waddell (Carbondale: Southern Illinois University Press, 2000), pp. 17-41 (p. 23).

location of nuclear risk meant that the (so-called) traditional farm forfeited its imaginative function as a bulwark against technological and political upheavals. In my readings of George Orwell and R.S. Thomas, I have shown how the farm functioned paradoxically as both a space which was outside of and immune to the pressures of historical development, and as a site which was singularly vulnerable to disruption by new technological forces. In the nuclear moment, the second of these senses came to prevail. The animal products and animal bodies that agriculture generated became suspect, ceasing to signify purity, family and prosperity and coming instead to be associated with contamination and risk. This estrangement of familiar nature by nuclear development becomes a recurrent theme in the popular cinema of the 1950s, to which I would now like to turn.

Monstrous Nature: Mutation and the Postwar Nuclear SF Film

The animals who were exposed to radiation in nuclear weapons tests were positioned, conventionally enough, as sacrificial subjects whose deaths were justified in the pursuit of human health and national security; their bodies were passive surfaces on which power might act. When the animals implicated in experimental research were figured as agents – as active forces rather than passive surfaces – their role in the discourses of nuclear risk was substantially transformed. The cultures of the Cold War produced an abundance of nuclear animal agents. The extraordinary (and continuing) popularity of Stan Lee's Spider-Man character, who was first revealed in *Amazing Fantasy* in 1962 and later published in his own series as *The Amazing Spider-Man* (1963), imagined radiation as a vector for the undoing of human-animal difference.³⁸ Bitten by a radioactive spider at a demonstration of atomic energy, Peter Parker acquires the spider's astonishing strength and agility, and he uses these powers to safeguard his family and defend the city against a variety of enemies, domestic and foreign. Lee was interested in this narrative less as a challenge to the ontology of humanism and more for its pedagogical uses as a way of socialising young men into the Cold War obligations of capitalist prosperity, familial loyalty and American nationalism.

A more explicit engagement with animal agency and nuclear risk was sustained by the nuclear science fiction film, a genre which emerged in the early 1950s.³⁹ Reflecting the global implications of the nuclear project, this genre produced popular films in various national

³⁸ The earliest Spider-Man comic strips, published between 1962 and 1964, are anthologised in Stan Lee and Steve Ditko, *The Amazing Spider-Man: Volume 1* (New York: Marvel, 2012).

³⁹ A definitive survey of Cold War monster films is provided in M. Keith Booker's chapter 'The Creature from the Cold War: Science Fiction Monster Movies of the Long 1950s', in his *Monsters, Mushroom Clouds and the Cold War: American Science Fiction and the Roots of Postmodernism, 1946-1964* (Westport: Greenwood Press, 2001), pp. 139-165.

markets, most famously Ishirō Honda's *Godzilla* (1954).⁴⁰ It was in the American market, however, that the genre found the greatest traction. Released in 1954, *Them!* retains some popularity today as a kitsch document of Cold War nuclear anxiety.⁴¹ Set on the periphery of the New Mexico desert near to the Trinity test site, *Them!* imagines that the nuclear test nine years earlier has transformed nonhuman genotypes, resulting in a kind of return of the repressed: the native ants, who were presumably killed in large numbers by the Trinity test, return in monstrous form: "a fantastic mutation, probably caused by lingering radiation from the first atomic bomb," as one character puts it. Nuclear risk, which was elsewhere figured as a consequence of an inhumanity which is internal to – and repressed by – humanist subjectivity, appears in *Them!* as productive of external dangers to humanism, and this externalisation of risk produces a new ethical and political orientation towards the nonhuman. As M. Keith Booker points out, the inhuman antagonists of postwar monster films are most often 'unremittingly Other, and there is never a suggestion that moviegoers might consider having any sort of sympathy for them'.⁴²

Them! stages the disruption of morphological norms by radiation, and although the mutation of animal bodies is unintentional in both the film and the Trinity test, the nuclear project had, since Operation Crossroads, deliberately cultivated the capacity of radiation to transform animal genotypes, as the official military records show: "The National Cancer institute supplied white mice with predilections for or against cancer. They were exposed in order to determine whether the intense radiations would produce genetic changes."⁴³ *Them!* puts this institutional context into play with another central Cold War anxiety: a fear of diminishing human agency in a world where scientific specialists engineer technologies which threaten to exceed their strictly delimited instrumental function, bringing about instead a proliferation of unintended effects. The radical transformation of nonhuman life through its exposure to radiation is here imagined as one such unexpected outcome, inflicting a further blow to humanist chauvinism by compromising the human species' supposed position as an apex predator. As Dr. Medford, the film's representative of scientific reason puts it, the ascendancy of radioactive ants raises the prospect that 'man as the dominant species on the planet will be extinct in a year's time.'

⁴⁰ *Godzilla*, dir. by Ishirō Honda (Toho, 1954).

⁴¹ *Them!*, dir. by Gordon Douglas (Warner Bros., 1954).

⁴² Booker, *Monsters, Mushroom Clouds and the Cold War*, p. 143. It is worth considering how far this unremitting hostility to the monstrous inhuman might be a product of specifically American Cold War attitude towards securitisation and control, and whether this refusal to entertain the possibility of an ethical obligation to the nonhuman other might not be upheld in other national cinemas. *Godzilla*, for example, problematizes the drive towards extermination which is so uncritically reproduced in *Them!* While *Godzilla* is finally put down, the scientist who delivers the killing blow drowns himself in an act of sacrificial solidarity with the monster.

⁴³ Shurcliff, *Operation Crossroads*, p. 108.

Alongside the atomic weapons program, *Them!* implicates contemporary technologies for managing nature in the proliferation of inhuman threats to human supremacy. Early in the film, while police investigate a site destroyed by ants, a radio broadcast can be heard in the background in which representatives of the World Health Organisation – an institution representing the postwar internationalisation of biosecurity – announce the imminent eradication of malaria and other diseases. Anticipating Rachel Carson’s *Silent Spring* by eight years, this passing reference to the ascendancy of insecticides in the postwar period establishes a series of equivalences between the global management of biosecurity (insecticides as a weapon against zoonotic disease), the turn to intensive agriculture (facilitated by the blanket spraying of pesticides), and the development of a nuclear deterrent. These stratagems of biosecurity share a common institutional context, as Carson would later point out when she noted the entanglement of research into pesticides and military development.⁴⁴

All of these practices adopt a biopolitical approach to managing the security of human populations, whether through eradicating insect life that poses a risk of contagion, through ensuring an over-abundance of food to help increase the rate of social reproduction (and here we should note that the film’s key character Dr. Medford is employed by the Department of Agriculture), or through fortifying the state’s offensive capabilities in order to intimidate geopolitical rivals. *Them!* seems to suggest that the anthropocentrism of these strategies – the way that they see nonhuman life narrowly as an irrelevance or as an impediment to human biosecurity – neglects to account adequately for the possibility of nonhuman agency; an agency which is strengthened (or at least rendered less predictable) by the uncertainties initiated by the nuclear program.

This entanglement of nuclear technology, risk and nonhuman agency was reproduced in a number of contemporaneous films. A post-atomic update of *King Kong*, Eugène Lourié’s *The Beast from 20,000 Fathoms* (1953) begins with a nuclear weapons test in the Arctic.⁴⁵ The blast rouses a dinosaur from its millennia-long hibernation beneath the ice, and the Beast travels south from the Arctic to threaten the people of New York before being put down by the military. Nuclear risk here again takes the form of an inhuman danger which the calculations of the military scientists have been unable to anticipate. If the nuclear narrative of the Cold War states (of Eisenhower in “Atoms for Peace”, for instance) imagined nuclear power as an extension of a generalised power over nonhuman nature in the service of a prosperous domesticity, it also imagined its domestication of the atom as the postwar *telos* of a broader process of

⁴⁴ Carson’s attentiveness to the relationship between militarism and biosecurity is well-documented in Joni Seager’s *Carson’s Silent Spring: A Reader’s Guide* (London: Bloomsbury, 2014), especially pp. 23-66.

⁴⁵ *The Beast from 20,000 Fathoms*, dir. by Eugène Lourié (Warner Bros., 1953).

modernisation and development through technology. As Sherryl Vint has pointed out, these developmental processes exact a toll on nonhuman life:

Animals, once central to human quotidian life, have steadily disappeared from human experience with the rise of modernity, whose processes of industrialisation, urbanisation and commodification have affected animal lives as much as human ones.⁴⁶

Modernity, then, can be understood (at least in part) as a process of purification in which the forces of historical and technological development cleanse animal life from those spaces which are most intimately associated with the work of modernisation (most notably the city). In *The Beast from 20,000 Fathoms*, this process of development comes violently undone. The unlikely encounter between the saurine Beast – a ‘prehistoric monster’ – and the exemplary modernity of nuclear weapons technology, sets the stage for an unravelling of the modern by nonhuman forces. The film’s narrative progression stages the developmental schema of modernity, as the Beast travels from uninhabited spaces (the Arctic wilderness) to marginal, semi-developed locations along the North American coast, to the symbolic centre of modernity: New York, the international cosmopolitan city. Nuclear power therefore threatens to undo the work of purification through which modernity cleanses its self-image and its exemplary spaces of the trace of the nonhuman. In *The Beast*, modernity appears as contingent and precarious, based upon the domestication of technology and the abjection of nonhuman agency, each of which are susceptible to catastrophic failure.

Despite their staging of the precarities and limitations of agency that inhere in the nuclear project, both of the nuclear science fiction films discussed remain committed, in the final analysis, to the defence of human sovereignty against inhuman risk. *Them!* concludes with an orthodox humanist flourish: martial law is imposed and the military destroy the radioactive ant queen and her nest. We are reassured that human agency through technology, security and social organisation can triumph over any nonhuman threat. Similarly, in *The Beast from 20,000 Fathoms*, the military finally destroy the Beast using a special radioactive weapon; a gesture towards the ambivalence of the nuclear as both a promise of salvation and a possible source of dissolution. I want to turn now to a genre which necessarily refuses the consolations of technological agency and the possibility of salvation: the post-apocalyptic novel. In reading John Wyndham’s *The Chrysalids*, I am interested in the way in which the post-apocalyptic situation necessarily reframes the themes of technology, agency and species difference. Wyndham’s novel leaves behind the technical questions with which we have so far been concerned (‘how might we mitigate nuclear risk?’) and turns instead towards more political questions. *The Chrysalids*

⁴⁶ Sherryl Vint, *Animal Alterity: Science Fiction and the Question of the Animal* (Liverpool: Liverpool University Press, 2010), p. 1.

asks how the disruptive forces of nuclear energy undo received concepts of species difference, and what this might mean for attempts to form political communities along species lines.

'Blessed Be the Norm': Genetic Communities and Humanist Political Solidarity

Published in 1955, *The Chrysalids* is set in Waknuk, Labrador, close to the Canadian Arctic. A global nuclear conflict, which is dimly remembered by the inhabitants of Waknuk as the 'Tribulation', has transformed Labrador from a marginal, inhospitable space into a temperate and fertile land suitable for cultivation. In keeping with the fears of dissolution and the reversal of processes of modernisation which haunt the nuclear imagination, the people of post-apocalyptic Labrador inhabit small agrarian communities that are regulated by an inflexible Abrahamic faith; a mode of social organisation more closely associated with the European Middle Ages than the capitalist 1950s. The modern city exists as a spectral trace in the novel. An obscure memory, or perhaps a wished-for inheritance, the image of the city appears in the dreams of Wyndham's protagonist David, to whom it is quite unintelligible. In David's modest village, there is no equivalent to the 'carts running with no horses to pull them', or to the 'things in the sky, shiny fish-shaped things that certainly were not birds' (p. 5) that he sees in his sleep. If modernity is thoroughly post-domestic—if, that is, modernity has successfully cleansed its exemplary spaces of the traces of animal life that were unavoidable in earlier forms of social organisation that were characterised by mixed-species communities—then this is emphatically not the case in David's world.⁴⁷ David lives in the midst of a teeming nonhuman nature, and can represent the sights of the alien city only through their resemblance to the animals with which he is closely familiar.

The agrarian world in which David and his compatriots live, however, is not at all reminiscent of the fantasies of pre-industrial agriculture in harmony with nature that I traced in my chapter on postwar farm narratives. In Waknuk, nature is a site of anxiety, subject to degeneration and dissolution by the legacies of nuclear radiation, and plants and animals that have been visibly touched by radiation are condemned as 'Offences' (p. 18). The Abrahamic faith of David's community preaches that regulating morphological conformity in nature is a duty owed to God – 'Blessed be the norm' (p. 18), as one theological maxim puts it – and this includes human as well as nonhuman animals. Morphologically atypical people are condemned to die, since their bodily form is a perversion of the 'true Image of God' (p. 13), and this exclusionary violence determines the limits of a moral community; 'fellow-feeling for Mutants' is a crime against the

⁴⁷ On the periodisation of human-animal relationships as domestic and later post-domestic, see Richard W. Bulliet, *Hunters, Herders, and Hamburgers: The Past and Future of Human-Animal Relationships* (New York: Columbia University Press, 2005).

integrity of the political community (p. 38). In his enforcement of these purity laws, David's father is more pious than most:

As the sun rose we would sing a hymn while my father ceremonially slaughtered the two-headed calf, four-legged chicken, or whatever other kind of Offence it happened to be. Sometimes it would be a much queerer thing than those... (p. 19)

Post-atomic nature is precisely a site of queer indistinction in *The Chrysalids*; a space of non-identity which confounds the fixity of forms. As the actions of David's father show, however, the semblance of identity is retained through acts of violence. This violence shows something of the contingency of humanist taxonomy: identity is never stable in the novel, but has to be continually reproduced through labour and blood sacrifice.

David's Uncle Axel dissents from the theological imperatives which govern his community. Beyond the boundaries of the settled world, in the Fringes and later the Badlands, morphological variation goes unchecked by the repressive force of theocratic authority. There, Axel points out, "things which are against God's laws of nature flourish, just as if they had a right to" (p. 59). Dissident literatures read by Axel in secret suggest that "deviations, far from being a curse, were performing, however slowly, a work of reclamation" (p. 61). In Axel's account, difference is ontologically given, and it is the labour of enforcing conformity through violence which is revealed as 'unnatural'. Moreover, the codification of a norm which could arrest the play of difference is shown to be fatally compromised by the necessary ethnocentrism of every attempt to specify the parameters of the normal. On his travels as a sailor, Axel encountered many varieties of human and discovered that

most of them – whether they had seven fingers, or four arms, or hair all over, or six breasts, or whatever it is that's wrong with them – think that their type is the true pattern of the Old People, and anything different is a Deviation. (p. 63)

The 'normal' body becomes the norm only through the repression of difference, and through the institution of some local variety as the universal exemplar of its kind. Refusing the imperatives of normalisation leaves only a plurality of bodies which resist identification, as Margrit Shildrick points out: 'It is not that some bodies are reducible to the same while others figure as the absolute other, but rather that all resist full or final expression. The security of categories – whether self or non-self – is undone by a radical undecidability'.⁴⁸ The privileging of 'normal humanity' as the constituent subject of the political community becomes, from this vantage point, a deeply aporetic project, and this indicts ourselves as much as David's father. "For all we can prove," says Axel, "the Old People themselves may not have been the true image" (p. 64).

⁴⁸ Margrit Shildrick, *Embodying the Monster: Encounters with the Vulnerable Self* (London: Sage, 2002), p 2.

As *The Chrysalids* develops, Wyndham obscures the posthumanist implications of his premises by recapturing the problem of difference within a humanist framework. David's peculiar difference is a gift for telepathy, and through the capacity for global communication that this grants him he becomes, as it were, more human than his parochial and repressive peers. David's deviation represents not the erasure but the consummation of political humanism, understood as a faculty for communicative reason; he flees from theologically-sanctioned violence in Waknuk and is rescued by an expeditionary force from the city he encountered in his dreams, the inhabitants of which all communicate telepathically.⁴⁹ I'm less interested in this humanist turn in Wyndham's novel than I am in the more ethically and politically productive work of tarrying with his earlier problematic of unfixable difference. The major political projects of the postwar period involved enfranchising a generic figure of 'the human' as the subject of political representation – in the reorientation towards internationalism and universal human rights, for instance. I have been interested here in how Wyndham, as a writer of speculative fiction in the nuclear moment, turned anxieties of radioactive degeneration and dissolution into a productive thought of difference which undermines efforts to found political communities on just these concepts of 'normal' human subjectivity. In my final chapter, I want to develop this question of the relationship between difference – which is always figured as inhuman – and the constitution of political communities in the postwar period.

⁴⁹ On the account of reason as non-instrumental communication, see Jürgen Habermas, *The Theory of Communicative Action*, 2 vols (Boston, MA: Beacon Press, 1984-87).

Universal Humanism and the Limits of Community *'Mere Humanity' and the Question of the Animal*

The term 'humanism' in the singular is unable to capture the vast, heterogeneous set of culturally and historically differentiated ideals, politics, and ontologies that have been subsumed under that title. One of the tasks of this chapter will be to delineate the varying transformations that the idea of humanism – and its corollary, the concept of 'the human' – underwent in various institutional and cultural contexts in the postwar period. My argument is that while one can demonstrate the existence of a postwar crisis of liberal humanism in cultural production, in terms of the institutional history of the period, the transformative 'event' of postwar cosmopolitan internationalism represented the successful institutionalization of humanism on a global scale. The subject of humanism in its various guises (as a subject of rights, as a juridical subject, as 'mere humanity') was reconceptualised in this cosmopolitan turn as a generic universal subjectivity – an avatar of universal humanity against the racist national-particularism of the defeated fascist states. A closer examination of postwar humanism reveals a discourse which is deeply, even constitutively, troubled by the figure of animality; a figure whose position at the threshold of the community of ethical and political subjects marks the limit point of the modern slogan of *fraternité*. In this chapter I aim to illuminate these entanglements of institutional humanism and the question of the animal.

Literary and Institutional Humanisms

The literary culture of the postwar period was marked by a wavering of faith in the liberal humanism of the first half of the twentieth century. Marina Mackay identifies the wartime remarks of Virginia Woolf as an early instance of this loss of confidence. Woolf approvingly cited Lady Astor's identification of 'a subconscious Hitlerism in the hearts of men,'¹ and her pessimism, which emerges in parallel to her reading of Freud, figures fascism as a symptom of the libidinal drive which undoes the civilizing promises of humanism and announces a return to animality: 'If we're all instinct, the unconscious, what's all this about civilization, the whole man,

¹ Virginia Woolf, 'Thoughts on Peace in an Air Raid', in *Selected Essays*, ed. by David Bradshaw (Oxford: Oxford University Press, 2008), pp. 216-220 (p. 217).

&c?'² The period of postwar reconstruction saw the return of a limited optimism, which in Britain was closely associated with the 'New Jerusalem' promised by social democracy. The prevailing sentiment in British literary circles was that this optimism was misplaced. 'Naïve humanisms persisted, [Angus] Wilson and [Iris] Murdoch complained, despite everything modern totalitarianism teaches us about the human capacity for instrumentalizing and brutalising other people'.³ In the cases of Wilson and Murdoch, the task ahead involved not a rejection of humanism, but its renewal through traumatic self-criticism, with literature to play a decisive role through its ability to 'confront rather than avoid what people had shown themselves capable of doing to each other'.⁴

Geopolitical tensions and the increasing importance of technical expertise both contribute to a weakening of literary humanism through the 1950s and '60s. C. P. Snow's *The New Men* (1954) links the work of atomic scientists to a loss of human agency in international politics,⁵ and John Fowles' *The Collector* (1963) sees in the emergence of 'the New People' – that is, the newly affluent, materialist, working class who have benefited from postwar welfare capitalism – the impossibility of liberal subjectivity in the new social order. Fowles' protagonist, the socially isolated and uncultured Frederick Clegg, works as an administrative clerk in local government, a minor bureaucrat whose occupation reflects the expansion of the state in social democracy. He becomes obsessed with Miranda, a young art student who is unaware of Clegg's fixation. On coming into money, Clegg buys an isolated cottage, kidnaps Miranda and installs her in its basement. His personality is marked by a disquieting affective flatness, while Miranda's surfeit of humanist sensitivity is presented as a pompous anachronism in a materialist world. Unable to establish meaningful communication, Clegg allows his captive to die of sickness for fear of her escaping. The transformation which sees humanist subjectivity displaced by technical and bureaucratic calculation is replicated in the domain of aesthetics by a shift from the appreciation of (a now seemingly obsolete) 'serious art' to an acquisitive collection of quasi-aesthetic objects. In *The Collector*, this includes the trappings of semi-affluent modern domesticity ('bits of suburban fuss, phoney antiques, awful brass ornaments') but it also encompasses a new orientation towards the nonhuman world.⁶ Clegg, who is indifferent to

² Diary entry dated December 9, 1939. Virginia Woolf, *A Moment's Liberty: The Shorter Diary of Virginia Woolf*, ed. by Anne Oliver Bell (San Diego, New York and London: Harcourt Brace Jovanovich, 1990), p. 464.

³ Marina Mackay, 'World War II, the Welfare State and Postwar "Humanism"', in *The Cambridge Companion to the Twentieth-Century English Novel*, ed. by Robert L. Caserio (New York: Cambridge University Press, 2009), pp. 146-162 (p. 158).

⁴ Ibid.

⁵ C. P. Snow, *The New Men* (Kelly Bray: House of Stratus, 2001 [1954]). On Snow and humanism, see Alan Sinfield, *Literature, Politics and Culture in Postwar Britain* (Berkeley and Los Angeles: University of California Press, 1989), p. 97.

⁶ John Fowles, *The Collector* (London: Vintage, 2004 [1963]), p. 125.

Miranda's attempts to introduce him to contemporary art, is an avid collector of butterflies. This disposition is by no means a mode of affective engagement with nature; rather, nonhuman life appears as a series of 'specimens' to be arranged in a taxonomic practice which reflects the bureaucratic character of mass society.

While it is one of the premises of Fowles' novel that the new culture marked the impossibility of both humanist subjectivity and a non-instrumental relation to the nonhuman world, it does not follow that the persistence of humanism in certain areas of postwar society underwrote a more ethically responsive orientation to nature. If postwar literary culture was suspicious of humanism (or at least, as with Fowles, conscious of it as an anachronism), in a global political context humanism underwent an unprecedented institutionalisation; a process that saw the transformation of one concept of 'the human' from the regulative ideal of European modernity into the universal subject of the new global order. In this chapter I want to explore this vigorous institutionalization of humanist principles in the years that followed the end of the war. My aim is to show that the turn towards universal humanism, which characterised the work of supra-national organizations such as the United Nations and its affiliates, always depended on the simultaneous abjection and silent retention of the concept of the nonhuman, with disastrous effects for actually existing nonhuman animals.

I begin with an analysis of how the figure of universal humanity was constituted in the discourses of political internationalism. I argue that the cosmopolitan turn towards universality relies on a concept of the universal which is founded on a repression of nonhuman subjectivity. The concept of universal human rights, which is institutionalised globally for the first time in this period, is likewise troubled by an ambivalent relation to animality, riven as it is by a constitutive tension between the 'ideal' subject of rights (a rational, autonomous agent) and its practical orientation towards 'mere humanity'; that is, its location of ethical standing in the fact of one's biological membership of the human species, where divisions between human and nonhuman become most plainly problematic. I turn to literature with a view to assessing the relationship between imaginative representations of universal humanity and the ontological and political work of institutional humanism. I find a provocative interlocutor in Ursula Le Guin, the feminist writer who is most associated with 'soft' or anthropological science fiction, but whose fictional worlds call the *anthropos* of anthropology into question. I read her novel, *The Left Hand of Darkness*, as a semi-utopian vision of inter-stellar (trans-)humanity that expresses the optimism of the postwar turn towards universality, even as it explodes the notion of a uniform human subject which anthropocentric cosmopolitanism demands.

Anthropocentric Universality and the Cosmopolitan Turn

The ideal of universality, which had been moribund in the humanities following postmodernist and postcolonial critiques of its supposed Eurocentric, exclusionary logic, has seen a recent revival in the works of Marxist philosophers Slavoj Žižek and Alain Badiou. In their contributions to political theory, Žižek and Badiou argue that the centrality of the category of difference that had characterised the theoretical debates of the 1980s and 90s afforded an inadequate foundation for the theorization of political subjectivity. Badiou's return to St. Paul attempts to rediscover a principle of universality and thereby extricate the subject of politics from her entanglement in multiple differences: 'Paul's unprecedented gesture consists in subtracting truth from the communitarian grasp, be it that of a people, a city, an empire', and so establishing the possibility of the universal.⁷ For Žižek and Badiou, in an era where the increasingly global reach of neoliberal capitalism imposes its logic universally, the ideal of universal (communist) subjectivity must be rehabilitated as the only conceivable agent of resistance to capital.

The *aporias* of this project can illuminate the theoretical and political limitations of the last global turn towards universal subjectivity in the years following the Second World War. As Matthew Calarco has noted, Žižek and Badiou's 'concern for the abject and the universal never extends beyond a simple and rather uncritical anthropocentrism'.⁸ In their efforts to rehabilitate universality, the concept of the universal is hastily conflated with the condition and limitations of human subjectivity. It is as though the category of the universal can only come to contain positive contents through the exclusion of that which is held to be (for whatever reason) beyond its purview, and the pervasive humanism and anthropocentrism of these formulations of universality strongly militates for the identification of this excluded remainder with the nonhuman in general, and nonhuman animals in particular. The questions which organise my investigation are these: To what extent do claims to universality depend on an act of constitutive exclusion? How far, and in what ways, does the figure of the nonhuman fulfil this function in the institutional and political context of the postwar period? What happens to infra-human difference and inter-species difference in this process? And how far can speculative literatures provide alternative ways of conceptualising the relations between universality and species membership?

⁷ Alain Badiou, *Saint Paul: The Foundation of Universalism*, trans. by Ray Brassier (Stanford: Stanford University Press, 2003), p. 5.

⁸ Matthew Calarco, *Zoographies: The Question of the Animal from Heidegger to Derrida* (New York: Columbia University Press, 2008), pp. 9-10.

Attempts to theorize universality have frequently had recourse to a rhetoric of animality, in two senses. In the first, more heterodox sense, the animal can be an avatar of the universal through its indifference to the particularities of human orderings and identities. In *A Sand County Almanac* (1949), the conservationist Aldo Leopold offers a typical example of this rhetorical strategy which locates a point of resistance to the violent nationalisms of the first half of the twentieth century in the irrelevance of political geography to migratory birds:

It is an irony of history that the great powers should have discovered the unity of nations at Cairo in 1943. The geese of the world have had that notion for a longer time and each March they stake their lives on its essential truth.⁹

This ambiguous image expresses the difficulties faced by humanist ontologies in theorizing the universal across the gap (which is presumed to be actual and insuperable) between nature and culture. It is not so much that the geese themselves are universal cosmopolitan subjects who transcend the particularity of nationalism; rather it is that, as nonhumans, the geese are excluded from culture (and thus from the *ethnos* of ethnicity and nationhood). From this perspective, animals can be admired for their indifference to the particularisms of human identity while remaining in a position of constitutive exteriority with respect to the universal, from which they remain excluded by the abyssal ontological difference between human and nonhuman. As is so often the case in our culture, animals function primarily as *symbols* for a universality which reveals itself to be conservatively and familiarly anthropocentric.

In the second sense, nonhuman animals are figured in more negative terms as that which is abject or excluded from the universal; as that which is mute, wholly biologically determined and subject to 'noncriminal putting to death' (to use Jacques Derrida's term), in contradistinction to a liberal subject understood as linguistic and autonomous, and whose killing amounts to *homicide*.¹⁰ My emphasis on killing here is meant to underscore the empirical violence done to those who are excluded from the universal – a violence which in Derrida's analyses is foundational to what he has called the carno-phallogocentric structure of humanist subjectivity – and its corollary, the centrality of *power* in the determination of the limits of the ethical and political community.¹¹ In this connection, Judith Butler has defended the politics of radical queer activism from Marxist universalism, noting that 'when new social movements are cast as so many "particularisms" in search of an overarching universal, it will be necessary to ask how the rubric of a universal itself only became possible through the erasure of the prior workings of

⁹ Aldo Leopold, *A Sand County Almanac* (London: Oxford University Press, 1968 [1949]), pp. 22-23.

¹⁰ Jacques Derrida, "Eating Well," or the Calculation of the Subject', in *Points... Interviews, 1974-1994*, ed. by Elisabeth Weber, trans. by Peggy Kamuf (Stanford: Stanford University Press, 1995), pp. 255-287 (p. 278).

¹¹ *Ibid.*, p. 280.

social power'.¹² From this perspective, it is hardly surprising that our concept of the universal should be predicated on the abjection of animals. The lived experience of animals used for food, clothing and research shows that 'the human-animal distinction constitutes an arena in which relations of power operate in their exemplary purity (that is, operate with the fewest moral or material obstacles).'¹³ As the most structurally and institutionally disempowered group in our societies, the exploitation of animals appears as that which goes without saying; the ideologies of humanism work to render the asymmetrical relations of power between human and nonhuman into a trans-historical fact, and the supposed inevitability of violence against animals becomes an enabling condition which structures our efforts to define the limits of the ethical and political community.

The gesture which expels nonhuman animals from the cosmopolitan community functions both as a limit which marks the edge of the universal, and as a kind of police function which enforces this boundary. In this formulation, the universal is assumed to be coextensive with 'the human', a concept which itself is presumed to be transparent and to name a discrete, clearly bounded object. The critique of the subject that has been elaborated in the critical-theoretical debates of recent decades insists instead that our concept of 'the human' is by no means fixed; that it is a historical production whose presently hegemonic form finds its roots in the discursive practices of Western modernity.¹⁴ Moreover, when this analysis is complemented by a critical attentiveness to the question of species, it becomes clear that one's membership in the human community is something which is *continually* at stake in a variety of political conflicts, behavioural norms and socio-cultural practices (including, ironically enough, practices pertaining to the killing and eating of other animals), such that 'being human is not a given, it is achieved'.¹⁵

The political crises of the first half of the twentieth century (and more specifically, the institutional response to these crises) marked a decisive event in the historical reconstitution of the concept of the human. National-particularism found a bloody apotheosis in the Nazi genocide, and the cosmopolitan turn which forged the international order of the postwar world demanded that the human be refigured against all particularity, in the name of universal

¹² Judith Butler, 'Merely Cultural', *Social Text*, 52/53 (1997), 265-77 (p. 269).

¹³ Anat Pick, *Creaturely Poetics: Animality and Vulnerability in Literature and Film* (New York: Columbia University Press, 2011), p. 1.

¹⁴ For a seminal discussion of the historicity of the concept of the human, see Michel Foucault's analysis of the emergence of the human sciences in *The Order of Things: An Archaeology of the Human Sciences* (New York: Routledge, 2002).

¹⁵ Erica Fudge, *Perceiving Animals: Humans and Beasts in Early Modern English Culture* (Champaign: University of Illinois Press, 2002), p. 10.

humanity.¹⁶ In response to what the Universal Declaration of Human Rights (1948) named as the ‘barbarous acts which have outraged the conscience of mankind’, the turn towards the universal (however anthropocentrically foreclosed) gathered momentum through the increasing influence of supra-national institutions which would supply the regulative ideals of the new humanity.¹⁷ In the words of the German-Jewish-American political theorist Hannah Arendt (herself an embodiment of the new post-national cosmopolitan order), ‘just as the family and its property were replaced by class membership and national territory, so mankind now begins to replace nationally bound societies, and the earth replaces the limited state territory.’¹⁸

Of decisive significance in the postwar reconstitution of ‘the human’, the Nuremberg trials which sought to prosecute Nazi leaders represented the emergence of universal humanity as a juridical subject. Under the rubric of ‘crimes against humanity’, the legal aspirations of humanist universality were given institutional expression for the first time. As the Arendtian Robert Fine has claimed, ‘the institution of crimes against humanity at Nuremberg in 1945 was an event that marked the birth of cosmopolitan law as social reality’.¹⁹ Following from my discussion of the exclusionary logic of anthropocentric universalism, I want to elaborate the particular form of cosmopolitan subjectivity that emerges in this period.²⁰ The concept of the human that is institutionalised after the war has its roots in the Kantian tradition that dates to the emergence of what the Western world has come to know as modernity – a contested concept, to be sure, but one that has always been associated with (or at times even appeared to be synonymous with) the ascendancy of this particular figuration of humanity in terms of *logos*, agency, autonomy, and individual rights. The origin of universal rights in the historically and culturally specific practices of European modernity repeats the obfuscation of power relations which constitutes the universal through an act of repression; in this case on the basis of occidental geopolitical supremacy rather than the human exploitation of the nonhuman world. As we shall see, participants in the debates surrounding the philosophical basis of the Universal Declaration of Human Rights were conscious of the need for (and simultaneously, the impossibility of) a

¹⁶ To speak of the ‘international order of the postwar world’ is perhaps to neglect the precarity and instability of this order. In a certain sense, the discursive reconstitution of universal humanity was interrupted almost at once by the geopolitical tensions of the Cold War so that, for example, the enforcement of universal human rights quickly became impossible. In this chapter, for the sake of brevity, I refer to the ‘ideal’ of postwar cosmopolitan universalism, rather than its somewhat uneven and imperfect practical implementation.

¹⁷ ‘Universal Declaration of Human Rights’, reprinted in Lynn Hunt, *Inventing Human Rights: A History* (New York: Norton, 2008), pp. 223-229 (p. 223). Further references to the Declaration are hereafter given in the body of the text as (UDHR).

¹⁸ Hannah Arendt, *The Human Condition*, 2nd edn (Chicago: University of Chicago Press, 1998), p. 257.

¹⁹ Robert Fine, ‘Crimes Against Humanity: Hannah Arendt and the Nuremberg Debates’, *European Journal of Social Theory*, 3 (2000), 293-311 (p. 293).

²⁰ My analysis in this section is indebted to Gary Steiner’s ‘Toward a Non-Anthropocentric Cosmopolitanism’, in *Anthropocentrism: Humans, Animals, Environment*, ed. by Rob Boddice (Leiden: Brill, 2011), pp. 81-114.

process of inter-cultural translation which could aspire to the condition of (always anthropocentric) universality without erasing the manifold differences between cultures. Despite these anxieties, the cosmopolitan order that emerged in the postwar period was, in many ways, an heir to a specifically Western tradition of political philosophy. For Karl Jaspers and other humanists, Nuremberg and the development of a supra-national political order were evidence that ‘the spirit of Kant and of the eighteenth-century cosmopolitan law was coming to life’, however belatedly, in the years that followed the Second World War.²¹

The basis of this Kantian cosmopolitan subjectivity in the repression of animality demands further elaboration. Kant’s political ontology marks an enabling break between ‘mere humanity’, conceived as human biological life as such, and an ideal humanity founded on the exercise of reason:

In the system of nature, a human being (*homo phaenomenon, animal rationale*) is a being of slight importance and *shares with the rest of the animals*, as offspring of the earth, an ordinary value [...] But a human being regarded as a *person*, that is, as the *subject of a morally practical reason*, is exalted above any price; for as a person (*homo noumenon*) he is not to be valued merely as a means to the ends of others or even to his own ends, but as an end in himself.²²

It is this latter condition – the location of human value in the capacity for *logos* – that forms the requirement for membership in the universal community of subjects in the eighteenth-century tradition of cosmopolitan humanism. In this schema, the animal is abjected as *aloga* – a mute, pre- or non-rational materiality that is constitutively unable to be inscribed within a political community, lacking as it does the linguistic and cognitive capacities to participate in the transactional process of establishing the ethical and political norms which could link the members of a given community with one another. The political-rational subjectivity which establishes ‘properly human’ personhood is distinguished not only from nonhuman forms of life, but also from those aspects of human existence which are ‘share[d] with the rest of the animals’. In this sense, Kantian cosmopolitan humanism functions as what Giorgio Agamben has described as an anthropological machine, which ‘functions by excluding as not (yet) human an already human being from itself, that is, by animalising the human, by isolating the nonhuman within the human’.²³ With this dissociation of ‘mere’ biological life from political life, it becomes conceivable (from a certain ethnocentric point of view which takes one’s own proximate community to be exemplary political subjects) to exclude not only animals, but also marginal human populations from the universal.

²¹ Fine, ‘Crimes Against Humanity’, p. 295

²² Immanuel Kant, cited in Steiner, ‘Towards a Non-Anthropocentric Cosmopolitanism’, pp. 87-88.

²³ Giorgio Agamben *The Open: Man and Animal*, trans. by Kevin Attell (Stanford: Stanford University Press, 2004), p. 37.

From this perspective, one of the crucial attempts to restore the victims of the Nazi genocide to full humanity can be seen to replicate the biopolitical logic that first exposed them to the immunitary violence of fascist communitarianism. In the aftermath of the Nuremberg Trials – which, as we have seen, were a key site of postwar humanist regroupment, establishing universal humanity as a juridical subject – legislative efforts were made to restrict biomedical experimentation on humans. In parallel to the second trial at Nuremberg (the so-called ‘Doctors’ Trial’), the Nuremberg Code was mapped out as an international regulatory framework for medical research ethics, with a view to proscribing the kind of experimentation on unconsenting humans that had been performed by Nazi doctors in the camps. The Code, which carried no legal force on its own, but which became the model for numerous national laws (including in the United States), mandated that all experimental trials should be performed on nonhuman animals before bringing drugs to market. In addition, all human trials must be preceded by animal experiments, and any experimental trial on humans ‘should be so designed and based on the results of animal experimentation and a knowledge of the natural history of the disease or other problem under study that the anticipated results will justify the performance of the experiment.’²⁴ As Greek *et al.* point out, ‘This principle is predicated on the assumption that the animal experimentation will have predictive value for the efficacy of the ultimate experimentation on humans’, or in other words, that at the level of *zoē* or biological life, humans and nonhumans are sufficiently similar as to be substantially interchangeable.²⁵ With this severance of *zoē* and *bios*, and the concomitant licensing of violence against the former, the postwar turn towards cosmopolitan humanism in medical ethics thus recapitulates what Giorgio Agamben has identified as the founding gesture of modern biopolitics, a gesture which would, ironically, find its apotheosis in the Nazi death camps.²⁶ Rather than undermining the conceptual bases of the distinction between *zoē* and *bios*, or rendering it inoperative, the humanist response to biopolitical violence reproduces the distinction anew. The logic of constitutive exclusion, which had formerly taken place at the level of ‘race’, is now revisited at the level of species; in both cases, the universal is underwritten by the deaths of those who fall outside the limits of community.

The ideal form of cosmopolitan subjectivity, which holds *logos* and *bios* to be the proper marks of universal humanity, continued to function as a kind of regulative ideal in cosmopolitan internationalism. Increasingly, however, it came under pressure in the postwar period from

²⁴ *Trials of the War Criminals Before the Nuremberg Military Tribunals*, 15 vols (Washington D.C.: U.S. Government Printing Office, 1946-49), vol 2, p. 182.

²⁵ Ray Greek, Annalea Pippus and Lawrence A. Hansen, ‘The Nuremberg Code Subverts Human Health and Safety by Requiring Animal Modelling’, *BMC Medical Ethics*, 13.16 (2012), 1-17 (p. 2).

²⁶ Giorgio Agamben, *Homo Sacer: Sovereign Power and Bare Life*, trans. by Daniel Heller-Roazen (Stanford: Stanford University Press, 1998). See especially pp. 4, 9-10, 119-88.

attempts to locate the basis of rights in membership of the human species without further qualification. What is absolutely decisive for the postwar reconceptualization of the human is that, far from being abjected as mere biological life, human biology (apprehended through contemporary research in genetics) now became the basis on which rights were to be conferred. A break with classical rights discourse is announced in the innovation of the ‘new rights’, which orient themselves towards biological life as such through the linking of the traditional guarantee of human dignity to social welfare, health and security. In the next section, I analyse the implications of this biological turn, arguing that it represents a substantial complication of the relations between rights and species that had previously obtained in the humanist tradition.

New Rights and Old: ‘Mere Humanity’, Social Reproduction and the Affective Foundations of Rights

‘All humans are born free and equal in dignity and rights’

—Universal Declaration of Human Rights

The Universal Declaration of Human Rights – the drafting of which represented the decisive event in the postwar refiguration of the human – locates rights in one’s membership of the human *species*. In Article One of the Declaration, all biological humans become bearers of universal rights by virtue of birth alone. Disregarding the qualified humanity of Kantian political subjectivity, ‘mere humanity’ emerges as the universal subject of the postwar period.²⁷ The tension between mere humanity and political life (or, to use Giorgio Agamben’s terms, between *zoē* and *bios*) is written in to the Declaration’s first article, which begins by underscoring the centrality of birth but immediately affirms that humans are ‘endowed with reason and conscience, and should act towards one another in a spirit of brotherhood’ (UDHR, p. 223), or in

²⁷ It should be noted that the location of rights in birth has a pre-history that is beyond the scope of this essay, and that the history of this relation between biological humanity and political rights closely follows the history of modern political subjectivity. As Giorgio Agamben has noted in relation to the French republican tradition, this tension between the concept of the citizen and mere humanity inheres ‘in the ambiguity of the very title of the 1789 *Déclaration des Droits de L’Homme et du Citoyen*, in which it’s unclear whether the two terms are to name two distinct realities or whether they are to form, instead, a hendiadys in which the first term is actually always already contained in the second’; ‘Beyond Human Rights’, in *Means Without End: Notes on Politics*, trans. by Vincenzo Binetti and Cesare Casarino (Minneapolis: University of Minnesota Press, 2000), pp. 15-26 (p. 20). The postwar iteration of this conceptual ambiguity is differentiated from its predecessors in two decisive ways: firstly, in the transnational scope of its application, which for the first time made its universalising aspirations appear as an institutional reality; and secondly, as we shall see presently, in the increasing inclusion of biological life as a surface upon which rights act (in the ‘new rights’ of social welfare, for example), in addition to its function as a condition for possessing rights.

other words, that paradigmatic humans are rational ethico-political subjects, and that these faculties found the universality of 'brotherhood'. Universal rights, then, are founded in this ontologically imprecise space between *zoē* and *bios*, where a discourse of species seeks to underscore an ethically decisive human exceptionalism even as the exceptionality of the human is problematized by the indispensability of biological life in the determination of rights.

As with the concept of the human in general, human biological life is never simply a given; rather, it is apprehended through various discursive practices which constitute the objects they seek to define. In conjunction with the drafting of the Universal Declaration, the United Nations Educational, Scientific and Cultural Organization (UNESCO) established a symposium in which intellectuals could debate the philosophical foundations of human rights. This symposium sought to establish a minimal definition of rights and the human by appealing to the technical expertise of philosophers, political scientists, anthropologists and (what is decisive here) biologists. R. W. Gerard's contribution, 'The Rights of Man: a Biological Approach', claims that the task of scientific expertise is to 'approach the problem of human rights and duties as a special case of the problem of part and whole, as best exemplified by living organisms'.²⁸ This conception of rights is immediately complicated by its analogical method. In Gerard's argument, it is precisely through the analogy of human with nonhuman life that the concepts necessary to delimit rights become available. If post-Darwinian biology necessarily problematizes the exceptionality of humans in nature, it becomes hard to see how the human species can be taken as a 'special case' whose separation from the other 'living organisms' constitutes an ontological break which would allow for the invention of political facts (that is, rights) which are nonetheless emphatically denied to 'the animal'.

In *Frames of War*, Judith Butler makes a similar argument as a contribution to recent debates surrounding grief, ethics and humanism.

It does not ultimately make sense to claim, for instance, that we have to focus on what is distinctive about human life, since if it is the 'life' of human life that concerns us, that is precisely where there is no firm way to distinguish in absolute terms the *bios* of the animal from the *bios* of the human animal. Any such distinction would be tenuous and would, once again, fail to see that, by definition, the human animal is itself an animal.²⁹

Butler's claim here underscores the difficulty of grounding political facts (which are held to pertain only to the human species) in biological life. In spite of the critique of anthropocentrism which she elaborates throughout *Frames of War*, it is suggested that the distinction between mere life and political life (however thickened and complicated) remains ontologically sound

²⁸ R. W. Gerard, 'The Rights of Man: A Biological Approach', in *Human Rights: Comments and Interpretations*, ed. by Jacques Maritain (London: Allan Wingate, 1949), pp. 205-209 (p. 205).

²⁹ Judith Butler, *Frames of War: When Is Life Grievable?* (London: Verso, 2009), p. 19.

and ethically necessary. Throughout this thesis, I have suggested that the overcoming of human exceptionalism demands a transformation of our conceptual language, such that these distinctions would be placed under erasure. While Butler concedes that ‘the human animal is itself an animal’, and grants that this complicates both classical humanism and attempts to locate rights in biological life, her terminology betrays a residual commitment to human exceptionalism when she claims that ‘animality is a precondition of the human’.³⁰ In my analyses, a thoroughgoing rejection of anthropocentrism demands the recognition that human animality is not anterior to humanity proper; it is not a substrate upon which humanity is erected; rather, human animality is coextensive with humanity as such. In this light, those aspects of human behaviour that are conventionally apprehended as ‘proper’ to humanity (political life, linguisticity, the cultivation of aesthetics and other cultural practices) are not distinguished ontologically from those aspects which are figured as animal (eating, desire, aggression).

Viewed from a certain angle, this position resembles a strong naturalism. I would claim instead that it represents the conceptual undoing of naturalism, insofar as that concept derives its customary force by its distinction from what is variously figured as ‘culturalism’, constructionism and other positions which assert the primacy of the mediation of our access to the natural by language, cultural practices, or discourse. In my analysis, we can retain the epistemological framework which insists on the mediation of our access to the real (which, it should be added, can no longer be identified with Nature), not because discourse or language represent ontological breaks with the nonhuman world, but because they are potentialities of the kind of animal that we are.³¹

In this sense, it is possible to escape the ‘biological’ reductionism of evolutionary psychology and sociobiology, which disavow the social or discursive structuration of knowledges in favour of evolutionary explanations. Sociobiology relies on a tacit acceptance of the premises of human exceptionalism, retaining as it does the identification of desire and consumption with animality while elevating these motives to all-embracing explanatory principles. This method severely underestimates the capacity for emergent behaviour in animals (including human animals), and

³⁰ Butler, *Frames of War*, p. 19.

³¹ A further qualification must be made. In order to oppose metaphysical anthropocentrism, the limits of a discourse-oriented ontology must be made clear. While it remains necessary (for a variety of political and ethical exigencies) to rigorously theorize the mediation of the real by discourse, this project can only ever be a regional ontology of the relation between the real and (what we call) the human animal, and should by no means be taken to exhaust the ontological as such. A heterogeneous field of ontological relations exist beyond the purview of this (necessary and critically aware) methodological anthropocentrism, and remain for the most part untheorized. On the relationship between object-object relations and post-Kantian philosophy, see the work of Graham Harman, especially *Tool-Being: Heidegger and the Metaphysics of Objects* (Chicago: Open Court, 2002).

struggles to account for altruism and the emergence of ethical practices throughout the nonhuman world.³² From a post-anthropocentric perspective, it makes little sense to consider ‘the animal’ as something which is wholly immanent to its environment (‘like water in water’, to use Georges Bataille’s phrase)³³ while insisting that ‘the human’ (which always escapes its ‘mere’ animality) either transcends the natural or, more negatively, is alienated from its world by mediating structures. We must insist instead that the varieties of mediation (whether linguistic, discursive, historico-cultural, etc.) are never simply a break with nature; that they are everywhere founded on (in fact, identical with) our animality, which is far more flexible than sociobiology allows.

* * *

If, in the postwar period, biological humanity became the basis upon which ‘universal’ rights were to be conferred, it also became (in a historical innovation) the surface upon which rights act. The rights most closely associated with political modernity were for the most part concerned with the negative freedoms that are conventionally held to be proper to the autonomous liberal subject. Thus, in the *Declaration of the Rights of Man and Citizen* (1789), ‘the natural and imprescriptible rights of man’ are ‘liberty, property, security and resistance to oppression’.³⁴ In this connection, it is worth considering how the universality claimed by rights discourse is called into question by its evident subjection to historical forces. In the years between 1789 and 1945 (and with particular force in the years following the First World War), the early, formally negative freedoms of bourgeois modernity were challenged by the emergence of positive freedoms (the so-called ‘new rights’) which were oriented towards the biological life of the human species.

As E. H. Carr’s assessment makes clear, rights in this sense are not transhistorical givens, but are subject to historico-political contingencies. In his address to the UNESCO human rights symposium of 1947, Carr points out that ‘the modern conception of the rights of man may perhaps be associated (though also not exclusively) with the Russian revolution and is *economic and social as much as political*’.³⁵ This turn towards social welfare was instantiated in Article 22 of the Universal Declaration of Human Rights: ‘Everyone, as a member of society, has the right

³² There is a vast literature on this subject. Of particular significance are Marc Bekoff and Jessica Pierce’s *Wild Justice: The Moral Lives of Animals* (Chicago: University of Chicago Press, 2009) and Frans de Waal’s *Good Natured: The Origins of Right and Wrong in Humans and Other Animals* (Cambridge, MA: Harvard University Press, 1996).

³³ George Bataille, ‘Animality’, in *Animal Philosophy: Essential Readings in Continental Thought*, ed. by Peter Atterton and Matthew Calarco (London: Continuum, 2004), pp. 33-36 (p.34).

³⁴ ‘Declaration of the Rights of Man and Citizen’, cited in Lynn Hunt, *Inventing Human Rights*, pp. 221-223 (p. 221).

³⁵ E. H. Carr, ‘The Rights of Man’, in *Human Rights: Comments and interpretations*, ed. by Jacques Maritain (London: Allan Wingate, 1949), pp. 19-23 (p. 19).

to social security and is entitled to realization, through national effort and international co-operation and in accordance with the organization and resources of each State, of the economic, social and cultural rights indispensable for his dignity and the free development of his personality' (UDHR, p. 227).

In his influential analyses of biopolitics, Michel Foucault pointed out that 'modern man is an animal whose politics places his existence as a living being in question.'³⁶ The postwar turn towards social security reflects the extension of the scope of rights to encompass the health of individuals, their general welfare, access to food, water and education – in short, the whole problematic of social reproduction that Hannah Arendt identified with the concept *animal laborans*. (We return once again to Arendt's assessment of the animality of mass society; the development of this trajectory from negative to positive rights in the years between 1789 and 1945 closely parallels the emergence of the working class as a collective political subjectivity, which for Arendt exemplifies the ascendancy of *animal laborans*.) The publication of the Universal Declaration in 1948 afforded institutional recognition of this biopolitics of human life, such that humans are figured increasingly as (to use Nikolas Rose's term) 'biological citizens'.³⁷ The animality of man becomes, in the years of postwar reconstruction, both the condition and the object of rights.

The identification of postwar subjectivity with 'biological citizenship' represents the conceptual dissolution of the classical Kantian subject of rights, compelling the *zoē* of human biological life and the *bios* of citizenship into a paradoxical unity. Without wishing to underestimate the continued importance of the liberal subject as a powerful regulative ideal in universal humanism, we must reckon with the implications (unforeseen by the drafters of the Universal Declaration) of this new proximity of biological and political life for the relations between human and nonhuman. For Alastair Hunt, 'insofar as human rights are located in being human as such' – that is, in unqualified biological species membership – 'then human rights actually turn out to be a weird form of animal rights'.³⁸ Following Hannah Arendt, Hunt's response to this uncomfortable proximity to the animal is to turn towards a human-oriented assertion of the specificity of politics: 'Assuming that rights are hard-wired into one's natural existence as a human being misrecognizes that politics takes form as the artifice of speaking and acting as a member of an organized community'.³⁹ The 'biologistic assumption' which locates rights in human life as such 'abandons [humans] to an animal ontology in principle disarticulated from

³⁶ Michel Foucault, *The Will to Knowledge: The History of Sexuality, Volume 1* (London: Penguin, 1998), p. 143.

³⁷ Nikolas Rose, 'The Politics of Life Itself', *Theory, Culture and Society* 18.6 (2001), 1-30 (p. 21).

³⁸ Alastair Hunt, 'Rightlessness: The Perplexities of Human Rights', *CR: The New Centennial Review*, 11.2 (2012), 115-142 (p. 118).

³⁹ Hunt, 'Rightlessness', p. 127.

the conditions of ethical responsibility and political action.⁴⁰ When this analysis is viewed through the prism of the post-anthropocentric ontology I sketched above, it becomes apparent that this turn from the biological to the political is predicated on a problematic opposition which remains uninterrogated. It is no longer possible to speak of political subjects versus mere humanity, *zoē* versus *bios*, the *logos* of the human versus the pre-rational voicelessness of the animal in general. The ‘artifice of speaking’ is not separated from ‘animal’ somaticity by an ontological break; or if it is, this break cannot be taken as the separation of the human on the one hand and the animal on the other, but rather as one break among many that fractures the ‘heterogeneous multiplicity of the living’ according to the diverse modes of relation to the real which obtain across the nonhuman world.⁴¹

If rights are to be founded on biological life, and if we are to refuse the comforts of a human exceptionalism which dissociates political life from the living in general, we are compelled to affirm Hunt’s assessment of human rights as ‘a weird form of animal rights’. This would mean paying a new attention to the limits of the community of rights-bearers, and in particular (since biological distinctions between human and nonhuman are nowhere decisive) asking why this community should be coextensive with the human species alone.

The theorization of rights, which is so troubled by the never-resolved tension between Kantian subjectivity and biological humanity, also relies on a homologous ambivalence of affect (apprehended as non-rational ‘animal passion’) and calculated rationality. The repudiation of affect in the philosophy of ethics has been well noted in recent work in animal studies. For Cary Wolfe, the understanding of philosophy as ‘mastery, as a kind of clutching or grasping via analytical categories and concepts’ must be replaced by one in which ‘the duty of thinking is not to “deflect” but to receive and even suffer [...] our “exposure” to the world.’⁴² In the first understanding of philosophy, which Wolfe refuses, a metaphysics of subjectivity is at stake; the ‘properly human’ response to an ethical encounter is, it is claimed, to domesticate affect, to subject it to the imperious calculation of the moral agent. To concede to affect a constitutive role in shaping ethical practice is, in this account, to mistake sentiment for reason (which is another way of saying, to mistake animal passion for human *logos*).

⁴⁰ Ibid.

⁴¹ Jacques Derrida, *The Animal That Therefore I Am*, trans. by David Wills (New York: Fordham University Press, 2008), p. 31.

⁴² Cary Wolfe, ‘Introduction: Exposures’ in Stanley Cavell and others, *Philosophy and Animal Life* (New York: Columbia University Press, 2008), pp. 1- 41 (p. 8).

This logic returns in postwar universal humanism through the efforts of UNESCO to systematize rights on an intellectual basis. I take the UNESCO *Comments and Interpretations* symposium on human rights to exemplify this process, which continued in the years following the war through the production of technical documents intended to intellectually fix the concepts of ‘right’ and ‘the human’. This highly schematic approach to ethical and political life is, I would suggest, a strategy which enables the disavowal of the originary basis of the idea of rights in affective exposure to suffering. Lynn Hunt, a historian of human rights, claims that rights can be apprehended neither as transhistorical universals nor as a schema imposed by the work of autonomous reason. In Hunt’s account, the idea of rights emerges instead as a historically bound event whose condition is the growth of new forms of public affective relationality in modernity (most crucially, the development of a reading public and a popular literary culture). The literary historian Ian Watt has linked the ascendancy of the novel form to the emergence of modern bourgeois individualism, and Hunt’s analyses extend this insight to the origin of rights and political universality.⁴³ The novel allows for the construction of communities of ‘imagined empathy’ based on the mutual recognition of individual, self-possessing persons, the archetype of which is the fictional protagonist who by definition cannot be known to the reader personally, yet who becomes an ethical and affective point of identification with other humans in general.⁴⁴ Owing to the range of identificatory opportunities and affective investments it makes possible, literary production becomes not merely a symptom of social and political transformation, but an active force in shaping it. In this analysis, literary modernity is coeval with the concept of the ‘human in general’, and our identification with this figure (which is fundamentally aesthetic-affective rather than cognitive-rational) provides the foundation for universal rights.⁴⁵

The displacement of the affective basis of ethico-political practice by instrumental reason becomes, in certain analyses, a potent means of making sense of the crises of the twentieth century. As Ashis Nandy relates, ‘by the early fifties it was clear to many that fascism was a typical psychopathology of the modern world, for it merely took to logical conclusions what was central to modernity, namely the ability to partition away human cognition and pursue this

⁴³ Ian Watt, *The Rise of the Novel*, 2nd edn (Berkeley: University of California Press, 2001).

⁴⁴ Lynn Hunt, *Inventing Human Rights*, p. 32.

⁴⁵ We could also ask why or whether these forms of rights-engendering ethical identification, mediated by the novel form, were restricted in principle to human others, and how these same processes of identification impacted animal ethics. The close link between Anna Sewell’s *Black Beauty* (New York: Penguin, 2011) and the emergence of horses as (albeit limited) juridical subjects in contemporary animal welfare law suggests that the modes of affective relations created in literary representation can build ethical communities across species boundaries.

cognition unbridled by emotional or moral constraints.⁴⁶ This position opposes Max Horkheimer's assertion that fascism is characterised by a surfeit of affect.⁴⁷ Both positions demand the mobilisation of a certain concept of the human/animal distinction, linking either an excess of affect (Horkheimer's 'revolt of nature') or a poverty of affect (Nandy's hegemony of the cognitive) to the condition of inhumanity.

In addition to determining the limits of political and ethical communities on the basis of (what the vocabulary of humanism determines to be) a sentimental abrogation of 'properly human' reason, the function of affect as the silent precondition of ethical discourse has the further effect of undermining rights' pretence to universal, transhistorical applicability. As Lynn Hunt points out, 'rights cannot be defined once and for all because their emotional basis continues to shift, in part in reaction to declarations of rights'.⁴⁸ Hunt's point gestures towards (without fully recognising) the performative character of the act of declaration, which, through its ability to establish new communities of affective relations, can produce new concepts of rights (and new subjects of rights) in ways that cannot be anticipated. My claim here is that 'the human', as it emerged in the years following the Second World War, is as much a product of the Universal Declaration as its presupposition. I turn my attention now to the concept of 'brotherhood' which is foundational to Article One of the Universal Declaration, and to postwar universal humanism more broadly. My questions are these: If the declaration recognises the 'inalienable rights of all members of the human family' (UDHR, p. 223), how far does this discursive mobilisation of the 'human family' produce the object it seeks to describe? What does this homogenizing gesture do to the manifold differences between human cultures? How is this ideal of kinship linked to empirical violence in a decolonizing world? And how is this play of identity and difference articulated against the figure of the animal?

Infrahuman Difference and the Production of the Human

In January 1955, Edward Steichen's exhibition *The Family of Man* opened at the Museum of Modern Art in New York. A collection of the work of 273 individual photographers from 68 countries, the exhibition became an extraordinarily popular international event. The Museum of

⁴⁶ Ashis Nandy, 'Modern Science and Authoritarianism: From Objectivity to Objectification', *Bulletin of Science, Technology and Society*, 17.1 (1997), 8-12 (p. 9).

⁴⁷ Max Horkheimer, *Eclipse of Reason* (London: Continuum, 2004), pp. 79-83.

⁴⁸ Lynn Hunt, *Inventing Human Rights*, p. 29.

Modern Art's International Program arranged for the exhibition to tour thirty-seven countries,⁴⁹ and in this way the exhibition's mode of circulation echoed the subject it sought to represent: the universality of human experience (what Steichen called 'the essential oneness of mankind throughout the world').⁵⁰ *The Family of Man* therefore attempts to represent 'the human family' posited by the UDHR as an undifferentiated universal subject. Its rhetorical and political function is best understood as an aesthetic contribution to the imperative within postwar humanism to establish the identity of all humans.

In the course of the international circulation of these images (which was meant to confirm a human identity which transcends local particularity), the demands of hosting the exhibition in various galleries across the world meant that the curators were immediately confronted with the irreducible specificity of cultural difference. Roland Barthes' contemporary commentary points out that in Paris, Steichen's collection was exhibited under the title *The **Great** Family of Man*. The original name, which could 'pass for a phrase belonging to zoology', is transformed in the French Republic (whose emergence as a polity is coeval with the ideal subject of modern European humanism) into a title befitting the special dignity of the humanist subject.⁵¹ This anxious nomenclature recalls the ambiguous tension between biological life and Kantian subjectivity in rights discourse and political cosmopolitanism, and the photography plainly struggles to articulate a universal identity of humanity which is clearly differentiable from the 'inhumanity' of *zoē*. Much of the putatively universal human behaviour documented in *The Family of Man* concerns precisely those 'biological' aspects of human behaviour which official humanism denigrates, and we are presented with page after page of representations of aspects of global human reproductivity, understood in a broad sense as encompassing desire, childbirth, and the production and consumption of food.⁵²

While Barthes is by no means committed to the classical humanism implicit in the qualification *Great Family of Man*, he is equally wary of Steichen's preoccupation with biological humanity. In his assessment, the exhibition's primary representational strategy is 'an eternal lyricism of birth' that produces a politically objectionable conflation of historical with natural facts.⁵³ Barthes' Marxist commitment to 'semioclasms' takes particular issue with the exhibition's universalization of wage labour, and this anti-materialist, anti-political character of *The Family*

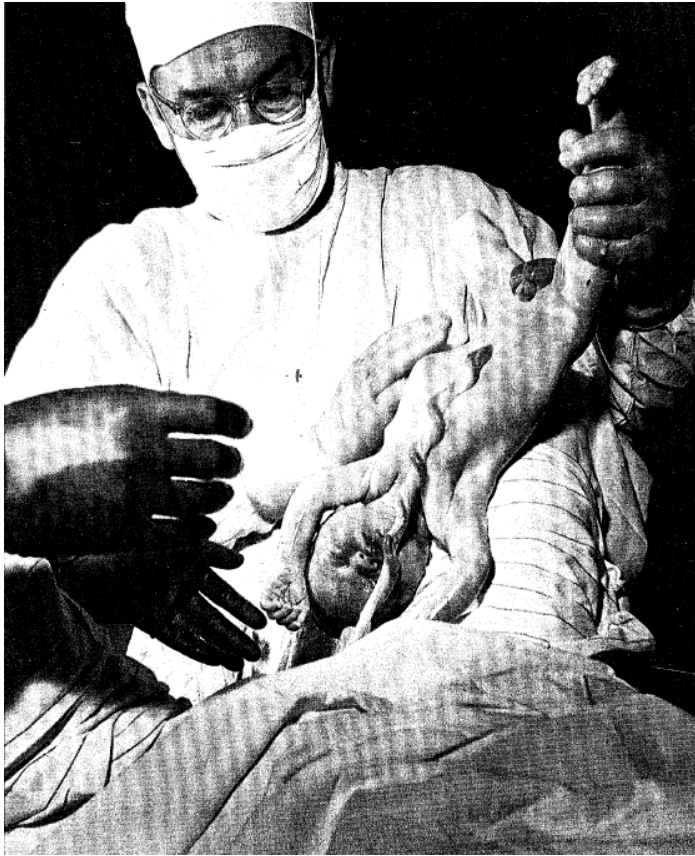
⁴⁹ See the exhibition's page at the website of the Museum of Modern Art, MoMA Archives, <http://www.moma.org/learn/resources/archives/archives_highlights_06_1955> [accessed 10 July 2013].

⁵⁰ Edward Steichen, 'Introduction' to *The Family of Man*, ed. by Edward Steichen (Museum of Modern Art, New York, 2010), p. 3.

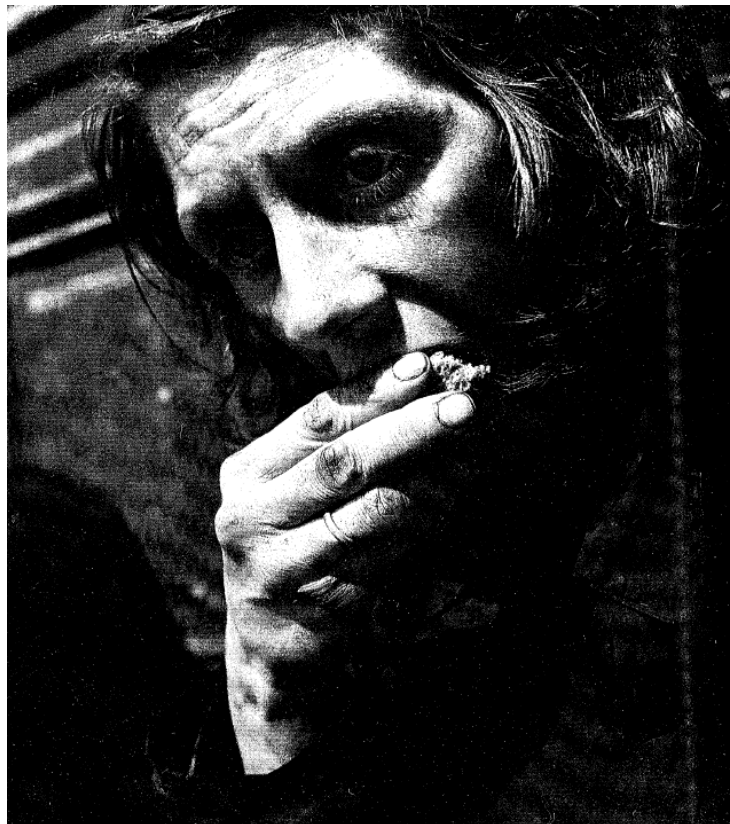
⁵¹ Roland Barthes, *Mythologies*, trans. by Annette Lavers (London: Granada, 1973), p. 100.

⁵² See images overleaf.

⁵³ Barthes, *Mythologies*, p.103.



the exhibition, where Steichen's appeal to human consciousness rather than social conscious effects of this apparently post- to the images, which, with their locating ated on the extractive exploitation of the



⁵⁴ Steichen, 'Introduction', *The Family of Man*, p. 3.

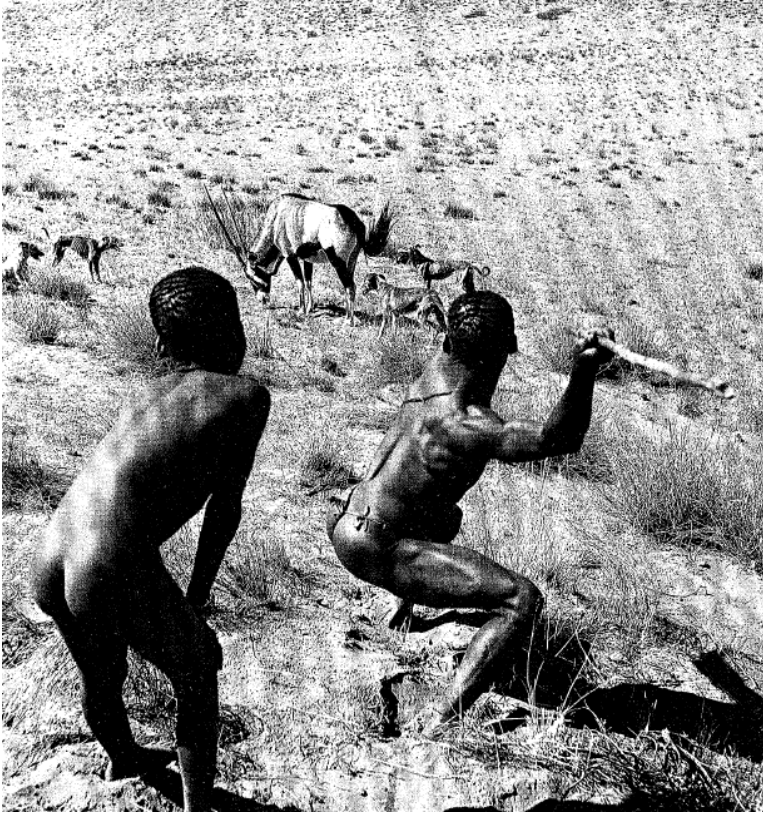
Global South. In this context, the universalizing imperative which motivates *The Family of Man* produces a flattening of difference which obscures the asymmetry of power in international relations. We are confronted once again with the suspicion that the concept of the universal can only emerge on the basis of this obfuscation of power.

A perceptual blindspot in Barthes' analysis (and here one finds a point of commonality between Barthes and Steichen) is found in his inattentiveness to the specifically *political* character of the exhibition's orientation towards the nonhuman world. If Barthes emphatically rejects the politically obfuscatory effect of Steichen's 'ambiguous myth of the human "community,"' he nonetheless speaks of a 'progressive humanism' which must attentively 'scour nature, its "laws" and its "limits" in order to discover history there'.⁵⁵ With this qualified *humanism* as a guiding concern, Barthes' historical materialist approach retains a certain methodological anthropocentrism. In anthropocentric materialism, historicity is apprehended as that which structures the relations of production between *human* actors in economic activity. While he responds to the attempt to universalise labour with an analysis that insists on its historicity as a socio-cultural practice, he gives no account of the extractive violence towards the nonhuman world which predominates in Steichen's representations of labour. Images of hunting, forestry and the domestication of livestock appear throughout *The Family of Man* as a human universal, and this extractive approach to the natural world falls outside of the 'progressive humanist' critique of 'naturalization'.⁵⁶

It is clear, then, that the rejection of certain varieties of humanist universalism need not always coincide with a rejection of anthropocentrism. As a key intellectual figure in the postwar reconceptualization of rights and the human, Jacques Maritain followed Barthes in stressing the primacy of difference (here construed in anthropological rather than material and political-economic terms) in the construction of universal humanity. Maritain's theorization of the universal takes as its point of departure the heterogeneity of the 'speculative ideologies' of the manifold cultural traditions of the world. With the concept of 'speculative ideologies', Maritain names the extraordinarily divergent intellectual and metaphysical systems of world cultures, which can (and must) be brought into dialogue through the work of intercultural translation. Despite this insistence on the apparent difference of cultural traditions, in his contribution to the UNESCO symposium on human rights he argued (and here he departs from Barthes' anti-humanism) that the work of translation will reveal that, in terms of 'practical ideology'—that is, in terms of the social and ethico-political *effects* of heterogeneous metaphysics—the various cultures show a stunning unanimity, 'a sort of unwritten common law at the point where in

⁵⁵ Barthes, *Mythologies*, pp. 100-101.

⁵⁶ See images overleaf.



practice the most widely separated theoretical ideologies and mental traditions converge'.⁵⁷ This conciliatory project, in which difference itself leads paradoxically to identity (and thus, to community), finds an echo in the representational strategies of Steichen's *The Family of Man*. Alongside the photography, Steichen prints folk aphorisms and decontextualized quotations from various philosophical and artistic traditions. It is hoped that the superficial heterogeneity of, say, James Joyce's *Ulysses* and the Bhagavad Gita will, by this strategy of juxtaposition which seems to demand an act of cultural translation, be recognised by the viewer as an index of the deep identity and covert unity of diverse cultures.

It is impossible to introduce the question of species difference into these analyses without producing a certain amount of anxiety. Colonial anthropology tended to figure colonized peoples and racial minorities in terms of animality, and efforts to bracket or erase the ontological distinction between cultural difference and species difference can appear to resurrect this pernicious history of ethnocentric stratification. Advocates for marginalised human populations are often (and understandably) wary of abandoning positions of human exceptionalism, given the availability of humanist universalism as the proximate critical vocabulary in which to articulate claims to rightful inclusion in political and ethical life. I would argue instead that human exceptionalism, which retains the category 'animal' to mark the limit of identification and of the subject, itself recapitulates the logic of exclusion which permits the expulsion of unfavoured human groups from the 'universal' community. As Cary Wolfe has argued, 'as long as this humanist and speciesist *structure* of subjectivization remains intact [...] then the humanist discourse of species will always be available for use by some humans against other humans'.⁵⁸

My claim here is that the play of identity and difference functions analogously in the cases of cultural and species difference, particularly concerning efforts to fix the limits of a 'universal' community. Moving from ethnography to ethology, Jacques Derrida has claimed that the task for philosophy is to resist the temptations of a naïve humanism which would proceed by 'reducing this differentiated and multiple difference, in a conversely massive and homogenizing gesture, to one between human subjects, on the one hand, and the nonsubject that is the animal in general, on the other, where the latter comes to be, in another sense, the nonsubject that is subjected to the human subject'.⁵⁹ This logic finds an echo in the postwar effort to establish the uniformity and self-identity of the category 'human': the conceptual violence of humanism is

⁵⁷ Jacques Maritain, 'Introduction', in *Human Rights: Comments and interpretations*, ed. by Jacques Maritain (London: Allan Wingate, 1949), pp. 9-17 (p. 10).

⁵⁸ Cary Wolfe, *Animal Rites: American Culture, the Discourse of Species, and Posthumanist Theory* (Chicago: University of Chicago Press, 2003), p. 8.

⁵⁹ Derrida, *The Animal That Therefore I Am*, p. 126.

exemplified by Steichen and Maritain's aesthetic and intellectual formulations of postwar universal humanism, in which the reduction of infra-human cultural difference to simple identity is paralleled by an erasure of nonhuman subjectivity, and by the erasure of gross asymmetries of power *within* the category 'human'. Following Derrida, I take it as axiomatic that any assertion of identity (on either side of the species boundary) has as its condition this erasure of multiple differences. As I have tried to show through analyses of postwar universalism in its political and aesthetic forms, identity is never simply given, but is in large part *produced* by the declaration of identity, backed by institutional power and cultural and symbolic capital.

In what follows, I want to suggest that the claims to identity made by postwar humanism are susceptible to an immanent critique, and that their intellectual foundations are unable to fully domesticate a teeming proliferation of differences which everywhere call the assertion of identity into question. My aim in problematizing the bases of universal humanism is not, of course, to retreat from the cosmopolitan to the particularity of nationalism or ethnocentrism. Such a project would be plainly incoherent given the analysis I am pursuing here, since the identity of 'the nation' or *ethnos* is as riven by difference as the identity of 'the species'. I hope instead to recover some of what is lost in the hasty conflation of the universal with the human, and to insist likewise that efforts to construe difference narrowly as the difference of humans from one another (or worse, as the insuperable difference of all humans and all animals, understood as undifferentiated unities) reflect a kind of conceptual violence, an anthropocentric foreclosure of the limits of community. If a characteristic rhetorical strategy of postwar humanism was to work from superficial heterogeneity to deep unity, I want to use the speculative fiction of Ursula Le Guin to reverse this trajectory. Le Guin's literary strategy is in continuity with Steichen and Maritain's universalism, aspiring, as she puts it, 'first to create difference, then to let the fiery ark of human emotion leap and close the gap.'⁶⁰ Nonetheless, I will argue in what follows that the cosmological scope of her fiction, combined with its proliferation of diverse human morphologies and capabilities, works to undermine assertions of the simple unity of humankind in a way that points towards a post-anthropocentric refiguration of the universal. Refusing the conciliatory movement from manifest difference to practical unity, I begin instead with the assertion of the identity of the human family and work to steadily thicken multiple differences to the point of conceptual crisis.

⁶⁰ Ursula Le Guin, cited in Margaret Atwood, *In Other Worlds: SF and the Human Imagination* (London: Virago, 2012), p. 123.

Interstellar Cosmopolitanism: Ursula Le Guin's The Left Hand of Darkness

The Left Hand of Darkness (1969) is a novel which, in combining the fantasy of a universal 'human family' with the generic conventions of science fiction (sf), reimagines the postwar cosmopolitan turn on an interstellar scale. The novel's protagonist, Genly Ai, instantiates the ideal of cosmopolitan subjectivity. Ai is an Envoy, a representative of an affiliation of human planets known as the Ekumen. His task is to establish contact with the natives of Gethen (a planet which is also known by the Ekumenical exonym, Winter) for the purpose of integrating them into the interstellar community of universal humanity. This process of expansion and integration closely echoes the postwar orientation towards supra-national political humanism. The action of *Left Hand* is preceded by a period of turbulence and dissolution in the interstellar community: 'The Age of the Enemy', from which 'all the central worlds are still recovering, [...] reviving lost skills and lost ideas, learning how to talk again'.⁶¹ The turn towards cosmopolitanism in Le Guin's novel can therefore be understood as a response to the crises of the twentieth century, offering what Fredric Jameson has described as a 'liberal "solution"—the Ekumen as a kind of galactic United Nations'.⁶² The Gethenians, who with Ai's help are poised to graduate into the ranks of universal humanity, are, like the other human populations (including the Terrans, that is, us) the descendants of colonists planted by the first humans from the planet Hain. With the passage of millennia and the dissolution of the links between 'centre' and 'periphery' that were established by the original colonial project, the Gethenians have become wholly isolated, ignorant of the existence of human populations of other planets.

Genly Ai, then, comes to Gethen as an alien whose humanity is in question. Separated biologically as well as culturally, Gethenian bodies are substantially different from Ai's now unfamiliar Terran morphology. Most strikingly, Gethenians are ambisexual. When not in *kemmer* (a cyclical period of reproductive fertility in which they can take on attributes of either sex), 'normal' Gethenians are neither male nor female. I will return shortly to the articulation of this peculiar sexual morphology in terms of species, but for now it will suffice to note it as a particularly striking manifestation of difference, and thus of a potential fracture in the posited identity of all humans which is the condition of Ekumenical community. Ai's strategy for subsuming morphological difference under the rubric of identity recalls Steichen's aspirations for his *Family of Man* exhibition. On his approach to Argaven, 'king' of Karhide (one of two major Gethenian nations), Ai presents the king with 'a little gallery of Man: people of Hain, Chiffewar,

⁶¹ Ursula Le Guin, *The Left Hand of Darkness* (London: Orbit, 1992 [1969]), p. 11. Further references to this edition will be given in the text.

⁶² Fredric Jameson, 'World-Reduction in Le Guin: The Emergence of Utopian Narrative', *Science Fiction Studies*, 2.3 (1975), 221-230 (p. 230).

and the Cetians, of S and Terra and Alterra, of the Uttermosts, Kapteyn, Ollul, Four-Taurus, Rokanan, Ensbo, Cime, Gde and Sheashel Haven' (p. 29). Like Steichen's 'family', Ai's exhibition reflects the anti-racist project ("We come all colours", p. 29) of an incipient postcolonial humanism. In both Steichen and Le Guin, the capturing of manifold differences within an aesthetic-representational practice is a strategy which, paradoxically, produces (at least the effect of) identity.

The novel is thus fully committed to the project of cosmopolitan humanism, and the setting of Gethen underscores the human exceptionalism on which this anthropocentric concept of community is founded. Fredric Jameson has argued that 'the cold weather of the planet Winter must be understood, first and foremost, not so much as a rude environment, inhospitable to human life, as rather a symbolic affirmation of the autonomy of the organism, and a fantasy realization of some virtually total disengagement of the body from its environment or ecosystem. Cold isolates,' claims Jameson, and the effect of this isolation is to underscore the characters' 'physical detachment, their free-standing isolation as separate individuals'.⁶³ This ontological individualism, which demands the rigorous enforcement of the distinction between the organism and its environment, is foundational to the rearticulation of humanist subjectivity in postwar culture. Gethenians are triply isolated by the effects of an extreme climate, their (temporary) position outside of the interstellar human community, and by their estrangement from other forms of life on their homeworld. As Ai tells the Gethenians "[their] race is appallingly alone in its world. No other mammalian species. No other ambisexual species. No animal intelligent enough even to domesticate as pets" (p. 189). For Le Guin, isolation is inescapably ambivalent: it purchases the privileges of humanist subjectivity (figured as autonomy, disengagement) at the 'appalling' cost of alienation from nonhuman forms of life.

Le Guin underscores her commitment to a conventionally humanist metaphysics of subjectivity through her elaboration of the biosocial technique of 'mindspeech' that forms a link connecting (at least in principle) all descendants of the Hainish colonization to one another. A form of telepathy, mindspeech has a physiological basis, but requires in addition the attainment of a certain level of cultural sophistication. As Ai explains, it is "a side effect of the use of the mind. Young children, and defectives, and members of unevolved or regressed societies, can't mindspeak. The mind must exist on a certain plane of complexity first" (p. 204). Mindspeech, then, attests to the transcendence of cognition over 'primitive' materiality (a hierarchy that sits uneasily with Le Guin's gender politics, as we shall see). It is founded on the primacy of language, as Ai explains to a Gethenian interlocutor: "Empathy's another game, though not unconnected. It gave us the connection tonight. But in mindspeech proper, the speech centres of

⁶³ Jameson, 'World-Reduction', p. 222.

the brain are activated” (pp. 206-207). The subordination of matter to cognition, and of the primitive to the modern, repeats itself in the opposition of affect and speech. While sympathy plays a role in establishing the possibility of connection, it is *logos*, not *pathos*, that is the proper vehicle for intercultural communication. If mindspeech forms a point of contact across difference, a practice of communicative rationality which breaks out of the isolation of Cartesian subjectivity into the collective negotiations of shared existence, it nonetheless has its condition of possibility in the unity and self-presence of the (modern, adult, human) subject.

In this too, *The Left Hand of Darkness* follows the cosmopolitan turn in postwar international politics. The desire for communication across cultures and traditions is institutionalised in the work of UNESCO and similar organisations as a notionally non-appropriative, mutually enriching process which is founded on an (often tacit) orientation towards a specifically Western conception of subjectivity. As Margaret Atwood describes it, in the Ekumen, ‘conquest is not the aim, nor is missionary work: non-invasive, non-directive understanding and recording are the functions required’.⁶⁴ The contemporaneous processes of decolonization demanded the forging of a new, dialogic rather than imperialist universalism. Ai’s advocacy reflects this turn from domination to harmonization: the ‘Ekumen doesn’t rule, it co-ordinates. Its power is precisely the power of its member states and worlds’ (p. 14). Its purpose is to facilitate ‘Material profit. Increase of knowledge. The augmentation of the complexity and intensity of the field of intelligent life. The enrichment of harmony and the greater glory of God. Curiosity. Adventure. Delight’ (p. 28). The pedagogical mission of the Ekumen, then, is not so different from the Universal Declaration of Human Rights’ insistence that ‘Education [...] shall promote understanding, tolerance and friendship among all nations, racial or religious groups, and shall further the activities of the United Nations for the maintenance of peace’ (UDHR, p. 228).

In *Left Hand*, Le Guin offers a kind of history of the West in miniature. She situates the political universalism of the Ekumen within a developmental narrative which proceeds from the supposed semi-humanity of pre-modern forms of social organization, through the very different forms of inhumanity that characterise modern nationalism and bureaucratic state-building, to the promise of a cosmopolitan and properly humanist future. Her anthropological-historical narrative imagines varying cultural attunements to the concept of time, according to the dictates of a discourse of species that accompanied the emergence of the post-enlightenment concept of the subject. As the novel opens, it is still ‘always Year One’, and the concept of ‘the unitary Now’ (p. 1) which organises Gethenian temporality indicates a society which has not yet emerged into History. The Gethenians are therefore potential, though not yet actual, members of the cosmopolitan human community, lacking as they do the requisite modern conception of

⁶⁴ Atwood, *In Other Worlds*, pp. 119-120.

linear, progressive time. Ai's first destination, the kingdom of Karhide, combines an advanced level of technological development with a semi-feudal mode of social organization. Estraven, Ai's host in Karhide, declares that "Karhide is not a nation but a family quarrel" (p. 5). Le Guin's representation of Gethenian society intimately links the absence of modern nationalism (and its violence) to the lack of a concept of historical development. If, following the theorist of nationalism Benedict Anderson, the Gethenians share with early modern Europe 'a conception of temporality in which cosmology and history were indistinguishable', then this deficiency insulates them from the bureaucratic violence of the modern, national, centralised state.⁶⁵ Lacking both History and nationhood, Gethenians (in Karhide, at least) are immune to the narratives of national rebirth that brought devastation to Europe in the first half of the twentieth century.

There is a species politics implicit in this refusal of national-historical subjectivity. As Ai points out (and here his testimony is undoubtedly marked by the ethnocentric prejudices of the colonial anthropologist), 'On Gethen, nothing led to war'. Personal feuds and familial vendettas were common, at least in Karhide, 'but they did not go to war. They lacked, it seemed, the capacity to *mobilize*. They behaved like animals, in that respect; or like women' (p. 39, emphasis in original). Ai links this inhuman immobility to the attenuated nationalism of the Karhidish people. To be properly human, then, one must become modern, substituting historical development for the perpetual present, and replacing the myopia of pre-national consciousness with nationalism (which in turn will cede to universalism, as we shall see).

Gethenian theology replicates the tension between these competing temporalities (and their attendant species meanings) in the split between the Handdara and Yomeshta faiths. 'The Old Way of the Handdara' is founded on ethnic and geographic particularity: 'You have to go back to the Old Land if you're after the Old Way' (p. 38). In contrast, 'one can be a Yomeshta anywhere' (ibid.). The schism which saw the emergence of Yomeshta echoes the supposed founding moment of Western political universalism in the break of Pauline Christianity with Judaism, which as we saw earlier has been so suggestive for twenty-first century intellectuals hoping to revive universal (humanist) subjectivity. The Handarra tradition, on the contrary, is the faith of a people (though not yet a Nation) who have yet to emerge into the opening of history. Faxe, a Handarra mystic 'looked at me [Ai] out of a tradition thirteen thousand years old: a way of thought and way of life so old [...] as to give a human being the unselfconsciousness, the authority, *the completeness of a wild animal*, a great strange creature who looks straight at you out of his eternal present' (p. 57, emphasis added). Handarra mysticism privileges passivity

⁶⁵ Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism*, 2nd edn (London: Verso, 2006), p. 36.

over action, ignorance ('the ground of thought') over knowledge, and the negativity of being-toward-death over any positive affirmation of the dignity of life (p. 57). In its closely linked refusal of humanist subjectivity *and* modern temporality, the Handarra tradition binds the Gethenian unitary Now to a familiar species politics. If Faxe's traditional authority lends him 'the completeness of a wild animal', this is because Handarra temporality renders impossible attempts to oppose the present to the historical process. Like the impoverished 'animal' of the humanist tradition, Gethenians are characterised by perfect immanence to their environment (here conceived temporally rather than spatially). Following Georges Bataille's analysis of the continuity of animals with their environment, the Gethenian is in time 'like water in water'.

The ontological priority of immanence is already under pressure when Ai arrives on his mission from the Ekumen. Technological and cultural development in Karhide has meant that its inhabitants 'had finally, in the last five or ten or fifteen centuries, got a little ahead of Nature' (p. 83). This transcendence of the nonhuman is accompanied by the emergence of new ethical practices which redraw the boundaries of community. The novel opens with a ritual in which Argaven, king of Karhide, lays the foundation of a new building. Estraven, Ai's host, points out that "Very-long-ago a keystone was always set in with a mortar of ground bones mixed with blood. Human bones, human blood. Without the blood-bond the arch would fall, you see. We use the blood of animals, these days" (p. 4). The transition from tradition to (inchoate) modernity is marked by the sacrifice of the animal, whose death guarantees the stability of the artifactual world. This index of historical development encompasses something like a primitive humanism, recognising as it does the ethical exceptionality of human conspecifics, and insisting instead on the substitution of animal for human death.

The theological schism of the Yomeshta is another symptom of the waning of cosmological time, as is the success of the Yomeshta state, Orgoreyn. As the second major Gethenian polity, Orgoreyn is a bureaucratic-collectivist state, highly centralised and efficient, and possessing an effective repressive apparatus. Ai recognises in Orgoreyn a type of society which he has observed throughout the Ekumen, the 'ecology-breaking cultures' (p. 190) which take as their task the overcoming of the nonhuman world. Orgoreyn and Karhide, then, exemplify Claude Levi-Strauss's distinction between 'hot' societies (which are conscious of the historical process and orient themselves towards 'progress') and 'cold' societies which, like Karhide, are 'more preoccupied with the likenesses, the links, the whole of which living things are a part' (p. 190).

The emergence of modernity on Gethen forms the thematic core of *The Left Hand of Darkness*, and the novel's response to modern state violence enters into a dialogue with the political project of mid-twentieth century political humanism. Under the pressure of historical

development, national consciousness takes root in Orgoreyn, inciting in response an incipient national awakening in Karhide which threatens to provoke the first Gethenian war. Orgoreyn and Karhide begin a border dispute, a 'shadow-fight' (p. 65) which, with a characteristically modern political claim, establishes nation, state and territory as coextensive. *Left Hand*, then, proceeds without interruption from the foundation of national states to the deferred violence of a Cold War. The novel's solution to this crisis returns us to the ascendancy of the ideal of cosmopolitan political subjectivity in the postwar period. Genly Ai (representing the wider Ekumenical community) offers a possible escape from the nationalist violence of modernity. According to the Commensals of Orgoreyn (a kind of bureaucratic ruling class), 'he brings the end of Kingdom and commensalities with him in his empty hands' (p. 70). The Yomeshta cult, with its attunement to history and its orientation towards universality, is particularly well placed to apprehend the cosmopolitan promise of the Ekumen. One devotee,

having turned his Yomesh mysticism on to the Envoy's statements, interprets the coming of the Ekumen to earth as the coming of the Reign of Meshe among men. [...]

'We must halt this rivalry with Karhide before the New Men come. [...] We must forego *shifgrethor* [a feudal honour code], forbid all acts of vengeance, and unite together without envy as brothers of one Hearth.' (p. 123)

The mutual antagonism of Karhide and Orgoreyn can only be dissolved by the extension of the boundaries of community (or 'Hearth') made possible by political cosmopolitanism. Internationalism thus appears in *Left Hand* as the consummation of a humanist teleology of historical development. The transformation of modes of social organization (and the limits of political community) proceeds from a pre-historical, pre-national feudal monarchism based on the immanence of time, through early modern national chauvinism and total warfare, before culminating in "the general interest of mankind" (p. 16) to which the Ekumen is devoted.

With this developmental logic, Le Guin reproduces the optimism of postwar institutional humanism, which anticipated the dissolution of violent nationalisms and the forging of universal human subjectivity. I have shown how this narrative is closely linked to the humanist aspiration to transcend animality and materiality, whether through the primacy of Kantian subjectivity in political cosmopolitanism or through the ideal of 'mindspeech' as a form of intersubjective communication which escapes the bodiliness of (labial, phonic) speech. In these fantasies of immaterial subjectivity, the 'animal' remainder of biological life forms the constitutive outside of the cosmopolitan community of equals. I want now to turn from these figures of universal human identity to the material condition against which they are articulated: the cultural and morphological variety of (para-)human life. My claim is that the political aspiration to universal community, which seeks to embrace cultural and morphological

diversity within the rubric of human identity, cannot reconcile its respect for morphological difference with its desire to anthropocentrically circumscribe the limits of community.

Undoing the Human: SF, Cosmopolitan Humanism and Species Difference

In some remote corner of the universe, effused into innumerable solar-systems, there was once a star upon which clever animals invented cognition. It was the haughtiest, most mendacious moment in the history of this world, but yet only a moment. After Nature had taken breath awhile the star congealed and the clever animals had to die.

—Friedrich Nietzsche, 'On Truth and Falsity in Their Ultramoral Sense'⁶⁶

Those creatures which live in the forests on the head of a beggar had long since considered their location as an immense ball, and themselves as the masterpiece of creation, when one of them, endowed by Heaven with a more refined spirit, a small Fontenelle of his species, unexpectedly became familiar with the head of a nobleman. Immediately he called together all the witty heads of his quarters and told them with excitement: 'We are not the only living beings in nature; see, there, that new land, more lice live there.'

—Unknown author, quoted in Kant, *Universal Natural History*⁶⁷

The triumphal humanism of *The Left Hand of Darkness*, which concludes with the dissolution of national chauvinism through the successful incorporation of Gethen into the Ekumenical community, enthusiastically proclaims the utopian potential of political cosmopolitanism. Le Guin's variety of cosmopolitanism is founded on the identity of the human species across manifest difference, and in this sense she echoes the more optimistic strands of postwar political discourse that aspired for a post-nationalist settlement to the crises of the twentieth century. In what follows, I want to complicate this assertion of identity. I argue that the figure of 'the human', which provides the ontological foundation for the cosmopolitan political settlement, starts to come undone when inserted into the generic conventions of SF, in ways that have implications for thinking human identity and difference both in connection with the postwar humanist turn and more broadly. As I noted at the beginning of this chapter, the figure of universal humanity is nowhere untroubled by its abjected Other: the nonhuman in general and the animal in particular, whose exclusion founds the political community of humanity. In *Left Hand*, the avatars of modern political humanism are only imperfect representatives of cosmopolitan subjectivity. Genly Ai, who represents universal *citizenship* (that is, the *bios*

⁶⁶ Friedrich Nietzsche, 'On Truth and Falsity in Their Ultramoral Sense', trans. by M. A. Mügge, in *Early Greek Philosophy and Other Essays*, The Works of Friedrich Nietzsche, ed. by Oscar Levy, 18 vols (Edinburgh: T. N. Foulis, 1911), vol 2, pp. 171-92 (p. 173).

⁶⁷ Immanuel Kant, *Universal Natural History and Theory of the Heavens*, trans. by Stanley L. Jaki (Edinburgh, Scottish Academic Press, 1981), p. 185.

proper to human political life), embodies a finitude of perspective and a mode of passivity that is at odds with his humanist mission. Even his name 'Ai', as Estraven points out, is 'a cry of pain' (p. 186), an inhuman wail rather than the *logos* that ties the capacity for political discourse to membership in a community of subjects.

Another challenge to the project of elaborating universal humanist subjectivity – and one which I would argue inheres in the generic conventions of SF – is the difficulty in reconciling a commitment to human exceptionalism with the interstellar scope of Le Guin's fictional vision. If fantasies of interstellar settlement appeal to a kind of colonial imagination, a mastery of space that goes beyond the merely terrestrial, they also establish a new context for human action which, by virtue of its scale, calls into question our ontological centrality. This *topos* of decentred humanity is not specific to Le Guin, or even to SF, but recurs persistently whenever pretensions to human exceptionalism are thought on a cosmological scale. For Nietzsche, the 'clever animals' that we are marvel at our capacity for 'higher' intellectual function, taking it as an index of our transcendence of the nonhuman world. The invention of 'cognition', that hallmark of humanist subjectivity, is in this account 'the haughtiest, most mendacious moment in the history of this world'. What human chauvinism forgets, according to Nietzsche's aphorism, is the exposure of all life to nonhuman forces which exceed our capacity to master them, and which, given enough time, will prove fatal to the species.

Of course, Nietzsche's smart hominids were confined to a single planet, unable to flee their dying solar system. The postwar SF imagination, spurred by the extraordinary contemporaneous development of space technology, was far better placed to imagine the escape from terrestriality. But the flight from earthbound finitude into the seeming infinitude of space demands a certain conceptual readjustment. The ontological and epistemological anthropocentrism which identifies universality with the experience of a single, exceptional species becomes less tenable in the SF imagination, with its proliferation of sapient but nonhuman forms of life. Efforts to think difference beyond humanism often want to domesticate the challenge to humanist universalism posed by this imagined heterogeneity of life by figuring aliens as exemplary liberal subjects, for example; or conversely, as 'mindless' predatory automatons to be eradicated, as in Ridley Scott's *Alien* (1979). The first of these two strategies is in evidence in Kant's proto-SF thought experiments, which grapple with the possibility of extraterrestrial nonhuman intelligence: 'It is noteworthy that we can think of no other suitable form for a *rational* being than that of a human being. [...] Therefore we populate all other planets in our imagination with nothing but human forms, although it is probable that they may be formed very differently, given the diversity of the soil that supports and nourishes them, and

the different elements of which they are composed'.⁶⁸ Kant's analysis testifies to the difficulty of conceiving of the heterogeneity of life without imposing a schema of intelligibility that would render difference as identity.

Humanist evasions notwithstanding, the proliferation of forms of life in SF means that 'the human' shows up – if at all – as one species among many, and thus the pretensions of human exceptionalism can no longer be maintained – without great conceptual, symbolic and physical violence at least, as in the fictions of interstellar human imperialism. With the figure of intelligent alien life, SF refuses those interpretations of evolutionary biology which posit the human as the necessary *terminus* of evolutionary development. Likewise, one can no longer legitimate human dominion over the nonhuman world by appealing to the supposed uniqueness of cognition. Such a claim becomes unavailable in a universe populated by clever nonhumans. More foundationally, post-Kantian philosophy has tended to insist on the ontological and epistemological centrality of human subjectivity. Kant inaugurated critical philosophy with his claim that the real (the noumenal world of things-in-themselves) is permanently inaccessible to thought, and that only the phenomenal world is capable of being known. The ontological priority of the phenomenal (that is, the world as it is given to human subjects, mediated by the categories of space and time) means that all philosophy is reconceived as an inquiry into the relation between a subject (always presumed to be human) and the world as it appears for that subject. Human subjectivity, however bracketed from the real, becomes a node through which all inquiry must pass. There is no space for an a-subjective ontology after Kant, and as Quentin Meillassoux has convincingly shown with his analysis of the problematic of 'ancestrality', post-Kantian philosophy struggles to render meaningful any claims about the nonhuman world that pre-date the emergence of modern humans.⁶⁹

Once again, the multiplicity of forms of life in SF radically undermines the basis of this ontology, insisting that while the real may only show up in its givenness to a subject, the category 'subject' is by no means coextensive with 'the human'. It is true that something like a subject or biographical person still remains at the centre of SF's representational practices; SF has this much in common with the great majority of narrative discourse in modernity. In sf, however, rather than the ontological exceptionality of Kantian (human) subjectivity, we are instead confronted (via the figure of intelligent nonhuman life) with a plurality of forms of life, each inhabiting irreducibly different phenomenal worlds, thereby undermining post-Kantian

⁶⁸ Immanuel Kant, *Anthropology from a Pragmatic Point of View*, ed. and trans. by Robert B. Louden, (Cambridge: Cambridge University Press, 2006), p. 65. My analysis of Kant in this section is indebted to Tom Tyler's reading in *Ciferae: A Bestiary in Five Fingers* (Minneapolis: University of Minnesota Press, 2012), pp. 109-61.

⁶⁹ Quentin Meillassoux, *After Finitude: An Essay on the Necessity of Contingency*, trans. by Ray Brassier (London: Bloomsbury, 2009). Cf. especially pp. 1-27.

philosophy's assertion that the finitude of the human transcendental subject is a singularly significant nodal point through which all ontological and epistemological inquiry must pass.

All of this might seem remote from the investigation into humanism and animal ethics that I have been pursuing. I would insist instead that the strategies that SF relies on for thinking difference and universality – and the implications of these strategies for political cosmopolitanism – are everywhere in correspondence with our efforts to think infra-human and inter-species difference. SF's elaboration of a multiplicity of forms of life substantially complicates the hierarchical stratification implicit in the human/nonhuman opposition, and this undoing of established orders demands a new kind of attention to the category 'human', figuring it not in terms of the old humanist commonplaces but rather as something strange and potentially surprising. This estrangement is expressed in the terminological innovation by which humans become 'Terrans' in SF taxonomies of species. Their ontological centrality no longer guaranteed, humans pass from the position of 'unmarked' or generic subjectivity to the 'marked' specificity of one sapient species among many. In one sense, this estrangement of the human by its insertion into a more-than-human interstellar community simply recovers the originary estrangement that follows from our own everyday existence within multi-species communities. As Sherryl Vint has noted, 'the very concept of the alien is one that expresses a human interest in – and struggle with – the reality of living with a different being', of whatever species.⁷⁰ The strategies of estrangement that characterise the generic conventions of SF (alien worlds, invented species) invite us to reflect anew on an aspect of our terrestrial existence to which political humanism is largely indifferent: that we find ourselves already amongst 'alien' forms of nonhuman life, and that to take these lives seriously (ethically as well as ontologically) is to recognise that our propensity to install ourselves at the centre of our intellectual systems is ontologically untenable and politically pernicious.

The pressure that SF places on the concepts that underwrite humanist propriety is, I claim, strongly analogous to the weakening of humanism that follows from taking seriously the question of animal life. Above, I enumerated three strategies by which human exceptionalism is intellectually reproduced: a teleological conception of evolutionary development, an insistence on the exceptionality of human cognitive function, and the location of the point of departure for philosophical inquiry in the finitude of the human's relationship to her phenomenal world. All of these tropes come undone in SF's speculative engagements with intelligent alien life, but all are equally susceptible to an ethological critique rooted in attentiveness to the plurality of nonhuman animal capacities. While popular Darwinism frequently positions human life as the

⁷⁰ Sherryl Vint, *Animal Alterity: Science Fiction and the Question of the Animal* (Liverpool: Liverpool University Press, 2012), p. 136.

culmination of evolutionary development, critiques of spatial-teleological metaphors (the ‘tree of life’, for example, or the familiar ‘ascent of man’ diagram) have been elaborated from *within* the biological sciences, claiming that these representational strategies are inadequate to the aleatory, non-hierarchical actuality of evolutionary change.⁷¹ Research into nonhuman cognition similarly challenges the humanist insistence on cognitive exceptionalism. In terms of foundational ontology, the Kantian insistence on the finitude of human subjectivity as the point of departure for philosophical inquiry has found a more-than-human supplement in the work of the theoretical biologist, Jakob von Uexküll. An adherent of Kant, Uexküll retained the ontological primacy of the finite relation between a subject and its phenomenal world, claiming that ‘the task of biology consists in expanding [...] the results of Kant’s investigations’.⁷² Going beyond Kant’s transcendental humanism, Uexküll insisted that this finitude can in no way be restricted to the human animal. With his concept of *umwelt* – the ‘with-world’, a species-specific disclosure of phenomena with far more variations than familiar Kantian finitude – Uexküll sketches a multiplicity of incommensurable phenomenal worlds encompassing both human and nonhuman life, none of which can lay claim to ontological centrality. His project – to complete the Kantian analyses of finitude – meant ‘studying the relation of other subjects (animals) to objects’, and this gesture necessarily multiplied modalities of finitude to the point where Kantian human exceptionalism becomes intellectually untenable.⁷³

In what follows, I want to pursue this strategy of decentring the human in multi-species communities, reading Le Guin’s (para-)humanist cosmopolitanism together with Fredric Jameson’s insistence on the utopian and politically radical potential of SF, a genre that has ‘inherit[ed] the vocation of giving us alternate versions of a world that has elsewhere seemed to resist even imagined change.’⁷⁴ The unfamiliarity of SF worlds and the effect of estrangement produced by the genre’s representational conventions creates a certain distance from our terrestrial practices that allow us to glimpse the contingency of our conceptual orderings, and, in turn, to think the relations between species, community and universality otherwise than as violence and exclusion.

The cosmological scope of Le Guin’s fictional vision brings to the fore these questions of incommensurability, political community and cultural difference (or species difference; in Le

⁷¹ Steven Jay Gould, ‘Redrafting the Tree of Life’, *Proceedings of the American Philosophical Society*, 141.1 (1997), pp. 30-54.

⁷² Jakob von Uexküll, cited in Brett Buchanan, *Onto-Ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Pont and Deleuze* (Albany, NY: State University of New York Press, 2008), p. 13.

⁷³ *Ibid.*

⁷⁴ Jameson, ‘World-Reduction in Le Guin’, p. 223.

Guin's hands, the distinction becomes instructively imprecise). At the very beginning of *The Left Hand of Darkness*, Genly Ai underscores the difficulty of establishing a univocal truth across difference: 'I'll make my report as if I told a story, for I was taught as a child on my homeworld that Truth is a matter of the imagination. The soundest fact may fail or prevail in the style of its telling' (p. 1). What emerges in the encounter across difference is a concept of truth as an aesthetic practice, modulated by the limits of 'homeworld'; that is, by a certain inevitable ethnocentric finitude of perspective that cannot hope to overcome difference once and for all, but must embrace an aesthetic-pluralist practice of multiple, culturally specific epistemologies, in which no participant can claim ownership or ultimate veridical authority: 'The story is not mine, nor told by me alone. Indeed I am not sure whose story it is; you can judge better' (p. 1). Like the anecdote recounted by Kant, in which a clever louse discovers that the head in which he had lived is one among many 'worlds', the speculative encounter with intelligent life on other planets (or by analogy, with nonhuman life on our planet) seems to impel an expanded epistemological practice that goes beyond the anthropocentric (or louse-centric) limits of terrestrially-bound thought. What Donna Haraway has called (following Freud) the 'Copernican wound', the cosmological decentring of the human, is here recast in positive terms as an incitement to translation across difference, and an invitation to an expanded notion of community.⁷⁵

In Le Guin's utopian project, it is primarily morphological difference (and the cultural practices that follow from it) that demands to be translated and reconciled under the rubric of cosmopolitan humanist community. As Genly Ai has already intimated, the project of reconciliation is complicated by the epistemological incommensurability of morphologically and culturally differentiated modes of being-in-the-world, and it is these figures of incommensurable difference to which I now turn, aiming to frustrate the humanist turn that arrests the political imperative for respect for difference at the species boundary. Genly Ai's ethnographic method explicitly figures the cultural and morphological gap between Terran and Gethenian in terms of species difference: 'Can one read a cat's face, a seal's, an otter's? Some Gethenians, I thought, are like such animals' (p. 12). This inhuman inscrutability, in which the Gethenian gaze resists re-cognition, roots in their peculiar sexual morphology. Neither male nor female, all Gethenians are ambisexual, lacking identifying sexual characteristics (as well as desire) except during periodic windows of sexual fertility in which they can situationally metamorphose into either sex.

From the limited and anthropocentric vantage point of Terran ethnographers, this predominantly genderless (or single-gendered) society is 'quite impossible for our imagination

⁷⁵ Donna J. Haraway, *When Species Meet* (Minneapolis: Minnesota University Press, 2008), p. 11.

to accept. What is the first question we ask about a newborn baby? Yet you cannot think of a Gethenian as “it”. They are not neuters. They are potentials, or integrals’ (p. 76). Under a regime of regulated gender identity and normative heterosexuality, properly human subjectivity seems to demand the specification of sex; one must first be a ‘he’ or a ‘she’ in order to become a person. As Judith Butler has argued, “Sex” is, thus, not simply what one has, or a static description of what one is: it will be one of the norms by which the “one” becomes viable at all, that which qualifies a body for life within the domain of cultural intelligibility’.⁷⁶ The morphological difference between Terran and Gethenian thus recapitulates a familiar *topos* of thinking human and animal difference. Possessed of an agency that is clearly of a different order than inert matter, they are nonetheless excluded from the privileges of personhood by their unintelligibility (to a Terran) as sexless para-humans. Neither subject nor object, Gethenians inhabit a zone of ontological indistinction which they share with animals.

The stability of the concept ‘human’ comes under pressure when the question of morphological difference is approached from the other side of the epistemological divide. Gethenians, too, link an ideal of sexual morphology to a concept of species. Genly Ai, explaining the concept ‘female’ to the Gethenian King Argaven, found himself having to ‘use the word that Gethenians would apply only to a person in the culminant phase of kemmer, the alternative being their word for a female animal’ (p. 29). Argaven, disgusted, announces that any bi-sexual human culture must be ‘a society of perverts’ (ibid.), ‘pervert’ being the Gethenian term for individuals who permanently inhabit a single sex identity. Argaven’s response announces the ethnocentric epistemological finitude which structures the determination of the limits of human community: ‘I don’t see why human beings here on earth should want or tolerate any dealings with creatures so monstrously different’ (p. 30).

At play here is a dynamic that was also operative in twentieth century ethnic and racial nationalism: a certain ethnocentric anthropo-normativity; an effort to figure one’s own proximate community as paradigmatic humans and refigure difference privately in terms of distance from this norm. The interstellar scope of Le Guin’s narrative uncovers the ethnocentric foundations of any appeal to paradigmatic humanness. The cultural (and thus presumably, historical) contingency of any claim to exemplary human subjectivity is exposed by the intercession of the ‘alien’ Terran, Genly Ai, whose socialization into an entirely different understanding of paradigmatic humanity calls into question the putative universality of *any* paradigm. In common with the postwar turn towards humanist universality, the internationalist project of the Ekumen displaces this exclusionary violence. Morphological difference now appears as a primordial ontological fact, but the effort to partition difference into hierarchically

⁷⁶ Judith Butler, *Bodies That Matter: On the Discursive Limits of ‘Sex’* (New York: Routledge, 2011), p. xii.

stratified 'races' is declined, and the invention of an ethnocentrically foreclosed concept of 'humanity' which excludes non-paradigmatic humans is recognised (rightly) as a systematic injustice. Parting company with Le Guin for a moment, we can take this point further and recognise that abandoning the regulative ideal of paradigmatic species types (as seems to happen in SF, however momentarily, with the multiplication of species variations) calls into question the effectivity of the concept 'species' altogether. Without a figure of exemplary humanity against which to measure the differences of the plural 'humanities', the concept 'human' becomes unavailable as a means of delimiting political and ethical communities; there are only biological variations without determinate 'species', and it becomes impossible to think any humanism that is not also an inhumanism. This, finally, is what both Le Guin and the whole postwar universal humanist project are unable to concede.

By refusing to think of difference in terms of natural kinds or races, the Ekumen follows its postwar analogue – the United Nations and its various appendages – in insisting on the universal community of the human species. In spite of this promising decoupling of community and race, a certain anthropocentrism limits Le Guin's utopian project – an anthropocentrism which, I suggest, becomes unavailable when community is refigured on the basis of identity across morphological difference. Le Guin's strategy for arresting this relationship between identity, difference and community at the species boundary – for ensuring, in other words, that cosmopolitan community remains a variety of universal *humanism* – is to appeal to the common origin of all (para-)human forms of life: as Genly Ai avows, 'We are all men, you know, sir. All of us. All the worlds of men were settled, eons ago, from one world, Hain. We vary, but we're all sons of the same Hearth' (pp. 28-29). This invocation of the biological kinship of all human varieties, which echoes the uses of the theory of monogenesis in anti-racist biology, establishes the 'anthrotypic group' (p. 28) as the proper limit of ethical and political community, leaving non-anthropomorphs outside of the sphere of moral consideration.

The common origin of the varieties of humanity on the planet Hain further impels a retrieval of the notion of paradigmatic humanness. The concept of the 'Hainish norm' (p. 201) anchors morphological variation in a regime of normativity which revives the effort to arrest difference and establish a form of type-species. Again Le Guin's representation of morphological diversity appeals to the strategies by which the biological sciences manage difference through taxonomy, the most radical being what biologists refer to as a holotype: an individual specimen which can provide an index against which variations can be measured. The ethical and political upshot of this taxonomic strategy is to supply an efficient way of breaking up the continuum of biological life with a view to recuperating human (or, at least, humanoid) exceptionalism. The ontological difficulty of translating continuities of variation into clearly demarcated species has troubled

evolutionary biology since Darwin, who was ‘much struck how entirely vague and arbitrary is the distinction between species and varieties.’⁷⁷ In a mid-twentieth century context, Ernst Mayr’s *Systematics* (1942) confronted ‘how impossible it is to find a completely adequate and satisfactory species definition’, making reference to ‘some authors for whom species are merely abstractions’, and who argue that ‘all organisms form a continuity, which the taxonomist breaks up into species merely for the sake of expedience, to be able to handle them better in the museum drawers’.⁷⁸

The species type or norm licenses those who are committed to the cosmopolitan renegotiation of community to mark a strategic break with their stated respect for morphological (or, for that matter, cultural) difference, suturing the universal around those who substantially resemble paradigmatic humanity. In this analysis – and here Le Guin exactly replicates the logic of postwar cosmopolitanism – the wing of Mayr’s museum that is dedicated to the hominid species is expanded, supplemented by some late additions, but still carefully kept separate from the sections devoted to nonhuman life. This humanist commitment sits uneasily with the text’s proliferation of varieties of humanity, which continually threatens to undo the putative centrality of any type or norm, and which invites the refusal of anthropocentrism which follows from the posthumanist reading of the generic conventions of SF that I sketched above: namely, the contingency of every norm in the face of the destabilising encounter with alterity.

The project of postwar universal humanism, of which *The Left Hand of Darkness* is both representative *and* a kind of limit case, strove everywhere to embrace difference even as it had to carefully manage this difference and incorporate it into a familiar, anthropocentric hierarchy of species. The emergence of universal humanity as the subject of the postwar political community, while often little more than notional in a world still dominated by European colonialism, nonetheless represented a substantial advance for marginalised populations. However, the universalising priorities of cosmopolitan humanism were mapped out according to a strategy that permitted – and perhaps demanded – the exclusion of nonhuman life from consideration. The paradox of postwar humanism was that so many of its articulations of universality were expressed through appeals to biological life, where efforts to distinguish between human and nonhuman become especially problematic (even within the humanist tradition). The Universal Declaration of Human Rights’ appeal to biological species membership,

⁷⁷ Charles Darwin, *On the Origin of Species by Means of Natural Selection*, ed. by Gillian Beer (Oxford: Oxford University Press, 2008), p. 41.

⁷⁸ Ernst Mayr, *Systematics and the Origin of Species from the Viewpoint of a Zoologist* (Cambridge, MA: Harvard University Press, 1999 [1942]), pp. 147-48.

The Family of Man's invocation of the 'lyricism of birth' and human reproductivity, and Ursula Le Guin's insistence on community across morphological difference: all of these strategies, pursued rigorously according to their own (often disavowed) logics, lead not to the apotheosis of political humanism but to its dissolution. This is to be welcomed, not in the name of anti-universalism or ethnic particularism, but in the name of a radicalized universalism that might forgo the violence done to those that humanism is constitutively incapable of recognizing.

Conclusion

In the early 1960s, the primatologist Jane Goodall made a number of surprising discoveries during her researches with the chimpanzees of Gombe Stream, Tanzania. Foremost among these was the realisation that adult chimpanzees would ‘fish’ for termites, using sticks as improvised tools to retrieve the insects from their mounds. In the autumn of 1964, she sent a telegraph informing her supervisor, Louis Leakey, of her latest discovery. On hearing of the chimpanzees’ use of tools, Leakey replied, ‘Now we must redefine tool, redefine Man, or accept chimpanzees as humans’.¹ In my final chapter, I argued that efforts to fix the limits of the political community to include all humans (while carefully excluding all nonhumans) will always prove to be an aporetic task. Leakey’s remarks here are an unusually honest confession of the contingency of the humanist species concept, and, moreover, one which grants to technology a central role in mediating species differences. He grants that extant definitions of species may be challenged by the discovery of new behaviours in nonhuman animals, but his remarks suggests that the appropriate response to these discoveries is to respecify what would count as an ontologically meaningful difference between human and animal. His last suggestion – that we accept chimpanzees as our peers – is presumably not intended to be taken seriously. What seems to go unquestioned in humanist thought is the contention that the category of ‘the human’ *must* remain singular and uncontaminated.

One suspects that most of the postwar humanists I have been following throughout this thesis would not have been overly concerned at the discovery that at least some nonhuman animals can use tools. While anthropologists and primatologists may have had a significant investment in the uniqueness of human tool use, in the arts and humanities there was a pervasive suspicion that the hegemony of the technological in postwar society entailed not the confirmation but the dissolution of the properly human. In this thesis I have traced this hostility towards the instrumental and the technological, showing how it is intimately related to – and structured by – the concept of animality. In concluding, I would like to consider how the material I have worked

¹ Jane Goodall, ‘Learning from the Chimpanzees: A Message Humans Can Understand’, *Science*, 282 (1998), 2184-2185 (p. 2184).

through here might open up questions deserving further research, and to consider too how far its influence might persist in our own time. In particular, I am interested in how our own work in the twenty-first century humanities might be linked to the network of relations between technology and species difference that I have been tracing in this thesis.

From the crisis of modernity which was so deeply felt in the mid-twentieth century, we have inherited a series of oppositions which structure the relationship between technology and subjectivity to this day: an opposition between unthinking instrumentality on the one hand, and autonomous reason on the other; and between technologically-pacified *bêtise* and literate individualism. From the perspective of a posthumanist analysis which is attuned to the discourse of species, these oppositions resolve into a simpler tension between the animality of technological culture and the humanity of reason and the arts. Where postwar anthropology recognised tool-use as the key criterion which would establish and maintain human exceptionalism, in the humanities the arts became the central battleground where humanism fought to defend the uniqueness of the human. Ray Bradbury gives perhaps the clearest account of this position. For Bradbury, the arts stand opposed to the technological as something which cultivates the individual subjectivity and personal autonomy which is associated with the properly human.

Bradbury's diagnosis persists in anxieties concerning the fate of the humanities in our own time, where the greatest threat to the continued practice of humanities scholarship is perceived to come from the domination of the university by market-driven, technophilic imperatives linked to more financially lucrative research in the natural sciences and engineering, and by the instrumentalisation of the university in the service of capitalism. As Paul Jay has recently suggested, 'the current humanities crisis [...] has been produced by the convergence of an increasingly technological and instrumental age with the demands of a global economy'.² In response to this technological conjuncture, one strategy deployed by the contemporary humanities is to insist, with Bradbury, on the role of the humanities in (re)producing properly human subjects. In Laurie Schneider Adams' introduction to artistic practice, she contends that 'animals build only in nature, and their buildings are determined by nature'. These animal practices are opposed to the human capacity for art, since after all, 'such constructions are genetically programmed by the species that make them, and do not express individual and cultural ideas'.³

² Paul Jay, *The Humanities "Crisis" and the Future of Literary Study* (New York: Palgrave Macmillan, 2014), p. 18.

³ Laurie Schneider Adams, *The Methodologies of Art: An Introduction* (Boulder, CO: Westview Press, 1996), p. 5.

As Giovanni Aloï suggests, this is ‘a statement designed to stroke readers’ egos, suggesting that their interest in something noble, like art, furthers their own nobility by implication’.⁴ The reader of Adams’ lines is drawn into the confederacy of humanism. In instructing students in artistic practice, Adams equips them with the skills to cultivate human agency, in contradistinction to the ‘programmed’ determinism of the animal (and the technological metaphor of ‘programming’ is hardly accidental). Her emphasis on the individual and the cultural is intended to grant humans sole tenancy over the aesthetic.

At this juncture, we might learn how to proceed by returning to earlier articulations of these parallel oppositions between the arts and technology and between the human and the animal as they were formulated in the postwar moment. In my reading of Bradbury, I suggested that any such attempt to rescue humanist individualism from the pressures of a standardising, anaesthetic technological culture necessarily reproduces the conceptual matrix which relegates non-individuals (including, in practice, many ‘humans’) to subalternity. At a time of planetary climate crisis and ever-increasing violence against the nonhuman world, this seems an unacceptably high price to pay.

I am mindful of Matthew Calarco’s invitation to dispense with the human-animal distinction at the end of his *Zoographies*: ‘Might not the challenge for philosophical thought today be to proceed altogether without the guardrails of the human-animal distinction and to invent new concepts and new practices along different paths?’⁵ Perhaps the task of the contemporary humanities should be to forgo its traditional function as the guarantor of species difference. A more responsive and responsible attitude towards the nonhuman calls for a posthumanities which can think the dangers and promises of technicity without seeing it as a threat to properly human subjectivity, which, as a concept, is as illusory as it is violent. Our present planetary crisis demands a posthumanities that will abandon the defence of human exceptionalism as a necessary condition for developing more sustainable ways of living amongst other animals in a technologically-saturated world.

⁴ Giovanni Aloï, *Art & Animals* (London: I.B. Tauris, 2012), p. xviii.

⁵ Matthew Calarco, *Zoographies: The Question of the Animal from Heidegger to Derrida* (New York: Columbia University Press, 2008), p. 149.

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Filmography

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