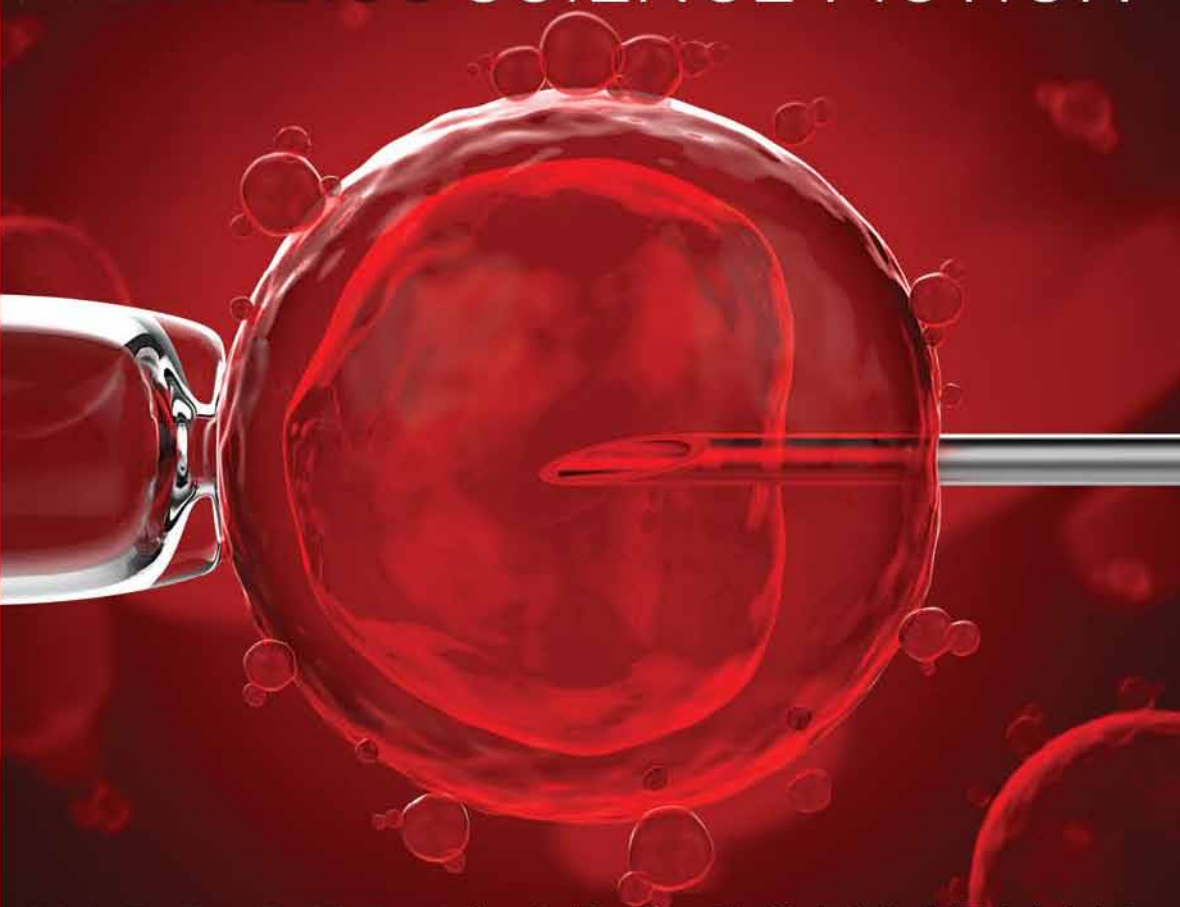


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BIOPUNK DYSTOPIAS

Genetic Engineering,
Society, and Science Fiction

LARS SCHMEINK

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Introduction

These are the wreckers of outworn empires and civilisations, doubters, disintegrators, deicides. (Haldane 45)

In 1923 the famed genetics professor J.B.S. Haldane, demonstrating a penchant for provocation and prophecy, gave a talk on the future of science, claiming that scientific research would flourish in the years to come and that he would make no prophecies rasher than those made by H.G. Wells in his works (26). One very important aspect of science, to Haldane, had been left out of Wells's imaginary due to the shifting scientific interests of different times, and that was the development of the biological sciences. Physics and chemistry, with their 'scientific ideas [... of] flying and radiotelegraphy,' were, by 1923, merely 'commercial problems' whereas, he believed, the future 'centre of scientific interest [lay] in biology' (26). Some of his prophecies were radical, but proved quite accurate. Haldane was the first to foresee the necessary shift in energy production, from coal and oil to wind and sunlight, and proposed hydrogen-powered machinery (30). In regard to biology, his claims were the most outrageous and garnered the strongest opposition at the time. In a science-fictional essay, supposedly to be read by an undergraduate student of Cambridge University in 2073, on the development of biology in the twentieth century, he claimed, among other things, the birth of the first test-tube baby and genetic selection (41). His account was rather optimistic, both in terms of time frame (positing 1951 as the birth date of the first child by in vitro fertilization, whereas in reality it took until 1977) and in terms of its potential to alter the species and offer 'great possibilities in the way of the direct improvement of the individual' (43).

What is even more interesting than his claim about the importance of biological scientific progress, genetics in particular, is his claim that

the inevitable human reaction towards it is repulsion. Drawing on the Greek mythological figures of Prometheus and Daedalus, Haldane argues,

The chemical or physical inventor is always a Prometheus. There is no great invention, from fire to flying, which has not been hailed as an insult to some god. But if every physical and chemical invention is a blasphemy, every biological invention is a perversion. There is hardly one which [...] would not appear [...] as indecent and unnatural. (36)

Whereas Prometheus would be subject to the revenge of the gods, Daedalus – for his biological creation of the Minotaur – would go unpunished by Zeus and Poseidon: The biologist ‘is not concerned with gods’ (37). Instead, Haldane claims, the biologist is faced with ‘the universal and agelong reprobation of a humanity to whom biological inventions are abhorrent’ (37). The physicist threatens divine power in order to claim it for humanity, becoming in stature a god himself (or a Titan, as Prometheus) and by his creation in effect granting humanity its superior status, whereas the biologist (especially the geneticist) threatens humanity, robbing it of its natural place, and is thus seen as a threat to and corruption of the human claim to godliness. Prometheus stole fire from the gods, bringing the light of progress to humanity and securing for himself a token position in the mythology of humankind, whereas Daedalus’s inventions served as warnings that technology never quite turned out for the good and always demanded a price that was too high to pay – the youths of Athens sacrificed to the Minotaur.

The Prometheus myth carries with it the utopian vision of a better future for humanity – fire, light, and technological progress facilitate this change and allow for a utopian view of what is to come. The hero himself might be punished by the gods, but his deed allowed for humanity to grow and become stronger. The myth of Daedalus is born of a similar utopian vision – his inventions are ingenious and tell of humanity’s potential for technological progress – but the tables are turned when it comes to the repercussions. When Daedalus builds a device for the cursed queen of Crete, Pasiphae, which allows her to be mounted by the Minoan bull, and thus in effect helps birth the first xenogenetic creation, the Minotaur, it is not he that is punished but humankind. Because the Minotaur is an unnatural creation, its abhorrent nature shows in its diet of human flesh: From the bull that was supposed to be sacrificed springs forth a monster, to which humans must regularly be sacrificed to keep it appeased. Unwittingly, Daedalus had punished humanity for his unnatural creation by not considering the long-term

effects of what he had invented. His tale, as utopian in vision as it might be, rather shows a dystopian stance towards social and technological progress – it is a cautionary tale.

Haldane shared this view of dystopian warning, cautioning that the biological improvements foretold might also prove morally challenging, that the scientists facilitating them were destined ‘to turn good into evil,’ and that (with the experience of the First World War still fresh in his mind) the flame of curiosity had already once before ‘become a world-devouring conflagration’ (48). He closes his essay with the dire image of the scientist as Daedalus ‘as he becomes conscious of his ghastly mission, and proud of it’ (49), before citing a poem by British poet Robert Buchanan.

The poem, ‘Homunculus; or the Song of Deicides’ from Buchanan’s mystic work *The Book of Orm* (1870), imagines the homunculus, a being representing human scientific endeavor through its origin in scientific creation, who is carefully guided by Satan’s hand to become the destroyer of gods:¹

It seems but yesterday the dim
And solitary germ of him
Glimmer’d most strangely on my sense,
While, with my microscope intense,
I search’d a Beast’s brain-cavern dark:—
A germ—a gleam—a cell—a spark—
Grown to Homunculus, who rides
To my sad Song of Deicides. (Buchanan 229)

The conflict described in the poem and identified with by Haldane is that of science and religion, in which, as Freeman Dyson aptly points out, Daedalus – the scientist – has become ‘destroyer of gods and of men’ (59). In Dyson’s view, Haldane was not a pessimist though; his essay rather needs to be read as warning against ‘the evil consequences of science,’ while at the same time giving his readers the option to overcome the evil and providing the moral leadership to do so (60). Dyson also agrees with Haldane’s prediction about genetic engineering and its socio-political implications, as well as the necessity to overcome its use for evil.

¹ The poem is misquoted by Haldane and has thus for a long time not been attributed. Patrick Parrinder was the first to identify it as Buchanan’s work and to thus draw the connection between Haldane’s Daedalus figure and Satan, the lyrical ‘I’ of the poem (Parrinder 250).

Seventy-five years after Haldane wrote his *Daedalus* essay, reality has caught up with prophecy and warning, and biology (focused in public view on genetics) has taken center stage as the science that promises the most radical changes to modern-day lives. As Michael Reiss argues, 'Genetic engineering raises issues about the nature of life itself, about what it is to be human, about the future of the human race, and about our rights to knowledge and privacy' (13). And Brian Stableford comments that, until recently, the 'growth of knowledge in the biological sciences has lagged behind that in the physical sciences,' that the 'age of mechanical inventions began in the early 19th century, that of biological inventions is only just beginning' (122).

The life-altering progress and radical inventions of the physical sciences, indeed the creation of the scientific concepts as such, are strongly interconnected with both the humanist project and ideas of modernity. The scientific revolution, and especially Newtonian physics, is the basis of our conception of the human as a rational being, in control of its own progress and given free agency in its actions. Building on this legacy is the nineteenth-century notion of humanism – a worldview, however else defined, convinced 'of the centrality of the "human" itself' (Davies 20). It is this uniquely human view of the world that connects humanism not just to science, but to progress and the project of modernity: industrialization, capitalism, sociology, and politics. The concepts *humanism* and *modernity* seem intertwined and remain ideologically central to our times (Davies 5). The question remains, then, how Haldane's futurological predictions, his dystopian words of warning, pan out in regard to these twin concepts, how humanism and modernity change when biologists take their place as 'deicides.'

How deeply biology would come to influence human social interaction is beyond the scope of Haldane's claims though, as the twenty-first century has already proven. Biology, and especially genetics, has become the pivotal concept in scientific research, contemporary strands of philosophy, and even commercial commodification. In terms of science, the Human Genome Project (HGP) became the world's largest international cooperation in biology to date, setting out to sequence the more than three billion base pairs in the human genome, thus allowing the identification and mapping of the complete set of DNA in the human body. The project, which ran from 1990 to 2003, was thus able to provide open-access data on the human genome for research worldwide, which has led to an avalanche of new research opportunities in the diagnosis, treatment, and prevention of diseases ('Human Genome Project'). Successor projects, such as the HapMap (a survey on genetic variations) and the Cancer Genome Atlas (trying

to map the genetic abnormalities of cancer) have built upon the HGP and its success.

The scientific progress made in biology, as well as in computer technology, has also spurred philosophical debate around the nature of the human and its potential for change and development. The Transhumanist Declaration, crafted in 1998, sets out a vision of a better humanity, 'broadening human potential by overcoming aging, cognitive shortcomings, involuntary suffering, and our confinement to planet Earth' ('The Transhumanist Declaration'). The philosophical and scientific movement that followed from this can be seen at work in organizations such as Humanity+, an educational nonprofit organization promoting transhumanist thought, or the University of Oxford's Future of Humanity Institute (FHI), researching the 'big-picture questions about humanity and its prospects,' including 'human enhancement ethics' and the consequences of 'emerging technologies' such as bio- or nanotechnology ('Research Areas').

The influence of biology on society does not end with academic inquiry, though. Rather, the possibilities opened by the HGP have led to a wide acceptance of genetics as a marker of individuality and social identity. Commercial enterprises have picked up on this and developed commodities based in genetics and biological/health self-monitoring. The health sector, for example, has embraced the idea of the 'Quantified Self' (the name of a loose movement) and the potential benefits for their customers, especially when gaining unforeseen amounts of data gathered from self-trackers. 23andme, a consumer service providing individual genome testing, offers another form of self-monitoring. Their service includes genetic testing of your personal genome, mapping out possible health issues or genetic ancestry. Another company, dna11, offers the creation of artworks fully individualized and revolving around the customer by stylizing their DNA into art – genetic identity here becomes self-portraiture.

The impact of genetics is everywhere in twenty-first-century culture, but it is most prominently found in mainstream culture and the popular imaginary of science fiction (sf). In a sense, this book examines the paradigmatic shift from physics to biology in our cultural perception of life-altering and/or life-threatening sciences by this exemplary genre and its visions of a dystopian future. To that end, I strive to determine the changing perception of biological science in examples of visual, literary, and ludic culture from the turn of the twentieth to the twenty-first century in connection to the concepts that inherited their critical potential from modern physical science, humanism, and modernity.

To chart that inheritance and the aforementioned paradigm shift,

manifestations of the sf imaginary seem most suited, as that genre itself is in many scholarly accounts connected to modernity, humanism, and the invention of modern science. Made possible by the Enlightenment, the rational took hold in the literary imagination and replaced the religious and magical sublime with a scientific rationale – Mary Shelley’s *Frankenstein* becoming the precursor to a new and radically different genre (see Aldiss 3; Clute; Freedman). ‘Science fiction is the literature of change,’ it is the literature of ‘ideas worked out in human terms’ (vii), as James Gunn points out. There is an inherent connection of science, modernity, and humanism that focalizes and brings about a change at the beginning of the twentieth century, finding an outlet in sf as ‘a literature of technologically saturated societies,’ as Roger Luckhurst argues:

Mechanized modernity begins to accelerate the speed of change and visibly transform the rhythms of everyday life. [...] SF texts imagine futures or parallel worlds premised on the perpetual change associated with modernity, often by extending or extrapolating aspects of Mechanism from the contemporary world. In doing so, SF texts capture the fleeting fantasies thrown up in the swirl of modernity. (3)

As such, the sf imaginary is ideally suited to reflect changes in technological advances, for example those that Haldane claimed have the greatest potential for shock and social impact, such as genetic engineering. One mode of literature that is most poignantly capable of expressing this impact and providing warning, as well as the hope to overcome misuse of such technology, is the utopian mode, which is by the end of the twentieth century firmly anchored in sf. As Alcena Madeline Davis Rogan points out, utopia in the tradition derived from Thomas More’s *Utopia* (1516) does not refer specifically to a positive or perfect society, but rather ‘serves as a blank slate upon which [the author] inscribes a world that is intended to estrange the contemporary reader from their conditions of existence’ (309). As two sides of the same coin, both the eutopian (‘good place’) and dystopian (‘bad place’) imaginations function as reminders of possibility for change in society. The connection of sf and the utopian, according to Peter Fitting, develops when society becomes aware of two concepts central to science fiction, those of ‘the future and of the possibility of social change’ (138) and ‘the effects and importance of science and technology’ (139) for such a change. Utopian sf, he argues, has the ability ‘to reflect or express our hopes and fears about the future, and more specifically to link those hopes and fears to science and technology’ (138). Within the spectrum of the

utopian imagination, the positive utopia dominated before the twentieth century, whereas dystopia prevailed during most of the twentieth century (see Claeys, 'Origins'; Moylan, *Scraps*; Baccolini and Moylan). As Tom Moylan has argued in his books *Demand the Impossible* and *Scraps of the Untainted Sky*, neither form was ever fully abandoned, utopianism instead oscillating between both, and both exist in a continuum that allowed for crossovers which he called 'critical utopia' (a positive utopia that shows critical reflection and 'awareness of the limitations of the utopian tradition'; *Demand* 10) and 'critical dystopia' (a negative utopia that 'make[s] room for another manifestation of the utopian imagination within the dystopias [*sic*] form'; *Scraps* 195). The works discussed in this study are such critical dystopias, negative depictions of future societies that critique the utopian project, while retaining a possibility for hope or a different outcome. They are imaginations that produce 'challenging cognitive maps of the historical situation' (Moylan, *Scraps* xi) that shape society's reaction by providing not a positive blueprint but a warning of what could be, should society not change direction. As science fiction, these critical dystopias thus serve to address current technological changes, their social and political impact, as they are felt in our lives. More so, sf imagines possible extrapolations of how these changes progress and might turn out should the current path be followed further.

Questions of genre and a limitation of corpus are never as clear-cut as scholars would like them to be, so the bounds of my research are somewhat arbitrary in the choice to examine contemporary sf works beginning roughly around 2000, which of course also strategically reflects the year that the Human Genome Project first announced that a draft of the human genome was mapped. Starting from Haldane's prophetic vision of Daedalus as the biologist bound to present society with shocking discoveries, I determine genetic engineering (epitomized in the public view in the HGP) as the key biological development to realize that vision. I believe that with the beginning of the twenty-first century there has been a shift in sf away from a cyberpunk imaginary, best embodied in Haraway's cyborg and the visceral technology of mechanical implants, body augmentations, and the virtualities of William Gibson's 'consensual hallucination that was the matrix' (5), and towards another technocultural expression of scientific progress: One that favors genetic engineering, xenotransplantation, and virology and is thus best expressed in the metaphor not of the cyborg but of the splice. It can already be found in what Brian McHale refers to as the "'bio-punk" sub variety of cyberpunk SF' (257), which has since grown into a larger and more varied cultural formation that spans far beyond the confines of the simple sub-variety of literary expression McHale refers to. Similar to Thomas

Foster's argument that there has been an 'inflation and dispersal of reference' (xvi) of the 'original cyberpunk constellation of ideas, tropes and practices' (xv) that encourages reinvention, reiteration and renegotiation of cyberpunk, I argue that by the end of the twentieth century, the genetically engineered posthuman has brought forth a cultural formation of *biopunk* that spans many different forms of culture. I will return to the problematic of both origin and variance of definition of the term in chapter 2, as it includes not only cultural artifacts, but also social and political practices (e.g. biohacking, DIY biology) and a diverse array of philosophical viewpoints. For now it should suffice to say that my remarks are mainly concerned with cultural artifacts that employ biological technology (especially genetic engineering) as central nova to mark a turn towards the posthuman and negotiate possible social and political changes and their consequences.

There are of course many works of sf that have touched upon genetic engineering or other biotechnologies long before McHale introduced the term 'biopunk' and thus gave a name to the cultural formation that is the focus of this book. As Helen Parker points out in her 1977 study *Biological Themes in Modern Science Fiction*, the biological as 'thematic emphasis emerges very early in the development of science fiction' (5) and can be found in Wellsian proto-sf as early as the late nineteenth century. In her opinion, even though the field is largely ignored in its own right by historically minded scholars, the genre presents three distinct concepts of biology that can be found in sf from the time of its inception: 'evolution, genetics, and comparative or exobiology' (11). 'Genetic science fiction,' Parker argues,

develops two major premises. One approach [...] centers on the genetic accident, the uncontrolled and unexpected alteration of a species. [...] The other main approach argues the feasibility and desirability of planned genetic alteration, changes controlled either by man or by an alien force. In both types of genetic science fiction, the views finally offered parallel very closely those of evolutionary fiction, sharing especially an emphasis on the importance of adaptation to surrounding conditions. (35)

As such, genetic sf up until the 1970s uses mainly research in heredity (based on the works of Gregor Mendel, Hugo DeVries, and T.H. Morgan; see Parker) to motivate early forms of genetic engineering. Mainly, characters either are exposed to gene-altering radiation (nuclear, Röntgen, or alien), thus accidentally mutating their genome, are part of a large-scale breeding effort via eugenics, or are created through surgical

or chemical alteration (not necessarily a form of *genetic* manipulation). Early examples of such genetic or genetically inspired sf include the surgical creation of animal–human hybrids in H.G. Wells’s *Island of Doctor Moreau* (1896), the creation of a populous via test-tubes in Aldous Huxley’s *Brave New World* (1932), and the creation of supermen through radiation in John Taine’s *Seeds of Life* (1951) or through an effective breeding program as in Robert A. Heinlein’s novel *Beyond This Horizon* (1942/48). In terms of their utopian potential, dystopia (as in *Brave New World*) and eutopia (as in *Beyond This Horizon*) lie close together and prove that the technology was seen to contain the potential for both positive and negative social change.

Beginning with the discovery of the double helix by James Watson and Francis Crick in 1953, the depiction of genetics in sf shifted slowly but radically. Especially the first successes in recombinant DNA by researchers at Stanford University in 1971 (see Martinelli 336) fostered our contemporary understanding of genetic engineering and its possibilities. Instead of heredity and eugenics, this research made possible the direct insertion of DNA sequences into other organisms. It led to genetic engineering being seen not as a ‘fearful, undefined prospect,’ but rather as ‘a multibillion-dollar industry’ (Slonczewski and Levy 180). Since then, the ‘accumulating advances of the last half-century have found expression in sf,’ as Joan Slonczewski and Michael Levy argue, in depictions of cloning, genetically enhanced societies, and organ harvesting (180–81). Their examples include novels about human cloning such as Kate Wilhelm’s *Where Late the Sweet Birds Sang* (1976) and C.J. Cherryh’s *Cyteen* (1988), novels about genetically altered societies like Brian Stableford’s *Inherit the Earth* (1998), and organ farming in Michael Marshall Smith’s *Spare* (1997). In these books, eutopian moments exist within the more dystopian settings, thus providing divergent readings of the possibilities of change and the anxieties evoked by biotechnology.

As I have shown, biological and even genetic sf has existed since at least the late nineteenth century, but it is my belief that with the turn of the twenty-first century, the genetic has become not just a theme in sf, but rather a cultural formation that transcends the borders of the literary genre and establishes itself in mainstream culture. Sarah Herbe argues that while ‘genetic engineering became a popular topic in science fiction in general from the 1960s onwards, it was not accepted immediately into the repertoire of hard science fiction writers [...] It was only with [hard sf’s] new upsurge beginning in the 1990s that genetic engineering was firmly established as “appropriate material”’ (10). I would reject the notion that genetics gained popularity in

1960s sf, rather arguing for a shift in the depiction of genetics in sf a decade later, in the 1970s, triggered by research in recombinant DNA. But still, this development took place only within a very small and specific subset of literature (sf, more specifically hard sf) and had not found recognition in mainstream culture. In terms of the popularity of genetic engineering as a topic and its transformation into a broader category – coinciding or cross-pollinating with the resurgence of hard sf following in the wake of cyberpunk – I follow Herbe in assuming the (late) 1990s as the origin point of a new development in genetic sf. This is the origin point of biopunk (genetically engineered posthuman sf) as a cultural formation.

One reason why genetic engineering took till the 1990s to become recognized might be that biological research rather played a backseat role in the scientific progress of the twentieth century – at least in terms of a general public recognition. A quick survey of *Time* articles, especially cover stories, which I submit as a cursory suggestion of mainstream media news coverage (not as empirical evidence), reveals this discrepancy quite impressively: Watson and Crick's discovery in April 1953 is completely ignored by the magazine, receiving not even a news item. Biogenetic progress first features prominently in the issue titled 'The New Genetics: Man into Superman' (April 19, 1971), prompted by the aforementioned research in recombinant DNA at Stanford University. In this special issue, promises and problems of the new science are presented to the unknowing public. The articles in that special section seem eutopian in their praise for genetics in terms of its power to cure hereditary diseases such as cystic fibrosis, diabetes, Down syndrome, and even cancer as well as its possibility for some rather far-fetched choices of genetic manipulation (such as creating a human with a two-compartment stomach to digest raw plant matter or with regenerative powers in case of organ failure). Interestingly, the main article of the special section closes with the statement that genetic engineering 'could well herald the birth of a new, more efficient, and perhaps even superior species' – suggesting a development towards the posthuman while raising the question: 'But would it be man?' ('The Body').

Afterwards – aside from an issue on the successful creation of test-tube babies (July 31, 1978) – no other genetic invention features on the cover of *Time* until 1989, when the Human Genome Project announced its 'monumental effort that could rival in scope both the Manhattan Project [...] and the Apollo moon-landing program. [...] The goal: to map the human genome and spell out for the world the entire message hidden in its chemical code' (Jaroff). Between 1990 and 2003, every couple of years biogenetic research becomes an issue worthy of

large-scale coverage: 'Genetics: The Future Is Now' (January 17, 1994), 'Will There Ever Be Another You?' (March 10, 1997), 'The Future of Medicine' (January 11, 1999), 'Cracking the Code!' (July 3, 2000), 'Human Cloning Is Closer Than You Think' (February 19, 2001), and 'Solving the Mysteries of DNA' (February 17, 2003). In the 14 years of the HGP, seven *Time* covers were dedicated to genetics, whereas the 35 years before, since Watson and Crick's breakthrough, only provided two covers, one of which was devoted to reproductive medicine rather than clear-cut genetic engineering. It seems obvious, then, that beginning in 1989, public interest in genetic engineering began to grow, peaking somewhere around the turn of the century, when the HGP finalized its work and published its results in *Nature* (February 15, 2001) – fueled over the century by bio-ethical controversies such as the cloning of the sheep Dolly as well as the gene patenting and for-profit work of Craig Venter and his company Celera (see Kluger; Roberts).

It seems only natural, given the mainstream interest in genetic engineering, that the creative imagination of writers and artists would be attuned to this development and respond in kind – with early examples of genetically engineered sf in the 1980s and a growing number of artifacts negotiating this technology as the HGP went along. I will discuss this development and the cultural formation it created in the next chapter. But as cultural artifacts, dystopian and science fiction literature, film, television, and video games (as well as other media) are only outwardly concerned with the future; their main concern rather is with the present and with developments within contemporary society and how they influence human lives. As such, they are fictional examples of the utopian imagination, whose job is at heart akin to that of the 'sociological imagination,' as Zygmunt Bauman describes it: 'a translation of the individually faced and privately tackled problems into public, collectively confronted issues and of public interests into the individually pursued life strategies' ('Chasing' 123). Sf especially tackles the social issues that concern themselves with or are derivative from technological progress and a shifting cultural understanding of science.

At the end of the twentieth and the beginning of the twenty-first century, these issues include what Bauman has conceptually referred to as a shift from solid to 'liquid modernity' and which needs to be understood among other things as the evanescence of all forms of social stabilizing institutions, such as nation, religion, class, or family relations – the concept will be described in detail in the next chapter. Bauman has been criticized for his rather dark sociological vision and sometimes even been declared a pessimist (see D. Davis, 'Preface'; M. Davis) because of his strong criticism of the current globalized capitalist system and the

austerity of his vision. Proponents of his sociology try to reclaim his utopian impulse by pointing to the ‘transformation’ or a moral ‘compass’ orienting his thought (M. Davis). Hoping Bauman would provide a utopian blueprint for future action seems to be beside the point though, as Michael Hviid Jacobsen argues:

Zygmunt Bauman’s work is notorious for offering no nostrum, no wonder-cure and no social elixir against the problems confronting contemporary society. His apparent critical pessimism must rather be seen as a wake-up call to the world. He offers no neutral perspective on the world but a critical, counter-cultural, value-oriented and normative utopian vantage point. (‘Bauman on Utopia’ 227)

The tension apparent in these comments and critiques, I believe, originates in the unacknowledged discrepancies of the definition of ‘utopia’ in terms of common usage, sociology, and literary studies. Common usage, more often than not, sees ‘utopia’ as the unreachable perfect life, the dream of a better world, the ‘castles in the air’ that Lewis Mumford so emphatically urged us to build from hope: ‘When that which is perfect has come, that which is imperfect will pass away’ (307–08). In terms of sociological thought, ‘utopia’ refers to the process of betterment, the analysis of what is and the theoretical approach for what might be: ‘Utopia is thus a way to approach the all too human being-in-the-world. It is a journey to that which is not-yet, a commitment to the possible even when only the probable or even impossible might seem overwhelming’ (Jacobsen and Tester 1). In this line of thought, utopianism remains hopeful of providing a blueprint for a better future – hence the disappointment at Bauman’s refusal to provide any. Literary theory, on the other hand, sees ‘utopia’ as a neutral term that incorporates any form of ‘social dreaming’ (Sargent 1) and thus also allows for dystopia, the negative side of the dream, the nightmare to be warned about, as equally utopian. Using the concept of dystopia – more specifically, what literary critics have termed the ‘critical dystopia’ (Sargent 9; Baccolini and Moylan 3; Moylan, *Scraps* xv) – as an additional screen onto which to project Bauman’s musings on liquid modernity reveals his critique as undermining our clear-cut conceptions of (e)utopia/dystopia and finding a way, as Jenny Wolmark once remarked about Margaret Atwood’s work, to ‘critically voice the fears and anxieties of a range of new and fragmented social [...] constituencies and identities in post-industrial societies’ (cited in Baccolini and Moylan 4).

One way for the new and fragmented identities to emerge lies in Haldane's Daedalus and the potential of genetic engineering, which by the beginning of the twenty-first century has manifested itself culturally as a category actively engaging, challenging, negotiating, and even transforming contemporary conceptions of the human. The results are cultural and critical expressions of a posthuman condition, a development that motions towards a point not just 'after-the-human' but also beyond humanist thinking. The social, political, and technological changes inherent in liquid modernity, late capitalism, and globalization also find an outlet in the discourses on the posthuman. Generalizing the many variants, two main strands of posthuman discourse emerge.

On the one hand, the continued technoscientific progress makes possible 'the enhancement of human intellectual, physical, and emotional capabilities' and the general improvement of human living (both in quality and in duration) that leads to an intellectual movement of 'transhumanism' (Joel Garreau, cited in Wolfe, *What Is Posthumanism?* xiii). Transhumanism, as promoted by such prominent figures as robotics scientist Hans Moravec or FHI philosopher Nick Bostrom, challenges the idea of the human by engineering solutions to enhance its capabilities and to push its limitations. Based in rational humanism, transhumanism, of course, further focuses the humanist privileged subject position in that it hinges on individual advancement through technological means and centers on the selfish utopia of extending the humanist subject into new technologically embodied realities. Here, then, I see reflected the sociological notion of a utopian blueprint (literally, the technical blueprint of robotic existence beyond human bodily suffering) that allows for a better life once the transhuman state has been reached.

On the other hand, critical posthumanism, as promoted by scholars such as Rosi Braidotti, Cary Wolfe, or Neil Badmington, better reflects the utopian critical perspective as mentioned by Wolmark, in that it similarly addresses subjectivity as hybrid, multiple, and continuously changing. Instead of hierarchizing existence and granting the human a power over and use of technology, nature, and others in a utopian fantasy of hegemony, critical posthumanism understands 'the prosthetic coevolution of the human animal with the technicity of tools and external archival mechanisms' (Wolfe, *What Is Posthumanism?* xv) as well as with non-human others. The 'posthuman challenge' (Braidotti 37) thus presented is an expression of the end of man as the center of humanist thinking (Hassan 213; Foucault, *Order* 386–87), which at the same time 'means that the structural others of the modern humanistic subject re-emerge with a vengeance' (Braidotti 37): The new posthuman condition needs to find ways in which to address the alternatives

to radical othering and to counter the sexualized, racialized, and naturalized positions apart from the humanist subject (white, wealthy, healthy, educated, heterosexual, human). Further exploration of this subject and the distinct variance in posthumanist conceptions will also be undertaken in the next chapter.

Liquid modernity, posthumanism, and genetic engineering are the power sources from which the 'shocks' that Haldane so aptly conjured up 90 years ago emanate: These shocks are the work of Daedalus and would have 'immediate and disruptive effects upon society' (38). The above concepts represent the shifting focal points of both science and society and will in the following be my guiding terminology for an analysis of examples of twenty-first-century dystopian science fiction.

Returning to my original premise, I believe that the rise of biology as the driving force of scientific progress, the mainstream attention given to genetic engineering in the wake of the Human Genome Project, the changing sociological view of liquid modernity, and the shifting discourses on the posthuman form a historical nexus that produces the cultural formation of biopunk. My analysis deals with dystopian science fiction artifacts of different media from the year 2000 onwards that project a posthuman intervention into contemporary socio-political discourse based in liquid modernity in the cultural formation of biopunk. Biopunk makes use of current posthumanist conceptions in order to criticize liquid modern realities as already dystopian, warning that a future will only get worse, and that society needs to reverse its path, or else destroy all life on this planet. As Rosi Braidotti argues, 'there is a posthuman agreement that contemporary science and biotechnologies affect the very fibre and structure of the living and have altered dramatically our understanding of what counts as the basic frame of reference for the human today' (40). This book analyzes this alteration as directors, creators, authors, and artists from the field of science fiction see it.

In chapter 2, I provide an inventory of the different theoretical strains pertinent to my discussion and will elaborate the concepts introduced in this chapter. Starting from the premise of science fiction as a literary (and more broadly speaking cultural) mode that is ideally suited to negotiate technoscience and its influence on social and political structures, I will introduce and define the cultural formation of biopunk out of its historical precursor cyberpunk. Further, I will shortly discuss the ongoing change of the formation from literary mode to socio-political and scientific movement and discuss the limitations of the terminology. Then, in order to situate biopunk as a contemporary creative intervention into posthuman discourses, I will define and elaborate the historic origin and contemporary use of the posthuman, anchoring it in discussions

of humanism, anti-humanism, and finally posthumanism, specifically differentiating between transhumanism and critical posthumanism as the two current theoretical positions that form the debate. In the third section of chapter 2, I will then establish the sociological frame of my thesis, positing that contemporary society needs to be understood as formed by what Zygmunt Bauman calls liquid modernity. The chapter elaborates the dissolution of social institutions and the shifting of focus from public debate onto private life choices, the global dimension of current political issues, and, in contrast, the individualization of solutions to those issues. In describing liquid modernity as fraught with global issues of precariousness, I argue, Bauman presents sociological thought akin in its function to the cultural artifacts in the mode of dystopia. Liquid modernity, as critical dystopian present, consequently demands to be understood as warning about current tendencies in society, as criticism, and even more importantly, as an education of society in regard to its own needs and desires. In reviewing the utopian imagination, its history, terminology, and function, I thus conclude the theoretical frame in which to read contemporary biopunk culture.

Chapter 3 analyzes two exemplary literary works dealing with the creation of new posthuman species as a consequence of contemporary consumer society. With liquid modernity commodifying all aspects of life, as described by Bauman, the logical extrapolation, made possible by genetic science rapidly catching up to science-fictional possibility, is the commodification of all life itself, including the human. Margaret Atwood, in her recently completed 'MaddAddam' trilogy, and Paolo Bacigalupi, in his 'Windup' stories, both discuss future worlds that build upon current tendencies of an extreme consumer society and the sea change of human impact on *zoe*, bare life, in the Anthropocene. Both story cycles enhance present dystopian tendencies of liquid modernity to explore the consequences of the hypercapitalist commodification of life and the effect this development would have on the issue of human subjectivity. In both story worlds, *zoe* is reduced to its mechanical, material quality and appropriated for consumption, manifest expressly in the changing status of the human into the inhuman, non-human, and posthuman. In chapter 3, I discuss this shift in the perception of the human and the consequences of posthuman social development. Most importantly though, in exploring the posthuman as an alternative form of communal and social practice, both literary works provide for a eutopian moment in the dystopian imagination – allowing a hybrid, changing, and multiple posthuman perspective to emerge.

Chapter 4 similarly reflects on the creation of the posthuman, this time concentrating on the genetic manufacture of life in Vincenzo

Natali's film *Splice* (2009). In shifting the medium of the discussion, the more private perspectives of posthuman creation and especially the creature itself are foregrounded by foregoing the larger, social discussion of the consequences provided in chapter 3. Instead, I analyze liquid modern realities and the loss of stability in its personal dimension, such as love, sex, and procreation. The film, as a biopunk adaptation of the classic Frankenstein story, makes elaborate use of the metaphor of the monstrous to characterize contemporary society and its desire to liquefy personal bonds and relations. The posthuman becomes monstrous allegory for the liquid modern wish to forego social commitment, especially and most frighteningly reflected in concepts of love and motherhood, where the film warns about the interpersonal consequences of relegating procreation to science and extracting it from stable, secure social relations.

Whereas the reflector of the other is used to shed light on the social and private consequences of posthumanism in terms of community, motherhood, and partnership in chapters 3 and 4, chapter 5 deals with the personal consequences of a posthuman subjectivity and the task of identity creation. In terms of liquid modernity, Bauman argues that risks and threats are becoming ever more global but remain systemic, while at the same time the solutions to these issues are relegated to the individual. The existence of such a noticeable gap between society's insistence on individuality, autonomy, and self-assertion on the one hand, and the systemic risks to this individuality, caused by a globalized flow of information, technology, and politics, on the other, is thus the argument of my analysis of the video game *BioShock* in chapter 5. Science fiction as a genre here allows for the extrapolation and exaggeration of this gap by employing the posthuman as an extreme possibility of human identity creation. The dystopian imagination provides a bleak emphasis of the science-fictional dimension of consequence in terms of this development, by providing an alternative history in which rampant individualism meets an extreme form of consumer society. The human body has become the battleground of liquid modern desires to form and consume identities, which is enacted in a fluid posthumanity. Further, the medium of the video game uniquely provides the specific ideological commentary on the systemic nature of the illusion of autonomy, especially in liquid modern consumer society. As such, *BioShock* is an enlightening meta-commentary on the contradictory nature of systemic risk, *de jure* individualization, and the search for utopian spaces.

But whereas *BioShock* perceives utopian moments merely in accepting the systemic conditions as a given and hunting for the individual solution and the personal gain, the TV series *Heroes*, discussed in chapter 6, is

more optimistic in its depiction of the social consequences of posthuman evolution and argues for the possibility of change. The show's premise of posthumanity as a result of evolutionary mutation reflects these radical changes in subjectivity not onto an elite few, as in classic superhero narratives, but onto everyday people. The series consequently emphasizes the potential of the posthuman condition as a catalyst for global social and political change – a solution to the 'big issues' that elude the current institutions of power. The posthuman becomes the site of struggle over the potential changes to the future, in effect, over the concept of utopia. In contrasting dystopian futures with the present possibility of change through posthumanity, the show allows a utopian space to emerge, in which global issues such as the war on terror can be solved and attacks such as those on 9/11 could be prevented. In this, *Heroes* returns to humanist notions and concepts of history as events shaped by exceptional individuals, while at the same time complicating them with communal images of a cooperative and interconnected posthuman subjectivity.

In chapter 7, then, I return to the changed social and political realities of the new millennium and the post-9/11 world, connecting global terror with the recent success of zombie films in mainstream culture. The renaissance of the zombie film can be directly linked to its allegorical depiction of viral, off-scene terror and the dystopian future of a post-apocalyptic world. In analyzing post-9/11 zombie films, especially the *Resident Evil* film series and the *28 Days* franchise, the chapter discusses liquid modern anxieties as connected with terrorism and globalization. The films reimagine the zombie in terms of biological disaster – as viral, infectious, and unseen – in order to acknowledge the new form of terror emergent in 9/11. In appropriating this biopunk context, contemporary zombie films make available a cultural negotiation of the liquid modern logic of necropolitics (as an extension of biopolitics) and the negation of human and non-human others through technoscientific means. By casting humanity as *homines sacri*, biopunk zombie films allow for a witnessing of a radical change of the social order. Zombies, in these films, present a possible future that imagines posthuman subjectivity in drastic and extremely jarring imagery.

As stated above, all of these cultural artifacts thus provide contemporary society with exactly those imaginations which I term biopunk dystopias. But before I turn to the exemplary analysis of these artifacts, I will discuss the theoretical framework of this book.

Dystopia, Science Fiction, Posthumanism, and Liquid Modernity

Utopias share with the totality of culture the quality [...] of a knife with the edge pressed against the future (Bauman, *Socialism* 12)

2.1 Science Fiction

The world has become *science-fictional*, to borrow a term from Istvan Csicsery-Ronay, Jr. (*Seven Beauties* 1). We¹ are now, at the beginning of the twenty-first century, living in a world that is harder and harder to grasp, that moves ever faster, transforms radically on a daily basis, and confronts us with situations that seem outrageously beyond the scope of our understanding. It is in this world, we feel, that sf has become not

¹ In a book dealing with posthumanism, a few words on the use of the word 'we' are in order. As Bill Readings has rightfully pointed out (with reference to Lyotard's *The Differend*), the use of 'we' in critical writing is deeply entrenched in conceptions of humanism and universalism, which need to be acknowledged because 'the homogeneous "we" is not innocent, [...] its union of the "I" and the "you" is the domination of the sender or speaker and the suppression of the receiver or hearer' (118). Consequently, in a book promoting the idea of a posthuman, hybrid, multiple, and protean subjectivity beyond the values and mores of humanism, the use of a naturalized, universal 'we' obviously proves problematic. Neil Badmington suggests the use of quotation marks to signal such a problematic position (*Posthumanism* 1, note 3). Other writers of posthumanism (Wolfe, Braidotti) seem to have no such qualms, using the term without a mention of its humanist origin. I would like to use the middle position and proclaim that when using the 'we' (which I will do in the following without quotation marks) I am aware of its genealogy but reject any notions of universalism and/or discourses of domination that are implied in it.

just a literary genre but a mode of response, almost an epistemological category:²

As the world undergoes daily transformations via the development of technoscience in every imaginable aspect of life, (and, more important, as people become aware of these transformations) sf has come to be seen as an essential mode of imagining the horizons of possibility. However much sf texts vary in artistic quality, intellectual sophistication, and their capacity to give pleasure, they share a mass social energy, a desire to imagine a collective future for the human species and the world. (Csicsery-Ronay, *Seven Beauties* 1)

Consequently, the science-fictional has become ubiquitous in much of our everyday culture, from newspapers and political discourse (see Barr) to the use of sf elements in global media ‘outside of traditional venues’ (Bould and Vint 202), and its proliferation in circles of high culture (formerly strongly opposed to ‘genre fiction’; see Rieder), as witnessed by science-fictional forays of novelists such as Philip Roth (*The Plot Against America*, 2004), Richard Powers (*Galatea 2.2*, 1995), or many of the authors Bruce Sterling grouped together in his coinage of the ‘slipstream’ subgenre (‘Slipstream’).

In an attempt to define what he means by science-fictionality, Csicsery-Ronay argues that it is linked to two ‘forms of hesitation, a pair of gaps’ (*Seven Beauties* 3): Firstly, the historical dimension of possibility – are we at this point in our technoscientific progress able to actually do this? Is this possible? And secondly, the ethical dimension of consequence – if we do this, what would the repercussions be and how would things change in accordance? Would it be good or bad to do this? Both dimensions are part of science-fictionality and determine the extent to which we think about the future as historical process. As Csicsery-Ronay points out: sf ‘is not a genre of aesthetic entertainment only, but a complex hesitation about the relationship between imaginary conceptions and historical reality unfolding into the future’ (*Seven Beauties* 4). As such, sf is a direct interaction with contemporary culture that lies at the nexus of technological, scientific, critical, and social thought in that it determines what we conceive of as possible in and

² As a literary genre, science fiction has a rich and varied history, which it would be impossible to do justice to in the context of this book – readers are instead referred to *Science Fiction* by Roger Luckhurst or *The Routledge Concise History of Science Fiction* by Mark Bould and Sherryl Vint for two excellent accounts of the genre’s historical perspectives.

for our future. Analyzing the collective desires and fears that determine such conceptions grounds us in the present and the social realities from which the science-fictional imagination starts.

In the case of biological sf, I have explained in the last chapter that developments in technoscientific progress have engendered different and changed perspectives of fictional explorations of the genetic since the end of the nineteenth century. Determined by evolutionary and hereditary approaches, much early biological sf necessarily took a long-term and large-scale approach to human development that today we might consider to be part of the space opera subgenre, which is 'set in the relatively distant future and in space or on other worlds' (Hartwell and Cramer 17). As David Hartwell and Kathryn Cramer explain in their introduction to *The Space Opera Renaissance*, the term 'space opera' has shifted in meaning from Bob Tucker's original pejorative dismissal of it as 'hacky, grinding, stinking, outworn space-ship yarn' (cited in Hartwell and Cramer 10) to become a nostalgic and even praiseworthy term that today usually refers to ambitious sf speculations. I do not wish to engage in a discussion on the quality of sf, but here refer only to the scope of much biological sf with a hereditary/evolutionary background as being akin to the space opera tradition (Parker, chapter 3; Herbe 56).

In addition, the general ignorance of biological processes, especially in terms of genetics, and the contradictory theories still in circulation (such as the existence of "vitalistic" or "emergent" principles distinct from physical or chemical laws') until the 1970s, kept much biological sf 'somewhat vague as to mechanisms' (Slonczewski and Levy 175). By the end of the 1970s, though, biology had moved beyond the hereditary model as a basis for genetics and had embraced resequencing through rDNA as the most promising technological development. From this point on, discourse on biology took a science-fictional turn in that the radical alteration of the human genetic structure came into scientific reach. In regard to the sf dimension of possibility, genetic engineering had by 1980 become realizable and thus an object of near-future extrapolation rather than intergalactic speculation.

Parallel to the biological research that started with Watson and Crick in 1953, another scientific development had come to full fruition by the 1980s, one that would overshadow genetic engineering at least for a while: information and communication technology. The invention of the computer, claimed by Dyson in 1994 as Haldane's biggest oversight and 'the most potent agent of social change during the last fifty years' (58), began roughly around the same time as genetics did in the late 1940s with 'John von Neumann, the mathematician who consciously pushed mankind into the era of computers,' dreaming of artificial intelligences

and self-reproducing automata (Dyson 59). By 1982 the computer had even become *Time* magazine's 'Man of the Year' (see the issue of January 3, 1983). Robotics and computer science had progressed immensely and the cyborg became the central metaphor to understand social and cultural reality as a construction of multiple identities, a metaphor truly made for the late twentieth-century imagination: 'a hybrid of machine and organism' (Haraway, 'Cyborg Manifesto' 149).

During the 1980s biology remained in the background – noticeable but not dominant – mostly upstaged by information technological progress and the establishing of network society, and surfacing in the cultural imagination only sporadically. In terms of science fiction, cyberpunk claimed to be the literary incarnation of the new technoscientific developments, both informational and biological, as Bruce Sterling points out in his now infamous preface to the *Mirrorshades* anthology:

For the cyberpunks, by stark contrast, technology is visceral. Certain central themes spring up repeatedly in cyberpunk. The theme of body invasion: prosthetic limbs, implanted circuitry, cosmetic surgery, genetic alteration. The even more powerful theme of mind invasion: brain-computer interfaces, artificial intelligence, neurochemistry-techniques radically redefining the nature of humanity, the nature of the self. (xiii)

Cyberpunk thus inserts itself into posthuman discourse by providing a science-fictional imaginary for both cyborg-enhanced and genetically engineered humanity and the social implications both technologies bring with them. The exact demarcation of who or what *is* or *is not* cyberpunk is contested among critics, but the general agreement on the historical 'movement' is to limit it to a specific set of writers from the 1980s (Murphy and Vint xi; Butler 9). In terms of my argument, a wider understanding of the term is needed though, as in the 1990s cyberpunk underwent a 'sea change into a more generalized cultural formation' (Foster xiv) and began to proliferate into what Andrew Butler calls 'Post-Cyberpunk and Cyberpunk-Flavoured' (15) fiction. I agree with Graham Murphy and Sherryl Vint that cyberpunk offers diversity and relevance especially through 'its transformations into a more generalized set of practices' (xiii), proving its persistence in 'our cultural imaginary' (xvii). For me then, at the heart of cyberpunk fiction is the radical breaking up of dichotomies and the destabilizing of boundaries: machine/human, nature/culture, male/female, high culture/low culture, body/mind. Because of this, cyberpunk is believed by many critics to embody the postmodern, post-industrial, globalized,

and late-capitalist world at the end of the twentieth century (Luckhurst 196ff.; McHale 225ff.). Fredric Jameson sees in cyberpunk 'the supreme literary expression if not of postmodernism, then of late capitalism itself' (*Postmodernism* 419), whereas Csicsery-Ronay argues that by 1990 sf and its topoi need to be understood not just as a 'major symptom of the postmodern condition, but as a body of privileged allegories, the dream book of the age' ('Postmodernism' 305).

As such, cyberpunk sf is deeply ingrained in the 'ideologically riven' (Luckhurst 202) historical moment of the 1980s. Cyberpunk's societies are fraught with inequality, exploitation, and insecurity. Its worlds are unstable and fragmented, its representation stressing the fluidity of its ontological aspects (McHale 247). Cyberpunk emphasizes the construction of a globalized society into class or caste systems, showing off the mobility of characters from the elite class and the rigidity of the lower classes.

In addition, cyberpunk strikes a revolutionary, anti-establishment, anti-capitalist pose similar to its nominal relation 'punk.' To facilitate this critique, cyberpunk essentially orchestrates the evanescence of the human body initiated by 'multinational capitalism's desire for something better than the fallible human being' (Csicsery-Ronay, 'Cyberpunk' 191). This casting of multinational corporations as villains and the ensuing portrayal of a cold, inhuman, consumerist, and capitalist society as well as the genre's 'cheerfully nihilistic denial of middle-class American values' (Kessel 116) has informed the understanding of cyberpunk as a political movement. The punk reference in its name determines a political stance that can be understood as an anti-authoritarian 'urban political disaffection' forming 'a stylization of revolt' (Bould, 'Cyberpunk' 218) that in the cyberpunk context comes to represent the equivalent of 'young, streetwise, aggressive, alienated and offensive to the Establishment' (Nicholls 288). Cyberpunk picks up on the aggressive rejection of authority, as reflected in its outcast heroes, the lowlifes, drifters, drug users, and petty criminals that populate the stories, as well as on the disillusionment with the established order of late capitalism. For Sterling, all this represents a 'subversive potential' to reassess and reinvent power structures from 'a wide-ranging, global point of view' ('Preface' xiv), but this political claim does not register with many of cyberpunk's critics. They point out that the technologically saturated, urbanized worlds of cyberpunk are at best indifferent towards their depiction of multinational corporate rule, late-capitalist consumerism, and mass mediatization (Nixon 230; Frelik).

Darko Suvin, for example, states that Gibson has a strong distaste for the dark world he describes and the status quo in his novels, but on the

other hand, Gibson ‘accepts the *status quo* a bit too readily as inevitable and unchangeable’ (45). The fact that cyberpunk protagonists easily navigate the multinational capitalist world and find their own way of survival rather than trying to incite social changes has been a major concern for critics trying to identify the utopian–dystopian impulse in cyberpunk. The genre reflects a fast-paced world, where ‘the speed of thrill substitutes for affection, reflection, and care’ and all critical stance is passed by, a lack which has prompted Csicsery-Ronay to call cyberpunk writing ‘the apotheosis of bad faith,’ which isn’t concerned with the implications of its technologies (‘Cyberpunk’ 193). A similar skepticism about cyberpunk’s revolutionary stance prompts Nicola Nixon to argue:

In Gibson’s fiction there is therefore absolutely no critique of corporate power, no possibility that it will be shaken or assaulted by heroes who are entirely part of the system and who profit by their mastery within it, regardless of their ostensible marginalization and their posturings about constituting some form of counterculture. (230)

Rob Latham argues that it is especially cyberpunk’s ‘ambivalent posthumanism’ of transgressing known human boundaries ‘that tended to view these processes as ethically neutral if not politically neutralizing’ (39–40). Because of this neutrality, in both cyberpunk’s descriptions of the late-capitalist society and its ideological posturing in regard to the posthuman, the same novel could be characterized – depending on the perspective taken – as displaying either the ‘confident technological utopianism sometimes associated with cyberpunk’ (Luckhurst 212) or ‘a shabby dystopia of ubiquitous information and communications technologies and biotechnological body modifications’ (Bould and Vint 154).

Cyberpunk therefore does not position itself easily within the utopian–dystopian dimension, and it certainly does not lend itself to a clear-cut ideological message in regard to (post)modernity and late-capitalist society, but it seems that critics at least agree on the strong interconnection of cyberpunk and posthumanism (Luckhurst 208; Butler 15). Thomas Foster goes so far as to argue that cyberpunk’s discussion of posthumanism is ‘an intervention in and inflection of a preexisting discourse, which [...] [it] significantly transformed and broadened, providing a new basis for the acceptance of posthuman ideas in contemporary American popular culture’ (xiii).

In *Constructing Postmodernism*, McHale identifies three motif complexes of cyberpunk poetics that seem central to the literary movement: ‘worldness,’

'the centrifugal self,' and 'death, both individual and collective' (246–47). Posthumanism features in all three, but it is especially cyberpunk's tendency to deal with the 'dispersion and decentering' (255) of the centrifugal self that allows McHale to address the split in technological development that I mentioned at the outset of this chapter. Both techno-scientific moments – the biological and the informational – find their way into cyberpunk's intervention in the posthuman discourse. McHale, in arguing for a connection between the two and a different outlook in how to appropriate the posthuman, refers to Sterling's 'Schismatrix' story cycle³ for terminological clarity: In the stories two posthuman factions vie for power, the Shapers and the Mechanists. The Mechanists 'use electronic and biomechanical means to augment themselves,' while the Shapers 'use bio-engineering techniques – cloning, genetic engineering – to achieve the same ends' (ibid.). This opposition of mechanical versus biological augmentation then prompts McHale to conclude in regard to his cyberpunk poetics that there are two sets of posthuman conceits employed by the authors: 'We might call the first set, corresponding to the Mech option, cyberpunk proper, and the second set, corresponding to the Shaper option, "bio-punk"' (ibid.). McHale's use implies that biopunk should therefore adhere to the general definitions given for cyberpunk fiction, differing only slightly by use of the biological body enhancement conceit instead of a cybernetic or mechanical one. In most cyberpunk novels, elements of biopunk exist, but only a few examples of the 1980s exhibit a dominant biological posthuman motif: best known are Sterling's *Schismatrix* (1985) and Greg Bear's *Blood Music* (1985).

The biopunk subgenre thus developed from progress in genetic research, posthuman discourse, postmodern late-capitalist society, and the intervention of cyberpunk literature to culturally capture such a historical moment. In my opinion, the term 'biopunk' suggests a strong derivation from cyberpunk and its aesthetics and poetics that seems to exclude many examples of biogenetic posthuman science fiction. The name is derivative and suggests a connection made by clever authors and publishers in order to market yet another subgenre (e.g. steampunk, splatterpunk, biopunk, elfpunk) by association with the success of cyberpunk, but the cultural artifacts generally grouped with it are not as closely related as the denomination suggests. On the grounds of varying subject matter and the general aesthetics of setting and characters, but

³ The cycle is composed of the short stories 'Swarm' (1982), 'Spider Rose' (1982), 'Cicada Queen' (1983), 'Sunken Gardens' (1984) and 'Twenty Evocations' (1984) and the novel *Schismatrix* (1985), all of which are collected under the title *Schismatrix Plus* (1996).

also because of diverging socio-political aims, I would claim that even the above-stated 'original' examples of 1980s biopunk, Sterling and Bear, do not fit the bill fully. Yes, the 'bio' in biopunk is obviously determined by the shifting source material for the technological novum – biology instead of physics – but the problematic lies in the 'punk' syllable of the term. Cyberpunk finds connections with punk – music and drug culture, anarchy as valued political form, streetwise characters, criminal heroes, and rebellious devil-may-care attitudes – but biopunk does not really reflect this. The punk connotation here seems construed and reflects less in the cultural artifacts associated with biopunk than in the newly formed social and political movements, for example DIY biology and biohacking, that occupy anti-government and anti-corporate positions more sympathetic to 'punk' as a marker of their subversive viewpoints. The association is one that lends the scientific branch of the movement an air of subcultural deviancy and provocation – especially its connection to hacker culture, the figure of the 'outlaw,' and punk channels public perception and provides 'outsider status': 'defiance of accepted norms was the essence of the biohacking ethic' (Wohlsen 179).

In terms of literature, this deviation from bio/cyberpunk poetics can perhaps best be exemplified in Octavia Butler's 'Xenogenesis' trilogy (*Dawn* [1987], *Adulthood Rites* [1988], and *Imago* [1989]) or Nancy Kress's 'Sleepless' series (starting with *Beggars in Spain* [1993]). In both cases, music, hacker culture, and street culture are not part of the setting, and the political statement of the novels is not anti-corporate or anti-governmental, instead focusing on issues of race, gender, and posthumanity. Aesthetically as well as politically these novels are thus clearly not punk and grouping them under the heading of 'biopunk' (which for example Wikipedia and other internet platforms discussing the topic still do) does them an injustice. Unfortunately and despite efforts to establish other terms,⁴ 'biopunk' has become the cultural formation's misnomer

⁴ Most famously, in 1996 writer Paul Di Filippo proposed the term 'ribofunk' and defined it as: 'speculative fiction which acknowledges, is informed by and illustrates the tenet that the next revolution – the only one that really matters – will be in the field of biology.' Unlike 'biopunk,' the term 'ribofunk' expressly takes its leave from its cyberpunk roots, as Filippo emphasizes, calling cybernetics 'dead science' and punk 'dead music when cyberpunk was born.' But as Filippo later admits in an interview, he himself only used the term 'half-jokingly' and the 'alleged genre [...] never really materialized' (Payne). Other examples include 'Agripunk' and 'Greenpunk,' but these terms similarly never made it into widespread usage in science fiction communities and would still use 'punk' as a reference (Hageman 301, note 4).

headline, as the literary discourse on genetic engineering was picked up and successfully appropriated by pop culture as well as mainstream news media.

That 'biopunk' was a term that was here to stay and to be associated with a cultural formation encompassing not only literature, but also films, TV series, video games, and artworks, as well as cultural practices and socio-political beliefs, became clear in April 2002. When *Rolling Stone* magazine announced the newest trends of fashion, music, and cultural attitudes in 'The Cool Issue' (number 893), one of them was a concept promising the 2000s the 'trendiness of cyberpunk' ('The Gene-Hack Men' 80) not just in terms of sf writing but also in terms of its overlap into other aspects of culture: 'biopunk.' The article claims that biopunk is cyberpunk's 'successor,' dealing with 'biotechnology and hacking the gene pool,' once more drawing the connection to cybertechnology and hacker subculture. It names several sf writers ('Jeff Noon, Paul Di Filippo, Octavia E. Butler and Michael Marshall Smith'), the TV show *Dark Angel* (created by James Cameron, 2000–02), bio-artist Eduardo Kac, and a website for buying biotechnology equipment, in order to show the diversity of sources contributing to the biopunk formation. The shortness and scope of this piece as well as the overall sentiment of a looming threat of bioterrorism ('Hey, nobody ever said that punk was nice') do not really qualify this article as a deep academic insight, but what is noteworthy and interesting about it is that the self-proclaimed zeitgeist icons of a popular music magazine such as *Rolling Stone*, by 2002, had noticed this cultural formation, as well as the science fiction terminology from which it originated.

In this sense, 'Biopunk' referred to the aforementioned variety of cultural practices and socio-political beliefs which centered around an anti-corporate, anti-governmental approach similar to cyber hacking, only this time with reference to genetics. And the term, with connection to do-it-yourself (DIY) biology and an open-source research in the life sciences, had already been introduced into general discourse in the form of journalism dealing with technoscientific progress, such as in the blogs and columns of Annalee Newitz. In one column in the *San Francisco Bay Guardian* she reminds her readers that 'Cyberpunk is passé,' then explains that the new trendy inspiration for the 2000s will be 'the biopunk revolution':

Biopunks are the visionaries whose imaginations were set on fire by the knowledge that we had finally sequenced the human genome last year. Biopunks get off on creative genetic engineering, RNA research, cloning and protein synthesis. Biopunks hack genomic

data, lining up human genomes next to mouse genomes to find out what the two species have in common and what they don't. ('Biopunk')

Newitz, who identifies several cultural aspects of the 'movement in the making' in addition to the scientific ones, remarks that one of its strengths is that 'the biopunk revolution has yet to be codified or legitimized' and that 'it's as ill-defined as the genome itself' ('Genome Liberation'; see also 'Biopunk'). Bloggers and self-declared biopunks of the movement have since indulged in squabbles over which cultural objects to embrace under the heading (if any), and understand cultural production only as one aspect of a possible definition. The constant revisions of the Wikipedia entry for the term indicate the conflict over the cultural terrain. Whereas the entry originated in the science fiction subgenre, it was later expanded to encompass the socio-political movement before being reduced to its current state, which strongly emphasizes sociology, not literary studies: 'a technoprogressive movement advocating open access to genetic information,' with only a subsection dealing with biopunk sf as being 'related.'⁵

Biopunk thus connects to the emergence of 'amateur genetic engineers,' which Sylvan Katz foresaw in 1990, when he warned 'that biohackers probably will emerge in the coming decade' and that they will 'pose a serious regulatory challenge' (66) to authorities. Biohackers use public domain information about genetics in order to work on DIY biology in their home-basement laboratories – people such as Meredith Patterson, whom Marcus Wohlsen in his journalistic study of entrepreneurs and figureheads of the movement calls a 'self-taught bioengineer [...] [who] spliced genes at her dining room table' (37). Patterson epitomizes the

⁵ Retrieved on October 10, 2013. The original entry from Wikipedia (<http://en.wikipedia.org/wiki/Biopunk>) dates to September 2004 and merely defines 'biopunk' as a subgenre of sf. In October 2005 a section on a 'Movement' was added and expanded in May 2006. By January 2007 the focus had shifted and the socio-political meaning of the term had been moved to the foreground; science fiction featured as the 'historical' meaning. One year later, January 2008, the order had been rearranged again, eliminating the past-tense formulation and by the end of February 2008 providing a tri-part definition (the hacker as person, the movement, and the sf genre). A discussion on which cultural products to include in the entry ensued, which was cut short in January 2012, when the tripartite definition was removed and the abovementioned summary was provided. The cultural in- or exclusion debate continues on Wikipedia as well as on other forums and internet platforms, such as www.biopunk.org.

biohacker because of her 'primal urge to tinker' (Wohlsen 40) and because she has written the movement's first unofficial statement of intent: Her 'Biopunk Manifesto' is a form a self-proclamation and call to join ranks ('Come, let us research together'). Both Newitz and Wohlsen further argue that these individual DIY scientists form a loose network with lawyers, social and political activists, writers, and artists, who fight for public domain access of genomic data. The movement is decidedly anti-corporate and empowered by the "information-wants-to-be-free" hacker ethos' (Newitz, 'Genome Liberation'; see Wohlsen 5) that originated in the computer hacker scene of the 1980s, which is also where Katz took inspiration from when coining the term 'biohacker' (Katz, personal communication, October 14, 2013).

Returning to my original premise, I believe that the rise of biology as one of the driving forces of scientific progress since the late 1970s, the mainstream attention given to genetic engineering in the wake of the Human Genome Project (1989–2003), the changing sociological view of a liquid modernity, and the shifting discourses on the posthuman form a historical nexus that produces the cultural formation of biopunk – in terms of both a socio-political and scientific DIY biology movement and its artistic negotiation in the popular culture imagination. How such an artistic expression of biopunk navigates the two dimensions claimed by Csicsery-Ronay, the historical dimension of possibility and the ethical dimension of consequence, remains to be seen. It is from within the genre tradition of science fiction and especially cyberpunk that biopunk was born into a world that has become science-fictional itself. At the heart of this development lies the realization that we are now not 'considered fully human' and that 'after the postmodern, the post-colonial, the post-industrial, the post-communist and even the much contested post-feminist conditions, we seem to have entered the post-human predicament' (Braidotti 1), one clear indication of which seems to be that 'contemporary science and biotechnologies affect the very fibre and structure of the living and have altered dramatically our understanding of what counts as the basic frame of reference for the human today' (Braidotti 40).

2.2 Posthumanism

2.2.1 Origins in Humanism/Anti-Humanism

But what is the supposed existing frame of reference for the human that is being altered so radically that it commands a new terminology, as well as a new politics? What is ‘the human’? For more than 200 years of Western thought, the human as a category has been determined by Enlightenment philosophy and its legacy of humanism. The human as category is a fleeting and historically specific concept, as Foucault famously argues at the end of his book *The Order of Things*, that could just as easily disappear, should the ‘fundamental arrangements of knowledge’ (387) shift once more as they did at the end of the eighteenth century, when the era of humanism as we understand it began. With the emergence of this posthuman condition, the human as a category – to quote Foucault’s famous line – ‘would be erased, like a face drawn in the sand at the edge of the sea’ (387). Before moving beyond the category, before the wave of posthuman change erases the image, it seems appropriate to shortly capture the humanist outline drawn in the sand that gave shape to the concept in the first place.

As Richard Norman points out in his book *On Humanism*, the term itself is hard to define, as there is no ‘definitive set of beliefs called “humanism”. There are many humanisms’ (8). The concept refers back to Italian Renaissance scholars employing studies in the ‘disciplines of grammar, rhetoric, poetry, history and moral philosophy’ (Norman 8) but has since been applied by many to a philosophical school of thought reaching back to Enlightenment concepts of human nature. Today humanism is commonly viewed as simply referring to practical atheism, or an alternative to religious worldviews. Ignoring the many different historical facets of the debate, as well as deviations in the philosophical assessment of the term, I would agree with Kate Soper in defining the central aspects of humanist thinking as follows:

Humanism: appeals (positively) to the notion of a core humanity or common essential features in terms of which human beings can be defined and understood, thus (negatively) to concepts (‘alienation’, ‘inauthenticity’, ‘reification’, etc.) designating, and intended to explain, the perversion or ‘loss’ of this common being. Humanism takes history to be a product of human thought and action, and thus claims that the categories of ‘consciousness’, ‘agency’, ‘choice’, ‘responsibility’, ‘moral value’, etc. are indispensable to its understanding. (11–12)

Humanism claims that there is a unique and absolute difference that sets humans apart from the rest of creation: the difference of Cartesian reason. Neil Badmington explains Descartes's humanist philosophy quite ingeniously and defines the key argument: 'Reason belongs solely to the human and, as such, serves to unite the human race. "We" may have different types of bodies, but because reason is a property of the mind, deep down "we" are all the same' (*Posthumanism* 4). But even though the main concepts may have been taken from the Renaissance or Enlightenment, as Tony Davies points out, humanism 'is the myth of the *modern*' (22), 'shaped by and inseparable from nineteenth-century conditions and concerns' (18) such as changes due to the preceding political revolutions as well as those brought about by industrialization and imperialism. Humanist thinking thus needed to justify this radical change to modernity as an achievement of human progress while at the same time atoning for its by-product of inequalities. As a result, nineteenth-century discourse idealized the figure of the human by creating 'the myth of essential and universal Man: essential, because humanity – human-ness – is the inseparable and central essence, the defining quality, of human beings; universal, because that essential humanity is shared by all human beings, of whatever time or place' (Davies 24). But this concept of 'Man,' so pervasive in common discourse even today, when political rhetoric appeals to 'human nature' or the 'human condition,' has in the last century come under attack by anti-humanists such as Roland Barthes, Louis Althusser, and Michel Foucault.

Similar to humanism, there is also more than one single concept or aspect to anti-humanism, but as Soper argues, anti-humanism can best be summarized as follows:

Anti-humanism: claims that humanism as outlined above is pre-scientific 'philosophical anthropology'. All humanism is 'ideological'; the ideological status of humanism is to be explained in terms of the systems of thought or 'consciousness' produced in response to particular historical periods. Anthropology, if it is possible at all, is possible only on condition that it rejects the concept of the human subject; 'men' do not make history, nor find their 'truth' or 'purpose' in it; history is a process without a subject. (12)

This argument is exemplified in Roland Barthes's critique of the 'facts of nature, the universal facts' of birth and death that are supposedly displayed in the photographic exhibition 'The Great Family of Man' as signs of a universal human essence. Barthes argues in his essay of the same name that

if one removes History from them, there is nothing more to be said about them; For these natural facts to gain access to a true language, they must be inserted into a category of knowledge which means postulating that one can transform them, and precisely subject their naturalness to our human criticism. For however universal, they are the signs of an historical writing. (12)

Even though Barthes's criticism represents only a first step towards anti-humanism, his 'progressive humanism' (12) calls for exactly the kind of awareness of the difference in circumstances that is harshly aware of the limitations of the universal humanist subject and that is key to anti-humanist thinking. As Michèle Barrett puts it, this subject is 'made in the image of his inventor': a white, rich, male, healthy subject at the center of power, and it should be 'entirely clear to us that this model of the subject is centred, and unified, around a nexus of social and biographical characteristics that represent power' (cited in Davies 59).

The full-fledged anti-humanist argument against this subject probably begins with Louis Althusser and his critical re-reading of Marx. Althusser claims that in 1845 'Marx broke radically with every theory that based history and politics on an essence of man' (30) and goes on to declare Marx's writing to be promoting a '*theoretical anti-humanism*' that is 'the absolute (negative) precondition of the (positive) knowledge of the human world itself, and of its practical transformation. It is impossible to *know* anything about men except on the absolute precondition that the philosophical (theoretical) myth of man is reduced to ashes' (32). The ultimate argument for this disappearance, though, belongs to Michel Foucault and his claim that 'man is an invention of recent date. And one perhaps nearing its end' (*The Order of Things* 387).

In her excellent study *The Posthuman*, Rosi Braidotti argues that the humanist subject – in its privileged and limited definition – is not and has never been universal, nor essential. At the beginning of the twenty-first century it rather becomes clear that 'the very structures of our shared identity – as humans' (2) are far more complex and integrated into categories that humanist subject construction excluded and which now through social, political, economic, and ecological shifts demand a position in our critical thinking: 'the non-human, the inhuman, the anti-human, the inhumane and the posthuman proliferate and overlap in our globalized, technologically mediated societies' (2). For Braidotti, the posthuman then becomes a critical tool for examining the complex construction of a new subject position, one that acknowledges 'our globally linked and technologically mediated societies' and helps in

re-evaluating ‘the basic unit of reference for the human’ as well as ‘our interaction with both human and non-human agents on a planetary scale’ (5–6).

2.2.2 Origins in Proto-Science-Fiction

Before examining the posthuman in today’s critical thinking, I would first like to point towards its origin in a proto-science-fictional context. The term ‘posthuman,’ according to Neil Badmington (‘Posthuman Conditions’ ix), might have been coined in 1888, when Helena Blavatsky used it in her book *The Secret Doctrine* to describe the development of mammals as an after-product of human ‘astral’ evolution: ‘a post-human Fourth Round product’ (688).⁶ Blavatsky’s reversal of Darwinist evolution claimed that humans developed in several stages through the rounds of ‘astral races,’ originating physically for the first time in the ‘Fourth Round’ and then developing further in the ‘Fifth Round’. Mammals, she claims, share man’s evolutionary features not because humans evolved from them but rather because they need to be understood as products of the same group, originating in the human, thus making every mammal ‘posthuman’ in the sense that they came ‘after the human’ in terms of Blavatsky’s ‘astral’ evolution. As proto-science-fictional and scientifically dubious as Blavatsky’s ‘Synthesis of Science, Religion and Philosophy’ is (this is the subtitle of the book), it clearly seems to introduce at least the concept and terminology of an evolution of the species that goes beyond or remains after the human – in terms of ontology and/or time.

In a sense, one could argue that the concerns with and conceptions of (post)humanist thinking lie at the heart of science fiction. After all, the genre’s ‘ur-text,’ the first novel to ‘contain every major formal characteristic that can reasonably be held to mark science fiction as a genre’ (Freedman 253), Mary Shelley’s *Frankenstein*, reflects upon the constitution of human nature as one of its main concerns. Brian Aldiss refers to Shelley’s novel as the birth of sf and then argues more

⁶ The *Oxford English Dictionary* does not mention Blavatsky, but rather names Maurice Parmelee’s 1916 *Poverty & Social Progress* as the first usage of the term. But the *OED* agrees in its originating in ‘Chiefly Science Fiction. Of or relating to a hypothetical species that might evolve from human beings, as by means of genetic or bionic augmentation’ (www.oed.com). The supposed earlier usage Stefan Herbrechter (in quoting Oliver Krüger) identifies as ‘posthumain,’ stemming from Thomas Blount’s *Glossographia* (1656), is an error in spelling: The *OED* quotes ‘posthumian,’ not ‘posthumain,’ as ‘following or to come, that shall be’ (Herbrechter 33) in the sense of ‘posthumous’ (after death).

broadly with regard to the genre that 'Science Fiction is the search for a definition of man and his status in the universe which will stand in our advanced but confused state of knowledge (science)' (8). And indeed, in *Frankenstein*, the monster, scientifically created and then rejected by its creator, Victor Frankenstein, finds himself alone and confused reading about humanity in Goethe, Milton, and Plutarch and, when comparing himself to the described humans, always lacking some aspects. Consequently, pondering his own state of being, he asks: 'Who was I? What was I? Whence did I come? What was my destination?' (Shelley 128). His questions point to the central motif of the story: the question of human nature, a human essence, and what to include in the definition of this essence. As such, the novel for the first time explores elements of knowledge about the human position in the technologized world that reverberate with early nineteenth-century discourses of 'humanism.' This discussion of humanism – as well as all forms of critical discourse derived from it – humanist, anti-humanist, or posthumanist – informs the cultural imagination of science fiction.

As a cultural discourse, sf has always been a reflection of the political and social issues of its time. For example, Istvan Csicsery-Ronay, Jr., points out in his analysis 'Marxist Theory and Science Fiction': 'In its simplest terms, sf and utopian fiction have been concerned with imagining progressive alternatives to the status quo, often implying critiques of contemporary conditions or possible future outcomes of current social trends' (113). As such, sf is ideally suited to negotiate humanist concerns to the full by fictionalizing both its ideals and any possible critique of the humanist stance. Especially the defining questions of humanism 'What constitutes human nature?' or 'What does it mean to be human?' have thus been a central concern of science fiction exploration. The imagined changes in the 'human' can be individual (as in *Frankenstein*) but more often tend to affect a society if not the whole species, 'and these changes are often the results of scientific discoveries and inventions that are applied by human beings to their own social evolution' (Csicsery-Ronay, 'Marxist Theory' 113). Returning thus to *Frankenstein*, sf 'foreshadows many of our anxieties about the two-faced triumphs of scientific progress' (Aldiss 26) and at the same time reflects upon the contemporary debate of evolution and creation. Shelley's fictional interjection into the ongoing debate dramatizes Erasmus Darwin's evolutionary theory of species improvement (Hunter 140). The idea of continual advancement and evolutionary progression in *Frankenstein* results in a new species, which is better than man (taller, stronger, more agile, and much more resilient), and according to Darwin in every evolutionary sense the next generation to take over the earth.

For all intents and purposes, then, the monster represents what we might name the posthuman: a being replacing the human, coming after the human, and existing beyond human capacity. Frankenstein's creation anticipates the posthuman condition.

As such, the posthuman has been part of the sf repertoire from the beginning of the genre with *Frankenstein* and later in the century with H.G. Wells's novels *The Time Machine* (1895) and *The Island of Doctor Moreau* (1896). Jeff Prucher traces Blavatsky's term 'post-human' in his dictionary *Brave New Words* to be employed by authors such as H.P. Lovecraft, who uses it in his 1936 novella 'The Shadow Out of Time' to refer to the Great Race of the Yith, who possess human bodies for a time before moving beyond/past the human (Prucher 153). Likewise, it can be argued that James Blish's concept of 'pantropy,' that is, the alteration of human bodies to allow for life on another planet otherwise uninhabitable (Prucher 143), as well as many other sf ideas throughout the century such as hybrid creatures, robots, and artificial intelligences, all *de facto* refer to the posthuman. These fictional posthumans, represented through the lens of sf, laid the basis for a fruitful and engaging discourse on posthumanism, which was first introduced into critical theory in 1977.

2.2.3 Posthumanism and/as Critical Theory

The critical theoretical discourse on posthumanism, as Ivan Callus and Stefan Herbrechter explain, derives partly from humanist discourse and partly from the original sf definition of characterizing the next step in human evolution:

Posthumanism, as the name of a discourse, suggests an *episteme* which comes 'after' humanism ('post-humanism') or even after the human itself ('post-human-ism'). Implicit in both these articulations is a sense of the supplanting operations wrought by time, and of the obsolescence in question affecting not simply humanism as displaced *episteme* but also, more radically, the notion and nature of the human as fact and idea. (f)

As such, and in a way inherent in the meaning of its prefix, as referring to a reaction or sometimes even rejection of the concept it prefixes (e.g. in 'postmodernism'), posthumanism can be understood as culminating anti-humanist thought, describing or theorizing the condition anticipated by Foucault's vanishing of 'the figure of man' (*The Order of Things* 386). As a reaction to this call for the 'end of man', in

1977, Ihab Hassan re-appropriated the term, convinced that Foucault and the other anti-humanists 'mean not the literal end of man but the end of a particular image of us' (213). Hassan claims that the posthuman is emergent within our culture and that we need to overcome the division of imagination and science because both 'are agents of change, crucibles of values, modes not only of representation but also of transformation, their interplay may now be the vital performing principle in culture and consciousness – a key to posthumanism' (208). The concept of posthumanism for him is therefore not just wordplay or anti-humanism in disguise, but rather 'posthumanism may also hint at a potential in our culture, hint at a tendency struggling to become more than a trend' (212). This potential is transformation, a radical change in our understanding of the human: 'We need to understand that five hundred years of humanism may be coming to an end, as humanism transforms itself into something that we must helplessly call posthumanism' (212).

With this potential of transformation comes the threat of something going wrong, signaled in Hassan's choice of the word 'helplessly.' He warns that the posthuman joining of divisions might not 'find a happy consummation. It may also beget monsters and mutants' (216). In posthumanism lies not just the utopian dream of a new evolutionary step but also the potential for a dystopian nightmare. This duality of possibilities is essential here, as posthumanism is understood by Callus and Herbrechter to refer to the discourse which all at once 'articulates our hopes, fears, thoughts, and reflections at a post-millenarian time haunted by the prospects of technology's apparently essential and causal link with the finiteness of the human as a biological, cognitive, informational, and autonomous integrality' (g).

As with humanism and anti-humanism before it, there is actually not one single posthumanism, but rather a whole discourse negotiating these and other aspects of the posthuman condition. In 1986 in her famous 'Cyborg Manifesto,' Donna Haraway introduced the cyborg into posthuman critical theory as a metaphor of breaking through ontological boundaries and dichotomies: 'The cyborg has multiple origins, and cannot be pinned down to any one, and disturbs the categories and statuses of men, women, artifact, racial identities but also bodies and the categories of living/non-living' (Nayar 22). Haraway uses the cyborg, in 'ironic faith, my blasphemy' ('Cyborg Manifesto' 149), in order to blur the lines between the science-fictional creature (the hypermasculine, militarized human-machine epitomized in the T-1000, Arnold Schwarzenegger's portrayal of the Terminator) and the social reality of newly found hybridized political subject positions. In her terminology, 'we are all chimeras, theorized and fabricated hybrids of machine and

organism' ('Cyborg Manifesto' 150) and have all thus already begun our posthuman existence. Haraway's cyborgian negation of 'boundaries between human and machine [needs to be seen] as an opportunity to weaken other humanist boundaries' (Herbrechter 99) as well. She argues that we are experiencing a shift towards living in a multiform information system in which all aspects of life are infused with technoscientific progress, which in turn eliminates all distinctions of category: 'The dichotomies between mind and body, animal and human, organism and machine, public and private, nature and culture, men and women, primitive and civilized are all in question ideologically' (Haraway, 'Cyborg Manifesto' 163).

In her 1997 book *Modest_Witness*, she extends the cyborg metaphor even further to include any kind of technoscientific object as 'Cyborg figures – such as the end-of-the-millennium seed, chip, gene, database, bomb, fetus, race, brain, and ecosystem,' all of which she describes as being the 'implosion of the technical, organic, political, economic, oneiric, and textual' (12). She refers to technoscience as the historical continuum that exceeds the dichotomies of modernity and replaces it with 'the promiscuously fused and transgenic quality of its domains by a kind of visual onomatopoeia' (4). In technoscience, everything becomes fused into the cyborg metaphor and thus part of the posthumanist subjectivity, in so far as everything needs to be understood as an object of multiple identities: 'Technoscience as cultural practice and practical culture, however, requires attention to all the meanings, identities, materialities, and accountabilities of the subjects and objects in play' (82). We, as cyborgs or posthumans, do not inhabit a certain natural order or pure essence but rather, as 'entities in technoscience culture,' are simultaneously 'a metaphor, a technology, and a beast living its many-layered life as best it can' (83). We are culturally created beings and always were, while the concept of human nature reflects a myth that we have now outgrown. It is this new, technoscientific and cyborgian way of relating to ourselves that Haraway considers to open up 'contestations for possible, maybe even livable, worlds in globalized technoscience,' (270) for new ways to negotiate conditions of power, expressed in discourses of racism, sexism, classism.

By breaking down these cultural boundaries, Haraway states, the cyborg as adopted metaphor represents a world in which 'the practices of domination' have been challenged and 'we find ourselves to be cyborgs, hybrids, mosaics, chimeras' ('Cyborg Manifesto' 177), we find ourselves posthuman, partly infused with and extended by technoscience. As a cultural metaphor the cyborg thus presents us with the realization that we are embodied in a technoculturally determined body, that our

bodily identity is multiple, active, and changing, and that the posthuman 'might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoints' ('Cyborg Manifesto' 154).

The cyborg is a very central figure not just in Haraway's theoretical conception of posthumanism, but also in transhumanist thought, where it functions as an evolutionary step towards a fully transcendent humanity. As mentioned in the introduction, transhumanism is one of several contemporary strands of posthumanism, in which enhanced human existence is understood as a first step beyond the limitation of the biological body. Transhumanism, as a form of posthumanist discourse, must be understood as oppositional to Haraway's embodied fluid identities, in that it proposes 'transcending the bonds of materiality and embodiment altogether' in order to achieve true humanity – as such representing rather an '*intensification* of humanism' (Wolfe, *What Is Posthumanism?* xv). Bostrom argues that transhumanism 'holds that current human nature is improvable through the use of applied science and other rational methods, which may make it possible to increase human health-span, extend our intellectual and physical capacities, and give us increased control over our own mental states and moods' (cited in Nayar 6). Bostrom bases his argument on the assumption that there is something like a 'human nature' but that it is not universal and essential. Rather, he believes, we will be able 'to transcend our biological limitations by means of technology' and thus need to 're-evaluate the entire human predicament' ('Transhumanism').

In its extreme position, transhumanism as the complete transcendence of the human body, this philosophy moves us into what Hans Moravec calls the "postbiological" world in which the human race has been swept away by the tide of cultural change, usurped by its own artificial progeny' (1). Moravec argues along similar lines as many early cyberpunk writers did (e.g. Gibson, Rucker) that the human body is a prison of flesh and blood and that in order for humanity to evolve, we will need to 'liberate human minds' from it completely because in the 'present condition we are uncomfortable halfbreeds, part biology, part culture, with many of our biological traits out of step with the inventions of our minds' (4). His vision is that information technology will allow us 'to imagine human thought freed from bondage to a mortal body' (4) and that at some point, given the development of computational power and artificial intelligence, we might actually free the mind from its brain and transfer it as computational code to a new, artificial body. These eutopian fantasies of better-abled (cyborg) or non-embodied (virtual)

existence beyond the biological confines represent an extreme and distilled version of humanist privileged subjectivity – based on human exceptionalism and hierarchies of power.

Pramod Nayar thus calls transhumanist thought ‘techno-deterministic, and techno-utopian, in its faith in technology’s ability to ensure a certain kind of future,’ which especially science fiction celebrates in a ‘near-obsessive exploration’ of the conflation of human and machine (7). In his view, this enmeshed human-machine future of transhumanism represents the ‘pop posthumanism of cinema and pop culture’ that is found in films such as *The Terminator* (dir. James Cameron, 1984) and *The Matrix* (dir. the Wachowskis, 1999). In literary terms, even the fully digitalized existence has been explored by cyberpunk, as in Rucker’s novel *Software* (1982) or Gibson’s *Mona Lisa Overdrive* (1988), and is thus part of this pop posthumanist discourse.

But conflating sf (in all forms and media) into so neat a category as ‘pop posthumanism’ is too wide a generalization to make much sense. It assumes that a more critical and nuanced exploration of the posthuman is not possible within the confines of science fiction (or popular culture more generally). As my analyses show, this is not the case: The popular cultural imagination is just as varied and critical in its posthumanism as is theoretical thought. The argument already fails in conflating the transhumanism of Moravec or Bostrom with films such as *The Matrix*. Even if all agree on the possibility of human–machine hybridity, the ideological stance towards this argument is at opposite ends, one representing a techno-eutopian dream, even a philosophical or quasi-religious discourse on the future of the human (Herbrechter 102–03; Graham, ‘Post/Human’ 23), while the other represents a dystopian warning about the social realities of the contemporary moment and the loss of human nature through technologization and cyborgization.

At the other end of the spectrum of posthumanist discourse and much more consistent with a dystopian view of the ‘Consequences of the Biotechnology Revolution’ is Francis Fukuyama’s position, expressed in his 2002 book *Our Posthuman Future* (which bears the above-quoted subtitle). In it he claims that ‘the most significant threat posed by contemporary biotechnology is the possibility that it will alter human nature and thereby move us into a “posthuman” stage of history’ (7). Especially the moral and ethical dimensions of eugenics are at the heart of this debate that is also prominently present in Jürgen Habermas’s and Peter Sloterdijk’s argumentations: ‘In different ways, they express deep concern for the status of the human, and seem particularly struck by moral and cognitive panic at the prospect of the posthuman turn’ (Braidotti 64).

As genetic engineering provides the tools, such as rDNA splicing or germline engineering, to manufacture completely new species by 'purely' biological means, futurists such as Lee M. Silver rejoice at the idea of creating genetically enhanced posthumans, because we 'gained the power to control the destiny of our species' (15) by mapping the human genome. In contrast, this potential of applying genetic engineering to humans has Fukuyama 'fear that, in the end, biotechnology will cause us in some way to lose our humanity – that is, some essential quality that has always underpinned our sense of who we are and where we are going' (101).

At the heart of this argument is of course a nostalgia for the liberal humanist subject that tries to hold on to a privileged and central position of the human: a position that is threatened by genetic engineering because it blurs 'the qualitative lines of demarcation not only among the categories (male/female, black/white, human/animal, dead/alive, centre/margin, etc.), but also within each one of them' (Braidotti 64; see Herbrechter 164).

2.2.4 Critical Posthumanism

In recent years, another strand of theory has emerged in posthumanist thinking that might be understood to have started with Donna Haraway and the cyborg's fluid, flexible embodiment of the posthuman. From there on, the question of the body as a site for enacting posthuman discourses has become hotly debated. Moravec, the cyberpunks, and the transhumanists like to disembodiment the (post)humanist subject and free it from the constraints of the flesh. On the opposite side, Judith Halberstam and Ira Livingston argue that the human body has become challenged by posthumanist discourse, creating the need to view the body as emerging

at nodes where bodies, bodies of discourse, and discourses of bodies intersect to foreclose any easy distinction between actor and stage, between sender/receiver, channel, code, message, context. Posthuman bodies are the causes and effects of postmodern relations of power and pleasure, virtuality and reality, sex and its consequences. The posthuman body is a technology, a screen, a projected image; it is a body under the sign of AIDS, a contaminated body, a deadly body, a techno-body; it is, as we shall see, a queer body. (2–3)

These queered, fragmented, and transformed embodiments then integrate material extensions (animal, machine, non-human) into the posthuman

as a multitude of posthuman bodies (Herbrechter 98; Halberstam and Livingston 16), disconnecting them from any form of ‘bodily master-narratives’ (Halberstam and Livingston 18).

In her book *How We Became Posthuman* N. Katherine Hayles builds on this concept of multiple and fluid embodiments of the posthuman in order to negate transhumanist notions of the de-coupled mind–body relation. In her argument, posthumanism needs to be understood as based in an embodied form, whereas the ‘erasure of embodiment is a feature common to *both* the liberal humanist subject and the cybernetic posthuman’ (4), sharing a preference for the consciousness as the seat of human subjectivity. As such, Hayles warns that transhumanism ‘continues the liberal tradition rather than disrupts it’ (5) and thus problematizes a truly critical posthumanism. In her study, she examines how information became disembodied and how this interconnects with concepts of the posthuman turn. Her project needs to be understood as a warning against ‘what might be called apocalyptic or complacent posthumanism’ (Badmington, ‘Theorizing’ 11), reminding us that information is based in a specific form of materiality. Hayles’s investigation is thus most useful in its reminder that

the posthuman does not really mean the end of humanity. It signals instead the end of a certain conception of the human, a conception that may have applied, at best, to that fraction of humanity who had wealth, power, and leisure to conceptualize themselves as autonomous beings exercising their will through individual agency and choice. Located within the dialectic of pattern/randomness and grounded in embodied actuality rather than disembodied information, the posthuman offers resources for rethinking the articulation of humans with intelligent machines. (286–87)

Hayles’s work needs to be understood not just as an intervention in transhumanist techno-eutopian debates, but rather as one of the inaugural works that initiated a shift in theory towards an understanding of posthumanism as a form of critical discourse.

In the 2000s a whole body of works engaged aspects of the posthuman and of posthumanism. On the one hand, several book-length studies and anthologies of cultural and especially science-fictional analyses took to the posthuman as a category, exploring the shifting social, cultural, political, and technological landscapes of late-capitalist globalized society (among many others see Badmington, *Alien Chic*; Dinello; Gray; Lake; Pastourmatzi; Smith and Morra; Toffoletti; Vint, *Bodies*).

On the other hand, the idea of a *critical posthumanism* emerged. It represents a form of critical theory negotiating not only the posthuman as bodily category but also the changes needed in discourse itself to address an emergence into the posthuman condition; as Cary Wolfe argues: 'we must take another step, another post-, and realize that the nature of thought itself must change if it is to be posthumanist' (*What Is Posthumanism?* xvi).

Neil Badmington's *Posthumanism* (2000) is probably the first attempt to consolidate earlier discourses, as divergent as they may be, on posthumanism and to open the discussion on a new critical paradigm: 'What matters, rather, is that thought keeps moving in the name of a beyond, in the shadow of the unknown, in the fault-lines of the "post-"' (10). Badmington argues for an approach towards posthumanism that 'repeats humanism [...] [in Derrida's terms,] *in a certain way* and with a view to the deconstruction of anthropocentric thought' ('Theorizing' 15). Humanism in Badmington's view is always present in posthumanism and a truly outside position is impossible to attain, he argues, by referring to Derrida's critique of an anti-humanist break with humanism:

Precisely because Western philosophy is steeped in humanist assumptions, [Derrida] observed, the end of Man is bound to be written in the language of Man. Each 'transgressive gesture re-encloses us' because every such gesture will have been unconsciously choreographed by humanism. There is no pure outside to which 'we' can leap. To oppose humanism by claiming to have left it behind is to overlook the very way that opposition is articulated. (*Posthumanism* 9)

Badmington is one of several scholars that have introduced this critical approach to posthumanism, along with Ivan Callus, Stefan Herbrechter, Cary Wolfe, Rosi Braidotti, Pramod K. Nayar, and others. This critical posthumanism points towards a new form of critical theory that engages our contemporary society from a posthumanist perspective. As Stefan Herbrechter points out, appropriating Lyotard's analysis of postmodernism for posthumanism: 'The prefix "post" therefore does not signify a radical break with humanism but a continued deconstructive-*cum*-psychoanalytical "working through"' (48).

But what exactly is a critical posthumanist position? Most importantly, it not only takes into consideration the technological changes to the ontology of human existence but rather considers the full effect contemporary social, political, and technological changes have wrought on the conceptualization of the human. It is a posthumanism 'which

understands the human species as a historical “effect,” with humanism as its ideological “affect,” while distancing itself from both – a “critical posthumanism,” which does not, from the start, position itself “after” a humanism, [...] but which inhabits humanism deconstructively’ (Herbrechter 7). Or as Cary Wolfe has put it, posthumanism is not exclusively about the ‘decentering of the human in relation to either evolutionary, ecological, or technological coordinates,’ but also includes a critique of humanism that keeps intact some of its ‘values and aspirations,’ while at the same time showing ‘how those aspirations are undercut by the philosophical and ethical frameworks used to conceptualize them’ (*What Is Posthumanism?* xvi).

The discursive foundation that a critical posthumanism builds upon, as stated before, is that the humanist subject is dissolving – even for those that somewhat fit the narrow and privileged position. Progress in informational technology, neuroscience, bioinformatics, and genetics has undermined the categorical and biological distinctions of human and non-human by introducing ‘figures’ such as the cyborg, OncoMouse™, or Alba, the glow-in-the-dark bunny (Haraway, *Modest_Witness*; Graham, *Representations*; Kac), as well as theories that strip the human of its essentialist features, such as a free and autonomous consciousness, genetic uniqueness, and bodily autonomy (Herbrechter 47–48). The use of language and tools reveals ‘Man’ to be culturally co-evolving with technology and the immaterial. Similarly, the human is exposed to have always been co-evolving with animal species, in terms of both biological (bacteria, microbes) and cultural processes, as exemplified by companion species such as dogs and horses (Haraway, *Companion Species* 32, 26ff.). Most recently, critics have adopted the concept of the ‘Anthropocene’ to refer to the historical moment of our globalized, mediatized, and highly technologized age, ‘when the Human has become a geological force capable of affecting all life on this planet’ (Braidotti 5) – technological progress has made humanity a force affecting not just any regional surroundings but all life on a global scale.

As such, a critical posthumanism is the ‘*radical decentring of the traditional sovereign, coherent and autonomous human in order to demonstrate how the human is always already evolving with, constituted by and constitutive of multiple forms of life and machines*’ (Nayar 2, emphasis in original). Instead of an autonomous, superior, and dominant position, the human needs to be understood as ‘an assemblage, co-evolving with other forms of life, enmeshed with the environment and technology’ (Nayar 4), sharing social, ecological, and cultural space with non-human agents. The posthuman, as conceptualized by critical posthumanism, thus needs to move beyond anthropocentric views of life. Grounding on the molecular

biological understanding that matter is ‘self-organized (autopoietic)’ and ‘structurally relational and hence connected to a variety of environments’ (59–60), Rosi Braidotti argues that humans are only small parts of a larger force, which she refers to as *zoe*: ‘Living matter – including the flesh – is intelligent and self-organizing, but it is so precisely because it is not disconnected from the rest of organic life’ (60). Life is not a privilege or property of the human but extends to all matter as ‘process, interactive and open-ended,’ thus calling for a reconceptualization of life not as *bios* (in the sense of a ‘subjective’ and purposeful ‘human’ life) but instead as *zoe* (in the sense of the raw and ‘objective’ life common to all beings).

This *zoe*-centric position can also be found in Herbrechter’s commentary that a critical posthumanism needs ‘to acknowledge all those ghosts, all those human others that have been repressed during the process of humanization: animals, gods, demons, monsters of all kinds’ (9; see Graham, *Representations*), which due to the crisis of the humanist subject now ‘re-emerge with a vengeance’ (Braidotti 37). These ghosts, the others of the humanist subject, are not just found in the category of the non-human (animals, machines), but also need to be thought in terms of other excluded categories, as Cary Wolfe explains in regard to speciesism:

As long as this humanist and speciesist *structure* of subjectivization remains intact, and as long as it is institutionally taken for granted that it is all right to systematically exploit and kill nonhuman animals simply because of their species, then the humanist discourse of species will always be available for use by some humans against other humans as well, to countenance violence against the social other of whatever species – or gender, or race, or class, or sexual difference. (*Animal Rites* 8)

Critical posthumanism rejects this structure of subjectivization and proposes, in Braidotti’s terms, a new subjectivity beyond boundaries of sexualized, racialized, and naturalized categories:

I define the critical posthuman subject within an eco-philosophy of multiple belongings, as a relational subject constituted in and by multiplicity, that is to say a subject that works across differences and is also internally differentiated, but still grounded and accountable. Posthuman subjectivity expresses an embodied and embedded and hence partial form of accountability, based on a strong sense of collectivity, relationality and hence community building. (Braidotti 49)

Braidotti understands posthuman subjectivity as a hopeful possibility to find a new ethical position, grounded in the interpenetration of the posthuman with non-human others. Instead of anthropocentric and individualist accounts of life, she argues for a *zoe*-centric position that ‘transposes hybridity, nomadism, diasporas and creolization processes into means of re-grounding claims to subjectivity, connections and community among subjects of the human and the non-human kind’ (50). In understanding the posthuman self as relational and extended, Braidotti proposes a post-anthropocentric view that opens up transformations, which she labels with a nod to Deleuze and Guattari as ‘becoming-animal, becoming-earth and becoming-machine’ (66; see Deleuze and Guattari 237ff.), each extending the relational dimension of the posthuman into solidarity and categorical enmeshment with animals, the environment, and machines, revealing subjectivity as ‘embodied, embedded and in symbiosis’ (Braidotti 67) with each.

Becoming-animal takes as its argumentative base, on the one hand, the concept of companion species as defined by Haraway as ‘species in obligatory, constitutive, historical, protean relationship’ with each other, in interdependence and ‘co-habitation, co-evolution, and embodied cross-species sociality’ (*Companion Species* 12, 4). Most specifically seen in dogs, companion species are as much products of natureculture as humans are, as they develop alongside the human, are subject to technological manipulation and social construction – the dog as ‘man’s best friend’ is just as much a cultural ‘narrative’ as is the wolf as ‘savage beast.’ On the other hand, becoming-animal considers the similarities in the conditions faced by all categories of others to the humanist subject. The ‘zoo-proletariat’ of animal labor endures the same exploitation and reduction to ‘tradable disposable bodies, inscribed in a global market of post-anthropocentric exploitation’ (Braidotti 70), as women, non-whites, and disabled-bodied humans do. The bond forced by the capitalist, globalized, and inhuman system is a post-anthropocentric, posthuman solidarity that enables our becoming-animal.

Becoming-earth is the most theoretical of Braidotti’s projections and starts from the realization that humanity has entered into the Anthropocene, the historical moment in time when humans have become a global force that influences the planet and needs to address questions of ‘environmental crisis, climate change and ecological sustainability’ – questions that will need a ‘planetary, geo-centred perspective’ (Braidotti 81) to answer. Since the scale of natureculture has grown to allow humans to effect changes beyond the biological dimension of their ontology and onto a global, geological scale, subjectivity can no longer be limited to conform with that of humanism – human actions

involve all life (*zoe*) on the planet. History extends in both dimensions beyond the limit of the human, to include both a pre-human past and 'the idea of extinction, that is to say, a future without "us"' (Braidotti 83). The differentiation between natural and human history thus no longer applies. The human is part of all autopoietic matter, part of that Deleuzian 'great animal, the cosmic "machine"' (cited in Braidotti 86) of eternal energy. The posthuman subject asserts itself through these relations by 'becoming' – which is, as Deleuze and Guattari argue, not 'a resemblance, an imitation, or, at the limit, an identification' (239) – it is 'becoming-earth' by its rhizomatic interconnection with the planetary.

Becoming-machine is the last aspect of posthuman subjectivity discussed by Braidotti, and the least relevant in terms of my argument in this book. It builds on Haraway's and Hayles's work of cyborg/virtual subjectivity and the hybridity of human and machine: 'The posthuman predicament is such as to force a displacement of the lines of demarcation between structural differences, or ontological categories, for instance between the organic and the inorganic, the born and the manufactured, flesh and metal, electronic circuits and organic nervous systems' (Braidotti 89). But in contrast to Haraway's use of the cyborg, Braidotti argues that becoming-machine is not merely a metaphorical stance; it is an ontological, social, and political reality, extending the relational self of the posthuman in Marshall McLuhan's sense of extensive media: 'Contemporary information and communication technologies exteriorize and duplicate electronically the human nervous system: we have become "biomediated" bodies' (Braidotti 90, citing Patricia Clough). Braidotti argues for the strong biopolitical implications of existing in technologically saturated and mediated socio-cultural constructions – not just in the highly visible categories of military pilots (flying remote drones) or film stars (surgically enhancing their bodies) but also in the globalized exploited masses, such as support hotline workers (mediated voices from India or Pakistan) or assemblers in China (flesh automatons).

As a consequence, Braidotti and other critical posthumanists argue for a different critical subjectivity of the posthuman, based in contemporary shifts in the ontology of living matter (the *zoe*-centric 'chaosmos'; 86) and the ecological, economic, and socio-political realities of the twenty-first century. At the center of this argument is the realization that the humanist subject is dissolving, opening up the room for a transformative new subjectivity that embraces the shifts in ontology, the enmeshment, the interpenetrations: a subjectivity that can be characterized as embodied in – with a quick forward glance to what will follow in my argument and borrowing Bauman's terminology – a

liquid humanity. Critical posthumanism sees ‘us’ (in our posthuman predicament) as becoming, always radically in the process of changing, but not as lost or evaporating: ‘We need to be “worthy of the present” and thus be part of contemporary culture, embodying and embedding the subject of this particular world. Far from being a flight from the real, posthuman thought inscribes the contemporary subject in the conditions of its own historicity’ (Braidotti 189). And it is to those conditions, to that particular world, I would now like to turn my attention by introducing the concept of liquid modernity.

2.3 Liquid Modernity

2.3.1 From Postmodernity to Liquid Modernity

Sociologist Zygmunt Bauman refers to the contemporary world, to globalized, late-capitalist society at the beginning of the twenty-first century, as one of constant change – one best characterized by the metaphor of fluidity: ‘like all liquids, [this society] cannot stand still and keep its shape for long’ (*44 Letters* 1). In his writing since 2000, Bauman has reacted to a conceptual disappointment with postmodernity as the dominant paradigm in critical theory (Lee 355; Tester 157ff.) and instead argues for a different terminology. For him, the terms ‘postmodernity’ (the social dimension) and ‘postmodernism’ (the aesthetic dimension) were used too indiscriminately, even though a separation was clearly needed (Tester 158; see Bauman, *Intimations*). The resulting confusion of terms renders discussion useless and incomprehensible. Further, Bauman points out that the prefix of the term ‘postmodernity’ conjured up the impression of a chronological ‘after’ that ‘implies the end of modernity, leaving modernity behind, being on the other shore’ (Bauman and Tester 97). Rather than trying to fix a new end point of modernity by giving the era to follow a different name, he argues that contemporary society needs to be theorized from within the concept of a changed form of modernity, adapting existent processes to its ever-changing nature and addressing the protean and transitory state of contemporary society. As Bauman himself says:

The society which enters the twenty-first century is no less ‘modern’ than the society which entered the twentieth; the most one can say is that it is modern in a different way. What makes it as modern as it was a century or so ago is what sets modernity apart from all other historical forms of human cohabitation: the compulsive

and obsessive, continuous, unstoppable, forever incomplete *modernization*; the overwhelming and ineradicable, unquenchable thirst for creative destruction (or of destructive creativity[...]). (*Liquid Modernity* 28)

Thus for Bauman, society today cannot be grasped by the concepts of postmodernity, marking a period of overcoming and thinking beyond modernity, but rather as a continuation of it in a new stage of modernity. Consequently, his term 'liquid modernity' refers to a world that is fluid in that it can 'neither fix space nor bind time' (*Liquid Modernity* 28):

Everything or almost everything in this world of ours keeps changing: fashions we follow and the objects of our attention, things we dream of and things we fear, things we desire and things we loathe, reasons to be hopeful and reasons to be apprehensive. And the conditions around us, conditions in which we make our living. (*44 Letters* 1)

This is in accordance with German sociologist Ulrich Beck's very similar argument that contemporary society needs to be understood as undergoing a 'second rationalization,' constituting not a 'classical' but a 'reflexive modernization' that allows for the 'modernization of industrial society' itself instead of just a 'modernization of tradition' (*Risk Society* 11). The first rationalization liquefied (or 'dissolved' in Beck's terminology) conceptions of tradition in feudal pre-industrial times, such as a rigid class system, belief structures, and customary rights of that society. But, as Bauman points out, it did so only to establish 'new and improved solids' that promised a 'lasting solidity, a solidity which one could trust and rely upon and which would make the world predictable and therefore manageable' (*Liquid Modernity* 3). This desire for a lasting solidity was so dominant, Beck argues, that far into the twentieth century, it produced a mythology that has gone long unnoticed:

This myth asserts that developed industrial society with its patterns of work and life, its production sectors, its thinking in categories of economic growth, its understanding of science and technology and its forms of democracy, is a thoroughly modern society, a pinnacle of modernity, which it scarcely makes sense even to consider surpassing. (*Risk Society* 11)

In Marx's famous phrase, 'melting the solids' in this first phase of modernity meant freeing the economy from traditional restrictions and

limitations due to politics, religion, or tradition, which established a new, mainly economic order intended to be even more 'solid' than what it replaced precisely because it was free from any kind of social, political, or cultural leverage. The liquefaction or dissolution of rigid or established forms is at the heart of any form of modernity and what has changed today, in its 'liquid' or 'second' phase, then is 'a redistribution and reallocation of modernity's "melting powers"' (Bauman, *Liquid Modernity* 6). Modernization, which in the nineteenth century had been determined by its opposite (i.e. the traditional), has today '*consumed and lost its other* and now undermines its own premises as an industrial society along with its functional principles' (Beck, *Risk Society* 10). Whereas solid modernity demystified 'privileges of rank and religious world views,' liquid modernity does the same to our 'understanding of science and technology as well as to the modes of existence in work, leisure, the family and sexuality' (Beck, *Risk Society* 10). A second, liquid modernity is turning against the principles of its predecessor, but in both Bauman's and Beck's view this means not the end of modernity, and thus a 'post-modernity,' but rather the onset of new modernity – the beginning of a liquid, fluid, reflexive, and ever-changing form of modernity. As Bauman points out in his 2012 foreword to the second edition of *Liquid Modernity*:

What was some time ago dubbed (erroneously) 'postmodernity', and what I've chosen to call 'liquid modernity', is the growing conviction that change is *the only* permanence, and uncertainty *the only* certainty. A hundred years ago 'to be modern' meant to chase 'the final state of perfection' – now it means an infinity of improvement, with no 'final state' in sight and none desired. (ix–ix)

This new form of modernity is thus, according to Bauman, best categorized as an uprooting of patterns, structures, and figurations in all those aspects of life that have dominated the solid phase of modernity: nation, territory, class, family, neighborhood, religion, and ethnicity. As a consequence, when all boundaries separating people from each other are dissolved, and markers of difference become porous, then any attempt at sociological theorizing must start from the assumption of liquid modernity as 'a condition of *global space*' (Tester 161). Bauman argues that 'by far the most prominent and seminal feature of our time is the emergence of "global figuration": of a network of dependencies which covers the entirety of the planet' ('Wars' 11) – in his argument referring to similar concepts as those expressed by Braidotti in her discussion of the Anthropocene and posthuman becoming-earth. The

globalized economy, transnational capitalism, and planetary media networks represent this 'global figuration' that determines 'our' future and is beyond any form of localized control. But with the advent of the Anthropocene, the accompanying risks of this global network of power grow to planetary proportions:

Our present dangers differ from those the category of 'risk' strove to capture and bring to light because they are *unnamed* until they strike, *unpredictable* and *incalculable*. And the setting for the birth of our dangers, from which they emerge, is no longer framed by the *Gesellschaft* or society – unless the concept of *Gesellschaft*, in opposition to its orthodox connotations, is made coterminous not with the population of a territorial nation-state, but with the *population of the planet*, with humanity as a whole. (Bauman, *44 Letters* 113)

I want to extend this sentiment, with a critical posthumanist view in mind, to the notion that the frame in which to understand and think globalization needs to be planetary, that any solution or social destiny needs to be *zoe*-centric.

On the other hand, the processes of globalization bring with them a shift in the conception of politics, defined by Bauman among other things as 'the art of translating individual problems into public issues, and common interests into individual rights and duties' (*Society* 170), which has now been 'substituted by a myriad of private and individual life-projects and a lack of concern with long-term or collectively binding political engagements' (Jacobsen, 'Liquid' 77). Instead of political institutions defining public policy, the main struggle of the political has become life politics, the individual as the central 'body politic': 'Life politics [...] is from beginning to end enclosed in a framework of individuality: the individual body complete with the "inner self", personal identity claimed and granted [...] Life politics is self-centred and self-referential' (Bauman, *Society* 170–71).

In liquid modernity, former solid patterns and organizing configurations have become contradicting and thus lost their compelling power over the individual; they have been dissolved into options for life choices. The dissolution of solids has moved from macro-levels of society towards the micro-levels of life policies. The choices of living have become privatized in liquid modernity, 'the burden of pattern-weaving and the responsibility for failure falling primarily on the individual's shoulders' (*Liquid Modernity* 8).

As we can see, then, Bauman's work centers on the changes brought about by contemporary society in two different directions of inquiry.

On the ‘meta-level of human being in the world’ we find an inquiry into the functions and consequences of globalization, whereas on the ‘life-political level’ he analyzes specifically the individual effects of liquid modernity (Tester 162). Both levels, of course, are complexly interwoven and form the synthesis that makes up his work in the last two decades – from conceptions of postmodernity to liquid modernity – but the different foci of global and individual change make a good starting point for discussing Bauman’s concept of liquid modernity.

2.3.2 Globalization and Liquid Modernity

The key to understanding globalization in Bauman’s thinking is that it is characterized by what David Harvey has called ‘time-space compression’ (284), and which differentiates, while at the same time interconnecting, the experiences of globalization and localization: ‘Globalization divides as much as it unites; it divides as it unites – the causes of division being identical with those which promote the uniformity of the globe’ (Bauman, *Globalization* 2). Globalization processes throw into sharp contrast the mobility of the global population, with freedom of movement – in pre-modern times already a source of inequality of power – becoming the defining factor of liquid modernity. The globalization process has raised mobility and speed to be the top value in determining social, political, economic, and cultural hierarchies by compressing spatial categories to be virtually non-existent.

Bauman’s argument is based on the principle of modernity as progress (in the sense of ‘moving through space’), rendering movement the ultimate goal of progress. The struggle between space and time as independent but interrelated factors is what defined the solid stage of modernity, bringing with it concepts such as the Panopticon or national boundaries, symbolizing the exertion of power by the restriction of spatial movement (*Liquid Modernity* 9–10). In solid modernity, the Fordist factory came to be a model of the workings of reality – both socially and individually: Reality was determined by the solid, controlled, and bound system of labor and workplace that was needed in industrial times. Space was a fixed category and the decrease in time needed to control or conquer space was the measure of progress. In liquid modern times, though, the speed of progress has increased to virtual instantaneity, and in consequence ‘power has become truly *exterritorial*, no longer bound [...] by the resistance of space’ (*Liquid Modernity* 11). Power, Bauman argues, has become ‘increasingly mobile, slippery, shifty, evasive and fugitive’ (*Liquid Modernity* 14):

The new hierarchy of power is marked at the top by the ability to move fast and at short notice, and at the bottom by the inability to slow down those moves, let alone arrest them, coupled with its own immobility. Escape and evasion, lightness and volatility have replaced weighty and ominous presence as the main techniques of domination. (Bauman, *Individualized Society* 35)

This shift in domination is best exemplified in globalized capitalism, which has become unrestricted as never before, in effect granting capitalist forces spatial independence from local governments and dissolving the ‘territory/nation/state trinity’ (Bauman, ‘Fate’ 289) that ordered and controlled global space during solid modernity. With the advent of globalization and exterritorial economic power, the ability of the state to impose laws and restrict corporate decisions has been severely limited. Instead of the Fordist factories of solid modernity, which tied capital to local workers and machinery and therefore to the states they were in, liquid modern capital is determined by a ‘new policy of disengagement and noncommitment’ (*Liquid Modernity* 150) that keeps investments highly mobile, flexible, and unbound – independent of the territory/nation/state trinity. Focusing on ideas and the digital culture of liquid modernity, rather than objects and the material culture of solid modernity, this new economic power ‘moves with the speed approaching the velocity of the electronic signal,’ making it ‘practically free from constraints related to the territory inside which it originated, towards which it is aimed or through which it passes on the way’ (*Globalization* 55). This ties in with Braidotti’s argument that capitalism itself has become posthuman in the sense that the current objective of capitalist enterprises is informational as well as biopolitical: ‘Data banks of bio-genetic, neural and mediatic information about individuals are the true capital today’ (Braidotti 61). All life, on a global scale, becomes the informational venture capital of the globalized, liquid modern system – making a profit means being able to surf information flows of a global *zoe*-centered economy: ‘The global economy is post-anthropocentric in that it ultimately unifies all species under the imperative of the market and its excesses threaten the sustainability of our planet as a whole’ (Braidotti 63).

Further, a state’s influence on keeping capital in its territory has vanished with that capital’s need for a specific local labor force – shifting it to globalized information processing independent of locality – while at the same time leaving the workers (those that provide Fordist factory work and manual labor) ‘to be the most expendable, disposable and exchangeable parts of the economic system’ (Bauman, *Liquid Modernity*

152). The threat of moving capital elsewhere is enough to undermine any state regulation, while at the same time, territory as a boundary has become porous through the globalizing effects of Anthropocene reality and a network of interconnected reliance, tying together everything on the globe with everything else.

Resulting from global capitalism's desire and need for exterritoriality and freedom from state-imposed constraints, Bauman identifies a current strategy in forcing resistant states into this 'new world order' by 'globalizing wars' justified to ensure the unhindered interests of a supposed 'international community' ('Wars' 14). In effect, these conflicts need to be understood as the assertion of a global economic order by non-political means, in that they are intended to bring into line states resistant to the global flow of power, information, goods, and capital (Tester 167; Bauman, *Liquid Modernity* 187). Bauman comments on the symbolic nature of these wars, as the message – a fluid and unhindered movement of power – is also encountered in the medium itself. War is fought in the manner of 'frontier-land' conflicts: no territory to claim and defend, constantly on the move, shifting allegiances, and a focus on flexible tactics instead of mere weapon power (Bauman, *Society* 90). Continued management of the territory is to be avoided at all costs, as the free and flexible access of power to the territory is the objective of the war: 'Ideally, a globalizing war would be a hit-and-run affair: forcing the adversary into submission without taking charge of the immediate consequences, side-effects and "collateral damages" of the military actions' ('Wars' 17). As a result, these wars are fought via necropolitical means, sorting life matter into informational categories of usefulness, and using posthuman drones with the express purpose of achieving more flexible goals. War evolves beyond the solid phase of territorial occupation, into what Achille Mbembe calls 'infrastructural warfare' (29), which aims at dissolving state control via the destruction of civil services while leaving the natural resources intact: 'Many contemporary wars, led by Western coalitions under the cover of "humanitarian aid" are often neo-colonial exercises aimed at protecting mineral extraction and other essential geo-physical resources needed by the global economy' (Braidotti 123).

On the opposite side, but just as much resulting from the rise of exterritorial and uncontrolled capitalism and the simultaneous waning of territorial state-controlled power over the effects of globalization, Bauman argues, is the practice of 'globalization-induced wars,' which are a direct reaction to the loss of territorial meaning: 'the more vulnerable the place becomes, the more radically it is devalued,' then 'the more it turns into an uncertain, easy to lose and difficult to gain, stake in the life

struggle. It becomes a focus of intense emotions, hopes and fears which merge into hysteria' ('Wars' 19). As a manifestation against globalization, extremely violent and overt conflicts arise that try to reclaim a sense of local resistance to the globalized insecurity and uncertainty of territory (Tester 167–68).

Interestingly, Bauman argues, reminiscent of Braidotti and the Anthropocene as a geopolitical reality, that there is a 'present-day *mutually assured vulnerability* of all politically separated parts of the globe' ('Reconnaissance Wars' 82):

Humanity has become universal because we can all die at one and the same time, either through the global effects of the local use of weapons that do not respect territory, or through the effort of the anxious and uncertain to shore up the few sources of a sense of security that remain available to them. And the compression of time and space means that there is no place left to hide from these terrors. (Tester 168)

But what is true for abstract power and corporations also holds true on the level of people, in that mobility, flexibility, and fluidity become the key features to personal success and freedom of choice: 'The degree of immobility is today the main measure of social deprivation and the principal dimension of unfreedom' (Bauman, *Individualized Society* 38). Bauman claims that people unable to move with the flow of capital, labor, and information are left behind, stuck in 'space,' whereas the global elite now 'live solely in time' (*Individualized Society* 40). This global elite is as 'light and volatile as the new capitalist economy which gave birth to them' (*Liquid Modernity* 153). Without territory they navigate the flow of information and capital that network society provides them with – thus completely inhabiting the posthuman condition of what Braidotti described as becoming-machine, their existence co-inhabited by the network of information flows and mediated globality. They embrace progress, change, and novelty, and symbolize their own flexibility in the use of a different language, as Bauman notes (with reference to Nigel Thrift):

To convey the gist of their own actions, they use metaphors of 'dancing' or 'surfing'; they speak no longer of 'engineering', but instead of cultures and networks, teams and coalitions, and of influences rather than of control, leadership and management. They are concerned with looser forms of organization which could be put together, dismantled and reassembled at short notice

or without notice: it is such a fluid form of assembly which fits their view of the surrounding world as ‘multiple, complex and fast-moving, and therefore “ambiguous”, “fuzzy” and “plastic”, ‘uncertain, paradoxical, even chaotic’. (*Liquid Modernity* 154)

At the opposite end of the power pyramid, globalization produces a growing number of ‘victims of order maintenance and economic progress, two eminently human, and blatantly unnatural enterprises’ (*Collateral* 7), who are best categorized with the provocative term of “human waste”, or more correctly wasted humans (the “excessive” and “redundant”, that is the population of those who either could not or were not wished to be recognized or allowed to stay)’ (*Wasted Lives* 5). More and more parts of the workforce, those unable to keep up with the newly required mobility, flexibility, and speed, are declared redundant by exterritorial capital: ‘To be “redundant” means to be supernumerary, unneeded, of no use – whatever the needs and uses are that set the standard of usefulness and indispensability. To be declared redundant means to have been disposed of *because of being disposable*’ (*Wasted Lives* 12). In Western societies, where biological survival might not be as dramatically challenged by this claim of redundancy, ‘wasted humans’ fear for their social survival, as re-entry into useful society is almost certainly denied. As Danièle Linhart suggests, ‘these men and women lose not only their jobs, their projects, their orientation points, the confidence of being in control of their lives; they also find themselves stripped of their dignity as workers, of self-esteem, of the feeling of being useful and having a social place of their own’ (cited in Bauman, *Wasted Lives* 13). Denied any social position in this fluid consumer-oriented society, the feeling that there is no remedy for the situation is overwhelming as there are no options to return to productivity. Their prolonged status as ‘wasted lives’ soon becomes problematic in that it blurs the lines of separation from the rest of society and by throwing up an image of a potential future of all of us: ‘Rather than remaining a misery confined to a relatively small part of the population, as it used to be perceived, assignment to “waste” becomes everybody’s potential prospect – one of the two poles between which everybody’s present and future social standing oscillates’ (*Liquid Times* 32).

Even worse off are the ‘wasted humans’ of newly modernized societies, in which liquid modernity has just recently found a foothold, because as it now becomes ever more obvious that ‘our planet is full,’ as Bauman so provocatively calls out, in a ‘statement in *sociology and political science*’ (*Wasted Lives* 4–5). Whereas before, human waste, if unmanageable in its own modernized society, could be expelled through

colonization and imperialist conquest to these pre-modern societies, thus providing 'global solutions to locally produced "overpopulation" problems,' now with modernization 'crowding' the planet, globalization forces these societies to seek 'local solutions to globally produced problems' (*Wasted Lives* 6).

As survival becomes threatened, physically and socially, and no release valves for the building pressures are available, the issues of immigration and asylum become ever more relevant to global politics. In frontier-land, refugees find themselves stateless in an extreme sense of the word, as no state exists to which they could be attributed: They are 'outside law; not this or that law of this or that country, but *law as such*' (*Wasted Lives* 76). They are forced to stay liminally adrift, to rephrase Michel Agier (cited in Bauman, *Wasted Lives* 76), in camps outside of controlled statehood and being denied any form of identity – no place, no community, no purpose. Those camps, as Braidotti argues, are the 'undignified monuments of posthuman inhumanity' as they showcase necropolitical management of 'disposable humanity' (127): 'the generalized instrumentalization of human existence and the material destruction of human bodies and population' (Mbembe 19).

The alternative to inhuman camp life is becoming 'economic immigrants,' scraping together their last money to head out towards a new place, only to find that they 'do not change *places*; they lose a *place* on earth, they are catapulted into a nowhere' (Bauman, *Society* 112). As such, their exterritoriality, mirroring the fluid state of being of the global power elite as bizarre doppelgängers, makes them ideal targets for the fear and anxiety of the waning territorial power in the societies they are fleeing towards. Whereas the elite cannot be confronted, fears cannot be defused, the refugees in their forced movement, be it for economic or political reasons, become the scapegoats to blame for any and all existential uncertainty:

'asylum seekers' have now replaced the evil-eyed witches and other unrepentant evildoers, the malignant spooks and hobgoblins of former urban legends. The new and rapidly swelling urban folklore puts the victims of the planetary outcasting in the role of the principal 'villains of the piece' – while collecting, collating and recycling the transmitted lore of hair-raising horror stories, for which the insecurities of city life have generated, now and in the past, a constant and ever more avid demand. (*Liquid Times* 43)

Fear of uncertainty and insecurity is thus found on both sides of this divide. Aside from the very few on top, we all find ourselves in the

(potential) position to easily lose our identity, our livelihood, and our life projects as these categories become more and more fluid in liquid modernity and the posthuman predicament. Just as the unemployed in our societies tend to remind us of the precariousness, so do the aliens nearby – represented in the refugees of the globalized power struggles. This problem of precarious existence concerns both globalization – the meta-level – and the individual, life-political level of liquid modernity and thus functions as a bridge between the two.

2.3.3 Individuality and Liquid Modernity

We live in a ‘society of consumers,’ Bauman argues, a society ‘guided by seduction, ever rising desires and volatile wishes – no longer by normative regulation’ (*Liquid Modernity* 76). As such, we have given up the organizing principles that a society of producers is based upon: a life of conformity and limitation on the one hand, but one that has reference points, established roles, and security. A society of consumers places importance on instant gratification, on the immediate accessibility of goods, and on the consumer’s ‘adequacy – of being “ever ready”, of having the ability to rise to the opportunity as it comes’ (*Liquid Modernity* 77). Consumption has become the one defining mode of our existence: We are trained ‘to perceive of the world as of a container full of disposable objects, objects for one-off use. The whole world – including other human beings’ (*Individualized Society* 156). Our lives become our individual responsibilities in a world that ‘consists of *offers*, not *norms*,’ where the act of making choices is not only desirable but at the same time ‘*unavoidable*: a life necessity, and a duty. And that responsibility, the inalienable companion to free choice, stays where the liquid modern condition has forced it: on the shoulders of the *individual*, now appointed the sole manager of individually conducted “life politics”’ (*44 Letters* 73).

The ongoing process of individualization is, according to Alan MacFarlane, ‘the essential feature of “modernity”’ (486), which Alexis de Tocqueville famously castigated as ‘being no longer attached to one another by any tie of caste, of class, of corporation, of family’ and which led men to be self-absorbed, ‘to retire into a narrow individualism’ (cited in MacFarlane 486). But while solid modernity freed the individual from these constraints, freed emancipated man ‘from the tightly knit tissue of communal dependency, surveillance and enforcement,’ it also set before him the task of individual living, of ‘needing to *become* what one *is*’ (Bauman, *Liquid Modernity* 31–32). In the first, solid phase of modernity this meant finding one’s position in choosing the societal

roles offered to the individual, rather than being ascribed one by birth. Thus, becoming a member of a social group meant the continuous achievement of enacting the patterns of and conforming to the norms of a specific role (*Liquid Modernity* 32). But both Beck and Bauman see a significant change imposed on the individual in the second, liquid phase of modernity, in that all categorical security has been transformed into a state of precariousness and that ‘active effort’ has become a necessity of individualism: ‘One has to win, know how to assert oneself in the competition for limited resources – and not only once but day after day’ (Beck and Beck-Gernsheim 3).

In their judgment of these consequences, Beck and Bauman diverge: Bauman argues that the first, solid phase of modernity “disembedded” in order to “re-embed” and that today there is ‘no prospect of re-embeddedment’ (*Liquid Modernity* 32, 34). Beck, though, argues that at ‘the same time as this liberation or “disembedding” occurs, new forms of reintegration and control are created (“re-embedding”)’ (‘Zombie Categories’ 203). Beck’s outlook might be more constructive towards possible social changes in this development, but he and Bauman agree on the effects that modernity has on the individual in the sense that ‘individuals have to develop their own biography and organize it in relation to others’ (Lee 365), that everyone’s biography becomes ‘elective,’ ‘do-it-yourself,’ and because of the instable categories of current modernity also a precarious ‘risk biography [... in] a state of permanent [...] endangerment’ (Beck and Beck-Gernsheim 3). Bauman points out that this individualization is ‘a fate, not a choice’ and that risks, contradiction, and failure can still be systemic, but that our social reality keeps demanding we find biographical solutions for them (*Liquid Modernity* 34). Beck refers to this as living in a ‘risk society,’ in which risk becomes increasingly less natural but rather manufactured, and in which the individual is faced with ‘*industrialized, decision-produced incalculabilities and threats*’ (*Risk Society* 22) that go far beyond their capacity to deal with them (again referring back to the Anthropocene as a concept beyond the reach of the individual, even beyond society), as these threats are mostly global, imperceptible, and irreversible, and any action against them needs to be based in knowledge about them. At the heart of Beck’s ‘risk society’ argument as well as the core factor of liquid modernity is thus ‘precariousness’: as Bauman puts it, ‘the combined experience of *insecurity* (of position, entitlements and livelihood), of *uncertainty* (as to their continuation and future stability) and of *unsafety* (of one’s body, one’s self and their extensions: possessions, neighbourhood, community)’ (*Liquid Modernity* 160–61).

One aspect in which we are trying to counteract such a feeling of insecurity, as Bauman argues, is in envisioning community as ‘an island of homely and cosy tranquillity in a sea of turbulence and inhospitality’ (*Liquid Modernity* 182). But this is just as fraught with problems of volatility as other aspects of liquid modernity, as communities are changing as rapidly as life policies do. When work, relationships, living environments, and fashions change in a constant rearranging of one’s social commitments, then society, Émile Durkheim’s refuge for the individual, is just as ephemeral and not the ‘body “under whose protection” to shelter from the horror of one’s own transience’ (Durkheim, cited in Bauman, *Liquid Modernity* 183). Indeed, the idea that one can overcome one’s own transience, is at risk when collectivistic notions of immortality such as nation, culture, religion, and family are dissolving in the ever-changing progression of liquid modernity. Immortality, defeating the last enemy of modern notions of individuality, made possible in solid modern times via ‘membership of a durable totality’ in which ‘the circumstance not of one’s choice, was cast as giving sense to otherwise brief and meaningless human life’ (Bauman, *In Search* 35), cannot be achieved collectively anymore. Dying for nation or religion and thus becoming immortal through collectivism is not appealing to the individual in liquid modern societies.

Liquid modernity seems to prefer the individualistic approach to immortality through the symbolic (in either the memory of one’s children or in leaving traces in the collective memory) by making a mark on history. The self-centered and celebratory road of stardom, self-aggrandizement, and public exposure seems to be the contemporary strategy of choice in order to achieve immortality. In addition, Bauman says, (solid) modernity’s attempts at deconstructing death into a number of disturbing but ultimately manageable sicknesses has shifted into liquid modernity’s deconstruction of immortality:

[T]he majestic yet distant immortal bliss that is being deconstructed into a sackful of bigger or smaller, but always-within reach, satisfactions, so that in the ecstasy of enjoyment the likeness of the ultimate perfection may dissolve and vanish from view. Each moment, or no moment, is immortal. Immortality is here – but not here to stay. Immortality is as transient and evanescent as the rest of things. (*Mortality* 164)

Consequently, living life to the fullest, making the moment eternal and thus being immortal in the here and now becomes the goal of individual life choices, leading to consumption of life itself: ‘Life becomes

just another item ready-made for consumption, the attraction being instant gratification and immediate obsolescence' (Jacobsen, 'Liquid' 85) – all life, human and non-human alike, becomes a commodity to be consumed. All categories of existence become transient in that they do not last: 'life, death, identity, love, work, immortality' (Jacobsen, 'Liquid' 86).

With the transience and constant protean changes of everything around us in mind, Bauman writes (in 2000) that the body appears to us as the 'longest-living entity around (in fact, the sole entity whose life-expectation tends to increase over the years),' making it all the more valuable to the individual as 'its mortality-bound brevity seems like eternity' (*Liquid Modernity* 182–83). But as one of the last vestiges of solidity, the body has come under attack by liquid modernity mostly through conceptions of the posthuman. As I have shown above, all life (*zoe*) has come to be a commodity, and the body, made of flesh and blood, deconstructed into genetic information, is today just as much ready for consumption. In an interview with Citlali Roviroso-Madrado Bauman argues that the 'aim to engineer human selves (indeed, to create a "new man") has accompanied the modern form of life from its inception' (exemplified in literature for example in *Frankenstein*, as I have argued above), with a string of experiments in social engineering that were terrifyingly flawed: 'the only consistent and effective specimens among them were also the most inhuman, cruel, atrocious and outrageous' (*Living* 144).

But social engineering might not have been the right tool to create a new human, Bauman concedes, because it 'was to be an operation performed on human society, not its individual members,' whereas new technologies nowadays aim their services at 'medical consumers' who have discovered their own bodies to be 'far from perfect' and available 'to be tinkered and tampered with' (*Living* 144–45). So the appearance of the body and even the essence of the body itself become objects of the same processes that other aspects of life have fallen under. They are prone to the individualized task of 'remaking oneself, dumping the discarded identity and constructing a substitute' in an act of 'being born again' (*Living* 148). But the process of cosmetics and enhancements of the body is time consuming, and it is discomforting, so the individualized, liquid modern society is undertaking the next commodification: life can become a matter of simply pressing the right buttons: 'Soon, you'll be able to view your own DNA on your iPod, and download other people's instead of the tedious and messy business of procreation' (Guy Browning, cited in Bauman, *Living* 149).

Posthuman technoscientific progress – especially genetic engineering

– promises to come through where social engineering failed: at making the ‘new man’. ‘Making yourself to the measure of your dreams, being made-to-your-own-order: this is, after all, what you always wanted, only lacking thus far the means of making your dreams come true. Now the means are within reach’ (Bauman, *Living* 149). Genetic engineering, cloning, and xenotransplantation promise the ultimate victory over Nature. Humanity is now almost at the point where it is able to place made-to-order beings above ‘the abominable and deeply resented messiness of the pre-cultural’ and all its ‘irregularity, randomness, underdetermination, underdefinition, ambiguity’ (*Living* 122). That final triumph of order over chaos is almost within reach, almost but not quite yet. Bauman questions the worth and wisdom of pursuing this objective further: In the past, he argues, dystopias were written to explore these possibilities and to cast a warning light on the ‘new horrors, no less if not more horrifying than the old ones, even if horrifying in a different way and for different reasons’ (*Living* 123). Dystopias were (and still are) warnings that our need for order and control over Nature might backfire. For this reason, he argues, utopian thinking needs to be part of our discourse on these new technologies, because as the science-fictional dimension of possibility grows closer, so the dimension of consequence becomes ever more important. We need to discuss the repercussions of crossing the threshold of the human ‘made-to-order’ ever more urgently, the closer we come to this possibility.

In the insecurity of liquid modern times, our dreaming of a better, more controlled and safe world – utopianism, in both its eutopian and its dystopian notion – becomes ever more relevant, as Bauman argues: ‘To put it in a nutshell, we dream of a reliable world, one we can trust. A secure world’ (*Liquid Times* 95). But utopianism is much older than liquid modernity and thus the idea of what constitutes a utopia – and thus exudes safety – has changed with time, as Bauman remarks: ‘We may say that if the premodern posture towards the world was akin to that of a gamekeeper, it was the gardener’s attitude that would best serve as a metaphor for the modern worldview and practice’ (*Liquid Times* 98). Bauman’s metaphor of the gamekeeper (of pre-modern times) was mainly one of controlling and keeping intact a world that was in perfect natural balance and as good as it could be. Upholding God’s design and keeping the boundaries of nature and culture under supervision were thus the ideals of pre-modern utopian endeavors.

With modernity came the urge to control and manipulate nature, resulting in the gardener’s approach as a concept of utopianism. ‘The declining importance of the church, secularization and an increasing

impact of a natural scientific worldview coupled with the rise of territorial state authority' (Jacobsen, 'Liquid' 75) brought with it a new approach to creating a safe and reliable world. In gardening utopias, man took control over his garden, giving it 'constant attention and effort,' forcing 'his preconceived design on the plot' (Bauman, *Liquid Times* 99) by selection, cultivation, and exclusion of unwanted elements. By controlling the garden and shaping it according to his will, the gardener creates a utopian blueprint, an ideal that society should strive for. As such, utopia is a modern project, Bauman argues, because in times of melting solids, of trying to find new and improved ways to order a society, 'Utopia was to be the fortress of certainty and stability; a kingdom of tranquility. Instead of confusion – clarity and self-assurance. Instead of the caprices of fate – a steady and consistent, surprise-free sequence of causes and effects' (*Society* 229). Utopias were seen as the end products of the modernizing processes, of the changing and insecure times leading towards new and better futures. But they were fixed, solid themselves, and could withstand the uncertainties of the times and tremors that society underwent. As such, utopia was stable, ordered, and controlled. Utopia needed a fixed space; it was based in territoriality.

In liquid modern times, though, this kind of 'utopian model of a "better future" is out of the question,' as Bauman puts it, because it promises 'fixity' in time and space, '*stasis*' once society has been engineered into 'perfection,' and an unwavering 'trust' (*Society* 239–40) in the future. All of these are not part of individualized, consumption-oriented society of liquid modernity; rather 'happiness means now a *different today* rather than a more felicitous tomorrow[, it] [...] has become a *private affair*, and a matter for *here and now*' (*Society* 240). Utopia – or at least the dream of a better life, of the soothing of one's discomforts – has become privatized, separate from the well-being of others, and even a somewhat generic term for individual wish fulfillment, as Bauman argues after having googled the term and sampled the resulting websites: 'all of them offer *individual* services to individuals seeking *individual* satisfaction and *individual* escape from *individually* suffered discomforts' (*Liquid Times* 103).

Most importantly, utopia in liquid modernity is 'linked to mobility, not to a place': 'The liquid modern equivalents of the Utopias of yore are neither about time nor about space – but about *speed* and *acceleration*' (*Society* 241). Bauman concludes that 'the posture of the gardener is nowadays giving way to that of the *hunter*' (*Liquid Times* 100). His argument is that we don't believe in a better, safer, and fixed state of life – utopia as fortress, utopia as garden – but rather have embraced the

ideology that security is an impossibility and that in order to survive we must act according to the idea that “good luck” means keeping “bad luck” at a distance’ (*Liquid Times* 104), that escape (by being faster than everyone else) guarantees our well-being.

The hunter’s utopia is thus most importantly characterized not as a fixed goal to strive for, but as a process of living in constant movement. ‘Hunters search for fun, excitement, validation, consumer goods and identity’ (‘Liquid’ 76), Jacobsen argues, all the while sampling and surfing their way through an endless array of opportunities. Because of the ample and never-ending supply of new and enticing offerings to choose from – more than any individual could ever sample – both utopias and dystopias of societal proportion have been rendered obsolete and irrelevant by the individualized hunts:

Living in a world full of opportunities – each one more appetizing and alluring than the previous one, each ‘compensating for the last, and providing grounds for shifting towards the next’ – is an exhilarating experience. In such a world, little is predetermined, even less irrevocable. Few defeats are final, few if any mishaps irreversible; yet no victory is ultimate either. For the possibilities to remain infinite, none may be allowed to petrify into everlasting reality. They had better stay liquid and fluid and have a ‘use-by’ date attached, lest they render the remaining opportunities off-limits and nip the future adventure in the bud. (Bauman, *Liquid Modernity* 62, quoting David Miller)

The downside of this kind of utopia is that ‘hunting is a full-time occupation’ (Bauman, *Culture* 27), in which ultimate satisfaction can never be achieved as some options are by necessity (because of the amount offered) never explored, some goods never sampled. For consumers, the misery is not how little is on offer, but that they must deny some of the offerings. The key to living in a hunter’s utopia is thus finding the right path, choosing the most advantageous options, and ‘getting the most’ out of the individual life lived. With this constant choosing comes the thrill of never being quite assured and satisfied that the choices were the right ones: ‘Hunting is like a drug: once tasted, it turns into a habit, an inner necessity and an obsession’ (*Culture* 28). The hunt itself much more exciting than the actual ‘kill,’ the next object of desire immediately beckons, as stopping the hunt is not an option: ‘In a society of hunters, the prospect of the end of the chase is not beguiling, it is horrifying: it would, after all, be a moment of personal failure’ (*Culture* 28).

As such, the hunter's utopia extends our conception of what is and determines the category of utopia. It is a 'strange and unorthodox utopia,' Bauman says, that might even require us to 'exchange the term "u-topia" for the term "u-via,"' as 'it brings forth a land of solutions and cures from the "there and then" of the distant future to the "here and now" of the present moment. Instead of a life towards utopia, hunters are offered a life in utopia' (*Culture* 29; see *Liquid Times* 108–09). But Bauman is wary of the utopian perspective that the hunt offers, as he concludes his musings by saying that 'the utopia, or "u-via", of hunters, the utopia of life revolving around the pursuit of constantly elusive fashion, does not give sense to life, whether authentic or fake. It merely helps to banish the question of life's meaning from our minds' (*Culture* 30).

2.4 Utopian Fiction: Eutopia and Dystopia

Utopianism, Lyman Tower Sargent famously argues, takes different forms and has many varied traditions (2). The 'Three Faces of Utopianism'⁷ that he discusses in the essay of the same name are 'utopian literature; communitarianism; and utopian social theory' (4), the first and last of which will be relevant to my analysis here. He then goes on to provide definitions of what constitutes specific forms of utopia that have so far proven to be the common denominator on which to base discussions of the topic. He defines utopianism as 'social dreaming – the dreams and nightmares that concern the ways in which groups of people arrange their lives and which usually envision a radically different society than the one in which the dreamers live' (3).

In terms of the literary utopia (and other media forms by extension), he then proposes the ideologically neutral term 'Utopia – a non-existent society described in considerable detail and normally located in time and space,' with the differentiation between 'Eutopia or positive utopia' and 'Dystopia or negative utopia' (9) depending on the authorial intention of depicting society as better or worse than the author's own. He strongly opposes the general conflation of anti-utopia with dystopia on the grounds that these are not depictions of negative societies but rather critiques that use 'the utopian form to attack either utopias in

⁷ The original essay 'The Three Faces of Utopianism' was published in 1967 in the *Minnesota Review*, whereas I am using the extended and revised edition that appeared as 'The Three Faces of Utopianism Revisited' in *Utopian Studies* in 1994.

general or a specific utopia' (8). Anti-utopias can be dystopian, but they need not be.⁸

Lastly, Sargent agrees with Tom Moylan that there is a newer, hybrid form of critical utopias, which depict a flawed yet positive utopia and which are characterized by a critical stance towards utopia itself: "Critical" in the Enlightenment sense of *critique* – that is expressions of oppositional thought, unveiling, debunking, of both the genre itself and the historical situation. As well as "critical" in the nuclear sense of the *critical mass* required to make the necessary explosive reaction' (Moylan, *Demand* 10; see Sargent 8–9). Following that argument, Sargent proposed the possibility of a '*critical dystopia*' (9), which prompted Moylan to later explore the category, which he argues is characterized by the same self-reflexivity as and continuing 'in the political and poetic spirit of critical utopias even as they revive the dystopian strategy to map, warn, and hope' (Moylan, *Scraps* 196).

The history of utopian literature (in both its eutopian and its dystopian form) with all its different literary variations is too long and varied to be discussed here in detail,⁹ but one of its key features is and remains 'its relationship with reality':

Utopists depart from the observation of the society they live in, note down the aspects that need to be changed and imagine a place where those problems have been solved; utopias are by essence dynamic, and in spite of the fact that they are born out of a given set of circumstances, their scope of action is not limited to a criticism of the present; indeed utopias put forward projective ideas that are to be adopted by future audiences, which may cause real changes. (Vieira 8)

Utopian literature is thus concerned with both a flawed or problematic present and the creation – by criticism, projection, and/or warning – of a

⁸ Tom Moylan explores the difference between anti-utopia and dystopia in his book *Scraps of the Untainted Sky* in developing what he calls 'The Dystopian Continuum,' a matrix of literary forms that shift between 'radical hope' and 'resigned pessimism' (195). In short, he argues that dystopia 'negotiates the continuum between the Party of Utopia and the Party of Anti-Utopia' (xiii) depending on the existence of an alternative to dystopia or the text's insistence on the settling into the status quo of the dystopia respectively.

⁹ For a short overview see Vieira, as well as the other essays in Claeys, *Companion*. Longer works discussing the changing utopian imagination are, among others, Baccolini and Moylan; Heller et al.; Kumar; Levitas; Moylan, *Demand*; Moylan, *Scraps*; Schaer et al.

new and better future. Whereas the eutopian form wants to set examples, informing the reader about alternatives for a better life, the dystopian form is 'pessimistic in its presentation of projective images' (Vieira 17) and uses a similar didacticism rather to warn readers about their responsibility to ensure that things do not turn out the way depicted. The reader's response is similar for both genres though: In both cases, the presented future is only supposed to show one possibility, one path that can be chosen. The critical variants (as discussed above), on the other hand, blur the lines of utopia/dystopia, leaving fragmented, diverse, and multiple futures for the reader to explore, and thus teach them 'not only about the world around them but also about the open-ended ways in which texts can both elucidate that world and help to develop the critical capacity of people to know, challenge, and change those aspects of it that deny or inhibit the further emancipation of humanity' (Moylan, *Scraps* 199).

Utopian/dystopian literature is thus the epitome of a creative intervention into central socio-political discourses that are negotiated in a given society, making it 'one of the most important means by which any culture can investigate new ways of defining itself and of exploring alternatives to the social and political status quo' (Booker 3). In this form of social criticism, dystopia 'constitutes a critique of existing social conditions or political systems,' defined not so much as a literary genre but rather as 'a particular kind of oppositional and critical energy or spirit' (Booker 3).

Sargent similarly identifies this critical energy in his third 'face' of utopianism: utopian social thought. He argues that social reform and the imagination of a better/different future are interconnected and interdependent: 'Utopia serves as a mirror to contemporary society, pointing to strengths and weaknesses, more often the latter. This is one of its most important functions' (27) in terms of both literature and social thought. But especially in the latter case, this function and how to apply it has not gone uncontested, as Ruth Levitas shows in her seminal study *The Concept of Utopia*. Levitas identifies the concept of utopia as an ideological battleground on which political, sociological, and cultural turf wars are being fought over what exactly the form, function, and content of utopia are. The range of utopian studies from the nineteenth century onward (Marx, Bloch, Mannheim, Marcuse, etc.) that she analyzes is impressive but nevertheless leaves her dissatisfied, as these voices remain in dissonance: 'The present absence of consensus, however, results not simply in the peaceful coexistence of different definitions but in competing claims for primacy' (180).

As a result, she proposes an inclusive definition that eschews discussions of content, form, and function in favor of 'a broad analytic

definition of utopia' (198). As Levitas explains, the 'essence of utopia seems to be desire – the desire for a different, better way of being' (181), all aspects of which are socially constructed and specific to circumstances and not inherent in human nature: 'Utopianism, then, has as a precondition a disparity between socially constructed experienced need and socially prescribed and actually available means of satisfaction' (183). Utopian thought is the product of need faced with a 'scarcity gap' (184) in realizing that need. Because of the socially constructed nature of both need and satisfaction, Levitas further argues, there cannot be an evaluation of utopia based on universal principles of what constitutes a 'good society' and what a 'bad society': 'If needs are socially constructed, the project of trying to read off the good society from a definition of human nature and human needs is doomed to failure' (184). In terms of their ideological evaluation, utopias' value is just as socially constructed and not universally recognized, making it possible for utopias to be counter-cultural or culturally affirmative, socialist or neoliberalist, Marxist or fascist (183ff.). Lastly, Levitas addresses the issue of practicability or possibility by saying that utopia is defined by desire for improvement, not necessarily by the hope that change towards that desire is possible:

The essential element in utopia is not hope, but desire – the desire for a better way of being. It involves the imagining of a state of being in which the problems which actually confront us are removed or resolved, often, but not necessarily, through the imagining of a state of the world in which the scarcity gap is closed or the 'collective problem' solved. (191)

Consequently, utopia does not always include societal solutions to the problem, but would also allow the 'pursuit of individual psychological and physical "fitness"' that signals a 'withdrawal of utopia from the social to the personal' (192). Under this definition of utopia, Bauman's continuous hunt for consumer goods certainly makes sense as a utopian construction.

What remains is the question of the function of utopia in regard to its sociological and political impact. 'The function of utopia,' Levitas concludes, 'thus reverts from that of a goal and catalyst of change to one of criticism, and the education of desire, without any necessary move forward into action' (196). This is especially true of the critical variety of both utopia and dystopia, characterized through its ambiguous nature, which in Levitas's opinion signals a loss of confidence: 'The presentation of alternative futures, multiple possibilities and fragmented

images of time reflects a lack of confidence about whether and how a better world can be reached' (196). The uncertainty, insecurity, fragmentation, and dissolution of social, political, and economic realities that we experience in liquid modernity are thus reflected in critical utopia/dystopia's ambiguous models of potential change.

For Levitas, the problem of a realization of change lies not in utopianism but in 'political culture in general,' as the urgency of political action grows while the agent of change is increasingly absent with the demise of proletarian socialist revolutions, as we seem 'unable to substitute convincingly any group or element which would form the basis of opposition' (196). But exciting political action is not the only function of utopia; rather it serves as cultural 'exploration of the implications of alternative values,' presenting the transition towards a better state of being as '(i) merely possible, rather than inevitable; (ii) involving some kind of radical break from the present, necessary because it is not possible to identify trends in the present which seem likely to lead to utopia; (iii) a very vaguely defined event' (197). This analysis is reflective of Bauman's conception of utopia, which according to Jacobsen is 'an embryonic utopia of possibilities,' not a 'master plan or a blueprint,' and which 'oozes of ambivalence, emancipation and alterity, not control, order and subjugation' (Jacobsen, 'Liquid' 91).

Bauman shares Levitas's analysis that the possibility of utopian change is located in politics and that political agency has been dissolved: 'The most conspicuous feature of contemporary politics,' Bauman writes, 'is its *insignificance*' (*In Search* 4). The dual translation between the public and the private that politics is supposed to facilitate has been turned inside out, as Bauman argues, and 'politics has been effectively disarmed' (*Society* 169). Flaws in policy cannot be grasped as unethical anymore, because they do not connect to the individual directly, whereas unethical private actions become political outrages (as witnessed in the Clinton-Lewinsky affair), when the individual life choices do not appeal to the public. Politicians have been replaced by idols, who share their private life politics, becoming examples not leaders. Politics has become part of liquid modernity's array of privatizations and individualizations, in the process losing utopian vision and intention. The main concern in regard to this concentration on individual life politics instead of global political and social issues, as Bauman claims (drawing on Cornelius Castoriadis), is a loss of self-reflection necessary for utopianism: 'the trouble with the contemporary condition of our modern civilization is that it stopped questioning itself. Not asking certain questions is pregnant with more dangers than failing to answer the questions already on the official agenda' (*Globalization* 5). Bauman continues by claiming his book – and

all of his sociological work – as an ‘exercise in asking and prompting the asking of questions’ (*Globalization* 5).

This then is the utopian dimension in Bauman’s work: instead of providing blueprints and ‘map[ping] out the future in inches and minutes,’ his thought needs to be understood as ‘iconoclastic’ in that ‘the future could not be described [...] it could only be approached through hints and parables. One could “hear” the future, but not see it’ (Jacoby, *Picture* xv; see Jacobsen, ‘Liquid’ 91). Russell Jacoby had only five years earlier declared ‘blueprint’ utopianism to be dead and all hope of a better future extinguished by a fatalistic consensus that ‘[t]here are no alternatives. This is the wisdom of our times, an age of political exhaustion and retreat’ (*End of Utopia* xii). But Jacoby also believes that at the same time we might learn from ‘iconoclastic utopianism,’ even see it as ‘indispensable’ (*Picture* xvi). Central to his view is that the iconoclasts’ ‘pictorial reserve about the future coexisted with attentiveness to the present’; this form of utopianism has a strong ‘regard for the here and now. It yearns for the future and values the present’ (*Picture* 141).

This strong attentiveness to the present, as we have seen above described by critics in regard to literary utopias as well as sociology, can easily be appropriated to Bauman’s utopian thought, a complex of ideas which Mark Davis describes as ‘Bauman’s compass’: ‘a particular way of orienting ourselves towards the present, rather than towards some distant and longed-for future’ (187). Important to Bauman’s utopianism then remains the concentration on the current moment in liquid modernity, which Davis claims ‘allows us to ensure that we are better able to navigate the complexities and uncertainties of the current *interregnum* and to move hopefully beyond it’ (187). The *interregnum*, a concept originally introduced to Bauman’s work by Keith Tester, describes the early twenty-first century as beginning with ‘a dramatic stage of transition away from the established social, economic, political and environmental certainties of the recent past’ (M. Davis 185). Whereas the term originally describes a period of time that is characterized by the uncertainty during the transitional phase between two sovereigns, Bauman himself extends it beyond that individual process of transferring power from one ruler to the next, as Davis claims, in order ‘to capture those seminal moments when *an entire social order* starts to fragment and to lose its authority,’ especially ‘when there is no new social order currently ready to take its place’ (185). So when the solid phase of modernity began to unravel and dissolve, it left society in the new and globalized (dis)order of liquid modernity, but without any form of sovereign to replace the former ruler of liberal industrial capitalism. Bauman himself remains unsure if liquid modernity is ‘an augury or a

portent of things to come' or just 'a temporary and transient [...] interim settlement' representing thus a form of interregnum:

when the old ways of doing things no longer work, the old learned or inherited modes of life are no longer suitable for the current *conditio humana*, but when the new ways of tackling the challenges and new modes of life better suited to the new conditions have not as yet been invented, put in place and set in operation [...] we don't have a clear image of a 'destination' towards which we seem to be moving – which needs to be a model of *global* society, a global economy, global politics, a global jurisdiction ... Instead, we react to the latest trouble, experimenting, groping in the dark. (*Liquid Modernity* vii)

Social thought, as practiced by Zygmunt Bauman, takes into consideration the darkness that is around us, and remains critical of the conditions of our lives, sees as its purpose the active 'asking' of critical questions and the disclosure of said conditions (*Liquid Modernity* 215). It is utopian, as Jacobsen and Tester (1) argue, in that it displays a *confidence* in finding a better being in the world, has the *hope* that finding the way there is worthwhile, and in that it identifies certain *latent tendencies* in our existence that project that future. In liquid modern reality, the latent tendencies that Bauman identifies are characterized by the decay, degradation, and dissolution of social categories, and thus need to be viewed in terms of the dystopian imagination – even if for the individual the hunter's utopia might be a feasible and subjectively positive path. These dystopian tendencies are not in any way less important to disclose though: 'Sometimes the uncovering of latent tendencies points to graveyards not just open fields and enchanting horizons. Yet knowing where the graveyards might be may enable the journey into the not-yet to take a different route' (Jacobsen and Tester 3).

Liquid modernity needs to be understood as a critically dystopian present that thinkers such as Bauman continuously critique and deconstruct, disclosing its eutopian and dystopian dimensions, in order for society to be able to see alternative routes to the future. But as Levitas has argued, the fragmentation of these futures, the dissolution of clear-cut boundaries, and the presentation of multiple possible paths leave us in the dark, unable to decide which way to turn as no destinations appear. Critical posthumanism, as described by Herbrechter, Wolfe, or Braidotti, may present us with the option to shine a light into that socio-political darkness as it opens up new ways of thinking and conceptualizing what Bauman describes as the current *conditio humana*.

In light of the posthuman conception of a *zoe*-centric becoming-animal, becoming-earth, and becoming-machine as well as taking into consideration the necropolitical dimensions of globalization and liquid modern, individualized consumer society, we find ourselves not in the *conditio humana* but rather in the *conditio posthumana*.

The technoscientific progress of genetic engineering, the late-capitalist globalized economic and media networks, and the Anthropocene condition of our existence all have catapulted us into becoming posthuman. The world around us has with its modern desire for progress become science-fictional. The historical dimension of possibility has long passed our human selves and embraced a posthumanity, and we only now catch up with the consequences of these transitions. The cultural formation of biopunk, grounded in the literary tradition of cyberpunk science fiction but extending beyond that, interconnects the diverging discourses on liquid modernity, posthumanism, and technoscientific progress into an array of artworks that negotiate the wide field of the critical dystopian imagination left open by our fears and anxieties, but also our hopes and desires in being posthuman. It will be the work of the next chapters to chart this field, to analyze exemplary cultural artifacts (films, TV series, novels, and video games) as artistic and social criticism aimed to provide a possible map of the dark and uncharted territory that lies ahead.

The Anthropocene, the Posthuman, and the Animal

We've just opened the great big gene-splicing toy box and people are going to be playing with that for years. (Margaret Atwood, cited in Halliwell 260)

As has been discussed in the last chapter, biopunk is firmly rooted in a variety of socio-political discourses, from globalization to posthumanism to technoscience. With its heritage in cyberpunk, itself a subgenre of science fiction and a cousin (closely related) to the utopian/dystopian tradition, it seems only sensible to begin an analysis of biopunk with the 'original' medium from which the formation was born: literature. Within the cultural formation, literary works represent a strong connection not only to the sf genre tradition, but to biological sf, to dystopian critique, and to social commentary. The contemporary public interest in genetics and the posthuman can be noticed not just within the core of the genre, with its hard sf ecocriticism and vivid extrapolations of hybrid posthumanity, but also at the fuzzier edges, where delegates of the high cultural elite pick up on its themes and issues. In this chapter, I will thus provide posthumanist readings of two recent literary works that extrapolate from a liquid modern present, exploring its dystopian dimension and leading towards a posthuman future as critical utopian alternatives. I have chosen two authors and their works that could be argued to assume peripheral and central positions within the spectrum of sf respectively.

On the one end, Margaret Atwood's recently completed MaddAddam trilogy (*Oryx and Crake* [2003], *The Year of the Flood* [2009], and *MaddAddam* [2013]) functions as a liminal work on the demarcation line between 'literary' and 'genre' fiction. Atwood herself has been instrumental in the demarcation, insisting on her work being 'speculative fiction' rather than 'science fiction proper' ('My Life' 159). I do not wish

to engage in the genre debate and will for the purpose of this study simply repeat contemporary genre theory in that genre status is continuously negotiated by ‘communities of practice’ (Rieder 201) and that large parts of the reading community have deemed the MaddAddam trilogy to be ‘science fiction’ and possibly even ‘biopunk’ (as witnessed in the original inclusion of the first two books in the Wikipedia entry [removed in 2010]). Further, her trilogy, which combines science-fictional tropes with realistic narrative technique, has been analyzed excessively by literary scholars and debated in regard to a variety of topics – satire and humor, religion and myth, ecology, capitalism, technology, writing, and many more.¹

In the following, I will approach the novels as literary interventions in the current debate on posthumanism and for that purpose contrast Atwood’s work with that of another sf writer: Paolo Bacigalupi. Whereas Atwood tries to avoid the label of ‘science fiction’ and thus represents the fringe of the genre that would rather appear as a mainstream literary form, Bacigalupi is firmly established in its center. His short stories and novels have garnered virtually every award sf has to offer – the debut novel *The Windup Girl* (2009) alone won the Hugo, Campbell, Nebula and Locus Awards and has in its impact on the genre been compared to Gibson’s *Neuromancer* (see Hageman 187). Posthumanism plays a role in most of Bacigalupi’s work, but for the purpose of my analysis, I will concentrate on *The Windup Girl* and two related short stories, ‘The Calorie Man’ and ‘The Yellow Card Man’ (both from *Pump Six and Other Stories* [2008]), that are part of the same fictional universe and reference the same posthuman beings.²

What brings Atwood and Bacigalupi together is the imagination of a critical dystopian future, extrapolated from our contemporary liquid modernity, in which the posthuman has become a tangible reality that

¹ A full discussion of the secondary material available would go beyond the scope of this chapter – at the moment there are more than 100 articles and book chapters discussing the first two novels in the series. Some examples will need to suffice: satire (Dunning; Dvorak; Hume), religion (Hengen; Hoogheem; Osborne), ecology (Bergthaller; Canavan; Dunlap; Rozelle), capitalism (Davey; Hall), technology (Cooke; DiMarco), and writing (Cole; Storey and Storey).

² Both stories have been collected by Bacigalupi’s publishers Night Shade Books under the title *Windup Stories* as an eBook. The subtitle is ‘Stories from the World of *The Windup Girl*.’ I will use the term ‘Windup stories’ to mean the fictional universe that includes the novel and the short stories. Page numbers for the short stories refer to their publication in *Pump Six*, not in the eBook.

is trying to establish a position in the 'natural order' and ultimately ends up threatening to replace the human completely. Both scenarios establish a world of rampant capitalism, of individualistic consumer societies, leading to a global ecological catastrophe, the development of transgenic species (across all biological domains), and ultimately the creation of a rival species of posthumans.

In Bacigalupi's *The Windup Girl* the world has undergone drastic economic, political, and ecological changes. After a period of 'Expansion,' energy production through fossil fuels collapsed completely, leading to a worldwide economic 'Contraction' period: Global transport, industrial production, computing, and high-speed communication have become impossible to maintain and energy necessarily needs to be produced manually. During the Expansion, genetic engineering technology has created corporate interest in food patenting. This led to food wars, in which so-called 'calorie companies' created plagues and pests that destroyed unpatented food, so that they could then distribute their own disease-resistant strains of the same food for large profits. Global warming caused sea levels to rise and the planet's environment was almost destroyed. The novel takes place in Thailand after the Contraction, when the economy is slowly recovering. Thailand is one of very few remaining independent nation states that resisted the calorie companies due to strictly and violently enforced trade laws and the reliance on a genetic seed bank as a national treasure. The plot revolves around Anderson Lake, a calorie man, a secret trader for the global calorie companies, trying to get his hands on the seed bank and on the renegade geneticist that helps to develop new and secure food sources for Thailand. At the same time, an internal struggle for power erupts in an outright war between the two largest ministries (Trade and Environment), determining the future of the Thai kingdom and sweeping up all of the novel's characters in its chaos.

Atwood's trilogy deals with a similarly devastated near future in which climate change made large parts of the earth uninhabitable: Temperatures and sea levels rose, fertile lands became deserts and humanity's energy hunger depleted most natural resources. The elite population now lives in class-segregated communities ('Compounds') and revels in bacchanalian ignorance and consumption, while the masses barely survive in squalor ('pleeblands') and constant fear of disease, crime, and natural catastrophe. Nation states have given way to global corporate rule, and especially biotechnological progress and its capitalist consumption have had a major impact on society and environment. But this corporate rule ends when the renegade scientist Crane (a codename derived from an extinct species) genetically engineers a plague that wipes

out humanity, which he sees as faulty and destructive. As an alternative to the human species, Crake creates a race of *posthumans* (referred to as the Children of Crake, or Crakers) that after the demise of the faulty species is supposed to repopulate the earth.

Oryx and Crake portrays both the pre- and the post-apocalyptic world through the eyes of Jimmy, a childhood friend of Crake's who becomes a pawn in Crake's god game and is spared, to witness the extinction of his world. As Snowman (Jimmy's self-chosen codename), the 'last man on earth' (or so he believes) then becomes guardian and spiritual guide for the Crakers, leading them into the future, mourning for the loss of humanity. But the novel ends with Snowman finding three other human survivors and pondering what to do.

The Year of the Flood is not a sequel but a parallel narration that adds a different perspective to the same events. Whereas *Oryx* dealt with the male, privileged perspective of the Compounds, *Year* now interjects with the female, precarious perspective of the pleeblands. Focusing on the story of Toby and Ren, two female members of the eco-religious God's Gardeners group, which offers an alternative to the corporate, exploitative lifestyle of the Compounds, the novel again portrays the events leading up to the plague, as well as how the women survive after the plague. In the end, both women end up with a group of former Gardeners and geneticists called MaddAddam that separated from the religious group and formed an anti-corporate bioterrorist cell, which is mainly responsible for the genetic work on the Crakers, blackmailed by Crake into compliance with his plans. The novel ends with Toby and Ren searching for another ex-Gardener, Amanda, who has been kidnapped by two surviving Painballers, brutal escaped convicts. They find all three at the beach, when suddenly Snowman appears on the scene.

MaddAddam, the third book in the series, then finally offers a real sequel to the events of *Oryx*. Beginning with the encounter between Snowman, the Painballers, and the ex-Gardeners, *Madd* relates the story of the creation of a new community that includes the ex-Gardeners, the MaddAddamites, and the Crakers, as well as their ultimate defense against the escaped Painballers. The post-apocalyptic narration is again interlaced with stories from pre-apocalyptic times, this time from the perspective of Zeb, the leader of MaddAddam and brother to the founder of the Gardeners, filling in many of the gaps the two former novels left open on how the Gardeners came to be and how deep their involvement with Crake was. The novel ends with a showdown with the Painballers and a hopeful look towards a future community with all survivors of the plague, both human and posthuman.

In the following, I will show that in both fictional worlds, the idea of the 'human' is under attack by liquid modern realities, losing its categorial integrity through corporate manipulation and environmental influences. Atwood and Bacigalupi, in their works, undermine concepts of human exceptionalism, question the ontological stability of biological categories, and reveal a belief in the interconnectedness of all life on the planet. In both works, the human is reduced by hypercapitalism to become inhuman, non-human animals are introduced to showcase categorial liminality – if not outright transgression – and to reveal the interrelatedness of species, and finally the 'posthuman' is staged as an alternative category better equipped to prosper in the post-catastrophic environment, having to negotiate its position in regard to the still-existent 'human.'

3.1 Eco-Catastrophe, Hypercapitalism, and the Inhuman

What unites the works of Atwood and Bacigalupi is the protean nature of their diegetic worlds and the ecological catastrophe as a catalyst for changes in the concept of the posthuman. The MaddAddam trilogy and the Windup stories discuss the shifting economic and ecological realities of their respective worlds. Both worlds have undergone ecological change due to rampant and unrestrained capitalism. In this, both fictional universes are extreme extrapolations of Bauman's liquid modernity where consumption becomes the only and all-encompassing urge that drives society.

In both worlds, then, hypercapitalism has brought about a commodification of any and all life on earth, which in turn has led to an acceleration of 'global change' within the Anthropocene, as defined by Will Steffen, Paul Crutzen, and John McNeill:

We use the term global change to mean both the biophysical and the socioeconomic changes that are altering the structure and the functioning of the Earth System. Global change includes alterations in a wide range of global-scale phenomena: land use and land cover, urbanisation, globalisation, coastal ecosystems, atmospheric composition, riverine flow, nitrogen cycle, carbon cycle, physical climate, marine food chains, biological diversity, population, economy, resource use, energy, transport, communication, and so on. (615)

For the National Research Council, human activity enacting these global changes 'could eventually lead to a "crisis in the biosphere"' (cited in

Steffen, Grinevald et al. 843) – could lead to a dystopian vision such as the ones imagined in both the MaddAddam trilogy and the Windup stories.

There are boundaries to human action that should not be crossed, Crispin Tickell argues, and he names nine scientific stops that humanity should note and respect. In Atwood's and Bacigalupi's universes, several of these stops have been ignored; Tickell mentions that we have already experienced the results of 'climate change' and 'loss of biodiversity,' and are on the way to cross further scientific boundaries, such as 'oceanic acidification,' 'changes in land use,' or 'chemical pollution' (927). More to the point, though, he argues, underlying the scientific changes brought about by the Anthropocene are 'six more general ones where the societal responses are critical' (927) – six aspects of the liquid modern world the human species needs to realize are destructive and need to change:

First we need to confront the effects of our own proliferation in all its aspects; next to look again at a lot of economics and replace consumerism as a goal; then to work out new ways of generating energy; to manage and adapt to what is in effect climate destabilization; to give higher priority to conservation of the natural world; and last to create the necessary institutional means of coping with global problems in a world in which society is more joined together than ever before. (927)

In the MaddAddam trilogy, the world has become uninhabitable due to climate change, but Atwood only mentions the consequences in passing. In *Oryx*, Snowman wakes up on the beach, looking out towards the ocean where the 'offshore towers stand out in dark silhouette [...] the distant ocean grinding against the ersatz reefs of rusted car parts and jumbled bricks and assorted rubble' (5). The scene shows the result of rising sea levels due to global warming: 'the coastal aquifers turned salty and the northern permafrost melted and [...] the Asian steppes turned to sand dunes' (29). Similarly, *Year* speaks of 'the big drought' hitting the 'Wisconsin desert' (56), 'the southern shores of the Mediterranean – once fruitful farmland, now a desert,' and the 'wholesale slaughter of ecosystems' (90) that haunts the planet. Toby thinks back on her youth and reflects a realization everyone had, but no one talked about: '*We're using up the Earth. It's almost gone*' (*Year* 239). Jimmy, as Hannes Bergthaller argues, 'is presented as symptomatic for the larger failure of his culture to tame the destructive appetites of its members' (733). He watches the world fall apart from the security of his Compound: 'more

plagues, more famines, more floods, more insect or microbe or small-mammal outbreaks, more droughts, more chickenshit boy-soldier wars in distant countries. Why was everything so much like itself?' (*Oryx* 307).

Atwood further focuses her world around the aspect of the proliferation of the human species in consumer society – satirically proposing a radical break with the human as the only option to stop the destruction of the environment. With dwindling natural resources and the continued ecological exploitation of the earth, Crake argues, humanity is doomed: 'You can't couple a minimum access to food with an expanding population indefinitely. *Homo sapiens* doesn't seem able to cut himself off at the supply end. He's one of the few species that doesn't limit reproduction in the face of dwindling resources. In other words – and up to a point, of course – the less we eat, the more we fuck' (*Oryx* 145). Humanity, the argument goes, will not learn and stop by itself – self-imposed discipline is impossible.

Consequently, Bergthaller states, Jimmy's world is one of corporate greed and full-fledged consumption, which has 'given up any pretence of disciplining people's desires. Instead, it has instated their stimulation and gratification as the central object of the social order' (733). It is, in effect, the extreme version of what Bauman describes as liquid modernity: Nation states do not exist anymore; instead an extreme form of 'corpocracy' (Appleton 64) rules a consumer society with an eye for maximizing their profit margins, replacing any ethical decision-making. Central to this rampant hypercapitalism is a shift from producing material goods to providing services for the consumer (as product) him- or herself, especially in regard to physical health. As Bauman notes, 'the human body is in most cases far from perfect, and therefore needs to be tinkered and tampered with to help it to improve or force it to meet to the desired standards' (*44 Letters* 58). Health as a personal goal is being replaced by fitness and beauty – two standards that can easily be manipulated, so that customers can constantly be kept in need of more services. Bauman goes further and describes the creation of ever higher standards in order to increase profits: 'demand must be created for commodities already launched on the market, thereby following the logic of a commercial company in search of profit, rather than the logic of human needs in search of satisfaction' (*44 Letters* 76, original in italics). Corporations will generate a demand for the products, even if it means inventing a specific lack of health – Bauman's example is 'eyelash hypotrichosis' (*44 Letters* 58), eyelashes that are too short and not dense enough for contemporary beauty standards, which makes them the target of corporate marketing. Instead of natural variety, these short eyelashes now become a medical condition in need of cure.

In Atwood's fiction this logic becomes even darker and more twisted, as corporations not only provide health and beauty services (satirically reflected in their brand names: 'HelthWyzer,' 'AnooYoo,' and 'RejoovenEsense'), making their clientele feel the need for wellness treatments and beauty enhancers. Rather, corporations turn back to health as an option for creating demand where none has been, an 'economics of scarcity': "'The best diseases, from a business point of view," said Crake, "would be those that cause lingering illnesses. Ideally – that is, for maximum profit – the patient should either get well or die just before all of his or her money runs out. It's a fine calculation"' (*Oryx* 256). In *Year*, the devastating consequence of this logic is demonstrated on Toby's mother, who becomes ill, is being treated by HelthWyzer, and then finally dies, just after the family's money has run out (25–26). The corporate machine works flawlessly, as Sarah Appleton remarks: 'Instead of relying on supply and demand, the corporations have created artificial demands and promoted engineered dependencies. Manufactured diseases necessitate manufactured cures; body enhancements need to be maintained with age' (71).

Bacigalupi's world is similarly broken: Here climate change also caused sea levels to rise, making it necessary to build 'dikes and levees' (*Windup* 121) to prevent Bangkok from being drowned. Further, the exhaustion of energy resources has left the remaining civilization ruined: 'the wrecked tower bones of the old Expansion' (*Windup* 60) dominating the skyline of the city and high-rises now nothing more than slums ruled by the Dung Lord and inhabited by thousands of refugees – 'A remnant glory from the old energy Expansion now become a heated tropic coffin without air conditioning or electricity to protect it from the glaze of the equatorial sun' (*Pump Six* 164). But more destructive than the climate, hypercapitalist greed is responsible for the destruction of the earth in this world too. Consumer society still remains and is responsible for shaping the political landscape in most parts of the world into a 'corpocracy.'

Instead of the health and beauty corporations, Bacigalupi's ruling powers are 'calorie companies' (*Windup* 6) though, engineering and patenting food sources: In a first step, calorie companies produced genetically altered seeds, 'so perfect from a CEO's perspective' because they were sterile: 'A genetic dead-end. A one-way street. We now pay for a privilege that nature once provided willingly, for just a little labor' (*Pump Six* 114). In a second step, they then created diseases and plagues that wiped out the non-patented (and thus not genetically secured) versions of the food: 'cibiscosis 111.b, c, d; *fa'gan* fringe; bitter water mussels and their viral mutations [...] blister rust' (*Windup*

121). Unfortunately, the diseases mutated, wiped out the earth's food supply, and forced the calorie companies to re-engineer their product constantly: 'If the world is going to keep eating, we need to stay ahead of cibiscosis and blister rust and Nippon genehack weevil. It's the only way' (*Windup* 151). Calorie companies wield the sterile and secure versions of 'TotalNutrient Wheat,' 'SoyPro,' and 'HiGro Corn' (*Windup* 6) as political weapons, eliminating nation states when they oppose them – only Thailand retains its independence due to the existence of a secret seed bank, 'while countries like India and Burma and Vietnam all fall like dominoes, starving and begging for the scientific advances of the calorie monopolies' (*Windup* 3).

In terms of Tickell's societal stops, the world of the *Windup* stories focuses not so much on over-population but rather on energy resources and their depletion, a topic, Bacigalupi argues, that garners too little interest from sf, as it should not simply be 'window-dressing' but rather feature 'as a major component of the story': 'Where does energy come from? Where does the food come from? [...] We have a perception of post-scarcity already. And that problem is rife in sf. I'd like sf to touch on those questions – it will inform the society we'll build and the objects we'll build in the future' (cited in Newitz, 'Paolo Bacigalupi'). His world is dominated by energy production after the depletion of fossil fuels, returned to a state as it was before the Anthropocene: 'energy needed to animate human society came from muscle – human and other animal muscle – and management of water and wind' (Tickell 929). In order to keep society running, 'kink-springs' (*Windup* 5) need to be wound through muscle power as 'batteries' for transportation and production – a world where any calorie spent as energy finds painstaking correspondence in a calorie eaten.

But most poignantly, both Atwood's and Bacigalupi's dystopian views also reveal the hypercapitalist exploitation of human life, which transforms the human into the inhuman. Foreshadowed in Bauman's liquid modern consumer society, these dystopias transform even life and death into commodities. Justified by a system of 'development,' as Jean-François Lyotard famously called it, 'political and socioeconomic decision-maker[s]' can legitimate any measure to ensure the systemic continuation of, for example, 'competitiveness' (5). Within this system, development takes precedence over anything; development itself – as an end, not a means – 'is reproduced by accelerating and extending itself according to its internal dynamic alone' (7). The human, Lyotard argues, is 'in the process of, constrained into, becoming inhuman' (2), irrelevant as the system perpetuates itself.

In the *MaddAddam* trilogy, for example, the human body becomes

commodified through genetics. The elite, living in the Compounds, objectify the human body not just by shaping their own bodies, through wellness and beauty treatments, but also by specifying parameters for their offspring, creating made-to-order children via genetic agencies: 'Infantade, Foetility, Perfectababe, one of those [...] They'd have a few trial runs, and if the kids from those didn't measure up they'd recycle them for the parts, until at last they got something that fit all their specs' (*Oryx* 302).

Even more tangibly, the human body becomes a source of entertainment for the rich by consuming it as desired in sexual services, such as those exemplified in *Oryx*, whom Crake encounters as part of his university's 'Student Services,' 'trained professionals' that provide sex to students that do not wish for 'pair-bonding' (*Oryx* 252). Further, intimacy is devalued by making private human acts publicly accessible – sexually through varied internet porn sites such as 'HottTotts,' 'Tart of the Day,' or 'Superswallowers' (*Oryx* 107), but also existentially in websites that commodify death, such as 'Shortcircuit.com, brainfrizz.com, and deathrowlive.com [...] they showed electrocutions and lethal injections,' or 'nitee-nite.com' (*Oryx* 100–01), a website glorifying the suicide of people desperate for attention. At some point Snowman ponders how society could become so fixated on the body, ignoring soul and mind in finding pleasure and instant gratification, no abstract cultural forms (literature, art) necessary: 'But the body had its own cultural forms. It had its own art. Executions were its tragedies, pornography was its romance' (*Oryx* 102).

But the inhuman shows even stronger in the commodification of the body as a resource for product testing. The pleeblands, as Crake explains, 'were a giant Petri dish: a lot of guck and contagious plasm got spread around there' (*Oryx* 346), and he himself uses the pleeb's sex clinics and brothels to test his pleasure pill: 'Scales was testing the BlyssPluss for the ReJoov Corp, so they weren't handing it out like candy – it was mostly for the top customers' (*Year* 130).

In the pleeblands, the body can even be reduced to meat for consumption. In times of food scarcity, when 'meat was hard to come by' (*Oryx* 29), the fast-food chain 'SecretBurgers' is not squeamish about procuring their meat: 'no one knew what sort of animal protein was actually in them' (*Year* 33). SecretBurgers recycles street animals and even humans: 'The local pleebmobs [...] ran corpse disposals, harvesting organs for transplant, then running the gutted carcasses through the SecretBurgers grinders' (*Year* 33). And even the rest of the body can be harvested through such an inhuman system, as the 'garboil' dumpsters prove, which can be found anywhere in the pleeblands:

Carbon garboil was made from any sort of carbon garbage — slaughterhouse refuse, old vegetables, restaurant tossout, even plastic bottles. The carbs went into a boiler, and oil and water came out, plus anything metal. Officially you couldn't put in human corpses, but the kids made jokes about that. Oil, water, and shirt buttons. Oil, water, and gold pen nibs. (*Year 76*)

In Bacigalupi's *Windup* stories, a similar system of recycling and composting exists, but (so far) human beings are not processed in these, unlike the genetically created animals and posthumans that can be found in Thailand. Emiko, a genetically engineered posthuman, a so-called 'Windup,' reflects her status as energy source: 'She is a creature forbidden to them. The Thai men would happily mulch her in their methane composting pools. If they met her or an AgriGen calorie man, it is hard to say which they would rather see mulched first' (*Windup* 37). The reference to the calorie man, a similarly illegal invader of Thailand, though entirely human, here indicates the inhuman system, which would see no calorie of energy wasted. The use of genetically altered creatures in energy recycling might feel just as inhuman, but shall be analyzed separately below.

More overtly constraining the human in the system of development in Bacigalupi's fiction is the treatment of refugees as cheap and entirely inhuman tools for labor in the Thai kingdom. After a racially and religiously motivated genocide in the neighboring Malaysia has led tens of thousands of Malaysian Chinese refugees to flee to Thailand, the so-called 'yellow cards' have become a class of subhumans. They live in the ruined skyscrapers of former glory, stacking bodies to the thousands in stairwells, offices, and apartments, or in slums cobbled together from scrap wood and old tarps: 'Certainly it is better than the Expansion tower internments of the yellow cards. A tarp slum is luxury for him' (*Windup* 69). Denied access to official work, they are either forced to steal and cheat ('another refugee forbidden from feeding herself except by wits and clever machinations'; *Windup* 24) or are exploited for simple work – eating enough calories so that they can prove their worth in energy: 'And yet still they try to look vital, try to show that their bony limbs have calories to spare, if only someone will allow them to burn' (*Windup* 134). Yellow card calories wind kink-springs or haul goods, but their bodies are worth nothing, when their capacity to spend the energy stored in them is gone. In 'The Yellow Card Man,' Tranh works unloading potato sacks when an accident shatters his knee and kills Hu, his co-worker. His employer is more upset about him than about the dead man, quickly discharging Tranh and hiring 'a young man, fresh

and grinning': 'The manager looks back at Tranh with pity, then glances at Hu's body and shrugs. It is an easy acquiescence. Hu will demand no reparations' (*Pump Six* 188).

How reductive that systemic view of human bodies as potential sources of energy really is becomes clear in *The Windup Girl* when the yellow card Hock Seng visits the Dung Lord, a shady mobster living in luxury by exploiting the labor of yellow cards. The Dung Lord lives in a skyscraper, which still has an operational elevator, powered by the calories of human bodies: '[The man] is whisked up into darkness. A minute later, ballast men slide into view in the secondary shaft. They squeeze out of the lift and dash for the stairwell in a herd' (*Windup* 135). The human body is reduced to weight and calories – no more than a commodity available in superfluous amounts.

As I have shown, in both Atwood's MaddAddam trilogy and Bacigalupi's Windup stories, all life has become a commodity for hypercapitalist consumption and is employed to further corporate interests. In this, both fictional worlds are extrapolations of Bauman's concept of consumer society within liquid modernity. But neither Atwood nor Bacigalupi arrests their dystopian vision there. In both cases, capitalist ingenuity goes further than simply exploiting existing nature – it rather creates new forms of genetic hybrids, designed for specific purposes.

3.2 Interconnectedness, the Animal Other, and Genetics

The figure of the animal, Cary Wolfe notes, has been part of (Western) cultural history going back at least to ancient Greece and Egypt, functioning as reminder and reflector of 'the constitutive disavowals and self-constructing narratives enacted by that fantasy figure called "the human"' (*Animal Rites* 6). 'The animal' has long been other to the construction of 'the human,' and as Wolfe further argues, the 'transcendence of the "human" requires the sacrifice of the "animal" and the animalistic' (*Animal Rites* 6) – resulting in the institutionalization of speciesism within Enlightenment humanist thought. In a similar vein of argument, Jacques Derrida sees the human as participant in an 'unprecedented transformation' (392) of human–animal relations that began 200 years ago but continues to intensify and accelerate even now. In a continuous process of development (Lyotard's concept seems somewhat appropriate at this point) 'the human' has radically upended the 'traditional forms of treatment of the animal' for sacrifice, food, 'domestication,' or 'exploitation of [...] energy' (Derrida 394) through

scientific progress and technological innovation. Derrida argues that through development, 'we' have transformed the concept of what an animal is:

This has occurred by means of farming and regimentalization at a demographic level unknown in the past, by means of genetic experimentation, the industrialization of what can be called the production for consumption of animal meat, artificial insemination on a massive scale, more and more audacious manipulations of the genome, the reduction of the animal not only to production and overactive reproduction (hormones, genetic crossbreeding, cloning, and so on) of meat for consumption but also of all sorts of other end products, and all of that in the service of a certain being and the so-called human well-being of man. (Derrida 394)

In the extrapolation of this 'transformative process' into the transgenic creation of new hybrid species, both Atwood and Bacigalupi engage in the debate on human exceptionalism and speciesism by on the one hand blurring the distinctive lines of species discourse and on the other hand disclosing a deep interconnectedness of all life on earth. Within the systemic thought of such dystopian hypercapitalist societies, both authors reveal that liberal humanist technoscience sees animals simply as 'parts of human economic constellations and human-centered ecosystems: They are economic resources, commodities and means of production for human use' (Noske 185). Life thus simply becomes a mechanical object to be manipulated and changed according to the needs of superior and exceptional 'man' – with all its horrible consequences for an intrinsic ethical value of life:

A nature represented in mechanistic terms as inferior, passive and mindless, whose only value and meaning is derived from the imposition of human ends, is simply replaceable by anything else which can serve those ends equally well – it can be reduced and regimented [...] As you wipe out one species of fish, it can be replaced with another, in theory without limit. (Plumwood 49)

3.2.1 Animal Engineering for Human Use

Both Atwood's *MaddAddam* trilogy and Bacigalupi's *Windup* stories challenge this mechanistic reduction of life to a replaceable function within the anthropological order (Warkentin 86) by introducing transgenic species into their fictional universes that have surpassed their

genetic programming and proven to be rather adaptive. In both worlds, new species of animals are genetically engineered to answer specific needs within human culture that other animals could not provide for. Some of these species are harmless and ‘function’ according to their specified parameters: In Atwood’s fiction, for example, the Mo’Hair sheep created with long colorful hair to provide humans with artificial hair extensions do not interfere with nature and indeed live harmoniously with their conventional brethren, even though they are not meant to be part of wildlife: ‘The long hair of the Mo’Hairs isn’t in good shape – there are clot-like snarls in it, and twigs and dry leaves. Onscreen, in advertisements, their hair had been shiny [...] But they’re not faring so well without their salon treatments’ (*Year* 238). Atwood actually engages in literary experimentation with these critters, providing the world of her trilogy with a complete “surreal zoo” of transgenic species’ (Bouson 140). Aside from the Mo’Hairs, other rather harmless beings include the rakunk – a splice between skunk and raccoon, created as a pet, ‘a clean animal, with a nice disposition’ (*Oryx* 60); the kanga-lamb – designed as a food source, ‘a new Australian splice that combined the placid character and high-protein yield of the sheep with the kangaroo’s resistance to disease’ (*Oryx* 352); glow-in-the-dark bunnies (just like Eduardo Kac’s ‘Alba’); and butterflies with ‘wings the size of pancakes [...] [in] shocking pink’ (*Oryx* 252).

Similarly, in Bacigalupi’s world, genetically designed beings exist that are created for specific purposes and do not interfere with the ‘natural’ order. For example, engineered ‘megodonts,’ ‘fifteen feet at the shoulder, ten tons of muscle’ (*Windup* 17), are used to provide all necessary power for transportation and production of material goods: ‘The massive creatures barely resembled the elephants that had once provided their template DNA. Generippers had honed them to a perfect balance of musculature and hunger for a single purpose: to inhale calories and do terrible labors without complaint’ (*Pump Six* 102). Further, there are genetically engineered sniffer dogs that signal the presence of forbidden materials (like illegal seeds) via their fur: ‘It snuffled his clothing, bared hungry teeth, snuffled again, then its black ruff iridesced blue and it relaxed and wagged its stubby tail’ (*Pump Six* 99). Interestingly, these creatures are not marked by the narrative, but function as ‘genetic window-dressing,’ in Atwood’s case to satirically signal the possibilities of splicing, in Bacigalupi’s case to illustrate aspects of necessity in his energy-scarce world. Though they are not part of any natural habitat, they are nonetheless harmlessly integrated into both natural and anthropological order – they have an economic purpose, which they fulfill without larger complications to nature or man.

3.2.2 Invasive Species and the Environmental Cost

Some species, though, are more adaptive and surpass the original intent for their genetic programming by far – thus becoming a human-made form of evolutionary intervention, as Bacigalupi argues for his world’s neo-felines: ‘Cheshires were a way to illustrate the unforeseen consequences of an invasive species. Something that initially seems harmless and entertaining turns out to have ecosystem consequences as it tears through the songbird population’ (cited in Vorda 17). In his stories, Bacigalupi’s cheshires function as a reminder that human hubris and curiosity will lead to unforeseen side effects:

Hock Seng has heard that cheshires were supposedly created by a calorie executive – some PurCal or AgriGen man, most likely – for a daughter’s birthday. A party favor for when the little princess turned as old as Lewis Carroll’s Alice. The child guests took their new pets home where they mated with natural felines, and within twenty years, the devil cats were on every continent and *Felis domesticus* was gone from the face of the world, replaced by a genetic string that bred true ninety-eight percent of the time. (*Windup* 26–27)

Just like the cat from Carroll’s *Alice in Wonderland*, the cheshires can blend with their environment, appearing only as shimmers in the shadows, surviving either as fierce predators or as carrion eaters, hard to kill and perfectly adapted to their hostile surroundings: ‘They are clever, thriving in places where they are despised. Almost supernatural in their tenacity. Sometimes it seems that they smell blood before it is even spilled. As if they can peer a little way into the future and know precisely where their next meal will appear’ (*Windup* 27).

The chameleon-like abilities of the cheshires make them better-adapted predators and thus superior to natural evolution: ‘We create a new species in a heartbeat of evolutionary time, and our songbird population disappears almost as quickly’ (*Pump Six* 115). In the fictional world of the *Windup* stories, cheshires function as reminders that genetic engineering allows a purely cultural intervention into nature – both in the sense of their inception stemming from a work of literature and in the sense of their artificial human creation, spliced together by generippers for the sole purpose of supplying a superfluous consumer demand. The hypercapitalist desire, fulfilled without consideration of ecological consequence, leads to more than simply a new species – instead the cheshires become symbols of the fragility of natural hierarchies, in which the human sees itself at the top, at least for the

moment: 'A high-tech homage to Lewis Carroll, a few dirigible and clipper ship rides, and suddenly entire classes of animals are wiped out, unequipped to fight an invisible threat' (*Windup* 114). The cats and their 'ever-present, and unceasing gaze,' as Andrew Hageman argues, are constant reminders of the inability to control natural adaptation: 'It is their gaze rather than their famous dazzling smiles that is deeply unnerving as it shines from the dank darkness of alleyways and garbage piles' (296). In introducing the cheshires, Bacigalupi signals to readers the deep interconnection with nature and the posthuman subjectivity at play – that humans are not separate from *zoe*, but always 'become with' other species, as Haraway argues: 'species of all kinds, living and not, are consequent on a subject- and object-shaping dance of encounters' (*When Species* 17). Culture and nature interact; they shape each other and are never separate. All species are part of this rhizomatic network of connections and cheshires are the fictional prompt of the unforeseeable intricacy of these interactions.

In terms of a mechanized and utilitarian view of nature, this uncontrollability and clear transgression of their anthropological purpose pushes the cheshires into a monstrous ontological state, though – *neither* natural *nor* cultural, the cats remain outside of their clearly hierarchical position and defy the human symbolic order. In the stories, cheshires are consequently symbolically banished from that order; they are rejected as horrific and soulless. Most characters react to them with 'instinctive recoil' and 'gut revulsion' (McKibben, cited in Bouson 153) against anything genetically engineered. Further, cheshires are hunted and declared *felis sacra*, to appropriate Giorgio Agamben's term – killing them 'carries no karmic cost' in Buddhist Thailand, as they are considered unnatural 'empty vessels. No soul fills them' (*Windup* 173–74). Nonetheless, their spiritual status as soulless and thus as exempt from the Buddhist cycle of rebirth cannot hide their uncertain ontological status. The doubts of an agent of the Environment Ministry tasked to kill them make this clear:

'They bleed like any other animal [...] I've killed thousands of them. Thousands. I've killed six men in my life and never regretted any of them, but I've killed thousands of cheshires and have never felt at ease.' He pauses, scratches behind his ear [...] 'I sometimes wonder if my family's cibiscosis was karmic retribution for all those cheshires.'

'It couldn't be. They're not natural.'

Somchai shrugs. 'They breed. They eat. They live. They breathe.' He smiles slightly. 'If you pet them, they will purr.'

Jaidee makes a face of disgust.

'It's true. I have touched them. They are real. As much as you or I.' (*Windup* 174)

In their ontological liminality, the cheshires are truly monstrous creatures: 'they are disturbing hybrids whose externally incoherent bodies resist attempts to include them in any systematic structuration. And so the monster is dangerous, a form suspended between forms that threatens to smash distinctions' (J. Cohen 6). Suspended on the boundary of life and death (as empty, soulless vessels), nature and culture, and there/not-there (due to their shifting fur), the cheshires undermine any hierarchical clarity. They threaten the established order and are a constant reminder that 'the human' finds itself in a similarly precarious position in regard to the posthuman as the ordinary housecat when faced with cheshires. As Hageman notes, this fierce antagonism towards the genetically engineered nature of both cheshires and posthumans unites them in that Emiko, the representative of the posthuman in the novel, feels kinship with the creatures and understands their transgressive, even revolutionary power: 'They are too much improved for this world, I think' (*Windup* 113; see Hageman 296).

The same superiority, the impossibility of fitting into any natural niche, is true for quite a few examples of Atwood's transgenic creations. The inhabitants of this 'brave new biosphere' 'represent emergence and flux in the relationship between humans and other species' (Rozelle 70). The best example of this flux might be found in the change that overcomes the relationship between humans and dogs, which Haraway calls the 'fleshly material-semiotic presences in the body of technoscience [...] Partners in the crime of human evolution, they are in the garden from the get-go' (*Companion Species* 5). In *Oryx and Crake*, this most domesticated of all companion species is turned into a weapon to be wielded – called 'BioDefences': 'They aren't dogs, they just look like dogs. They're wolvogs – they are bred to deceive. Reach out to pat them, they'll take your hand off' (249–50). Created to manipulate human emotion and to use that evolutionary link to the companion species, the wolvogs represent the ultimate perversion of that 'obligatory, constitutive, historical, protean relationship' (Haraway, *Companion Species* 12) that exists between the two species. It reduces the complexity of the species' interrelation, which encompassed the full array of positive and negative – 'waste, cruelty, indifference, ignorance and loss, as well as [...] joy, invention, labor, intelligence and play' (Haraway, *Companion Species* 12) – by producing the animal as a genetic commodity, 'commission work' (*Oryx* 250) for the security company, nature fully separated from

culture and the animal as object of specific use. Already in its genetic design, this species incorporates the impossibility of fitting into a natural niche, while at the same time threatening its anthropological purpose. As guard dogs, the wolvogs are nearly impossible to handle – ‘no way of making pals with them’ (*Oryx* 250) – but after they escape they become an even larger threat to the human population. Indeed, after the plague has wiped out most human life, non-human life begins to thrive in the novels, as Lee Rozelle rightly remarks: Instead of an ecological wasteland, the world surrounding Snowman is full of life – it reveals ‘a resilience and increased adaptive capacity of plant and animals species’ (65), including the transgenic species.

The problem – at least for the remaining humans – is that the new transgenic species challenge any remaining delusions of a mastery over nature by adapting to life beyond their preconceived functions. Where geneticists (very reminiscent of the biopunk manifesto) design new life forms ‘as an after-hours hobby’ by simply ‘fooling around’ because ‘create-an-animal was so much fun [...] it made you feel like God’ (*Oryx* 59), it seems only fitting that many of the genetically engineered creatures do not remain fixed in natural niches and threaten all categorization: ‘the snat, an unfortunate blend of snake and rat: they had to get rid of those’ (*Oryx* 59–60), or the bobkitten, created to hunt glow-in-the-dark bunnies. In their transgression of genetic and anthropological purpose, bobkittens thus strongly repeat the matrix of Bacigalupi’s cheshires:

Those things were introduced as a control, once the big green rabbits had become such a prolific and resistant pest. Smaller than bobcats, less aggressive – that was the official story about the bobkittens. They were supposed to eliminate feral cats, thus improving the almost non-existent songbird population. The bobkittens wouldn’t bother much about birds, as they would lack the lightness and agility necessary to catch them. Thus went the theory. All of which came true, except that the bobkittens soon got out of control in their turn. Small dogs went missing from backyards, babies from prams; short joggers were mauled. (*Oryx* 199–200)

Just as with the cheshires, the genetically created species does not adhere to genetic program, instead expanding its natural niche and proving threatening to the human in both the symbolic and the ontological order by becoming monstrous.

3.2.3 Human-Becoming-Animal or Animal-Becoming-Human

The one creature in Atwood's trilogy that 'transgress[es] natural barriers and challenge[s] the solid line between humans and nonhumans' (Galbreath 2) most aggressively is the pigoon, created as medical organ donors for humans:

The goal of the pigoon project was to grow an assortment of foolproof human-tissue organs in a transgenic knockout pig host – organs that would transplant smoothly and avoid rejection, but would also be able to fend off attacks by opportunistic microbes and viruses, of which there were more strains every year. A rapid-maturity gene was spliced in so the pigoon kidneys and livers and hearts would be ready sooner, and now they were perfecting a pigoon that could grow five or six kidneys at a time. Such a host animal could be reaped of its extra kidneys; then, rather than being destroyed, it could keep on living and grow more organs. (*Oryx* 27–28)

What makes the pigoons categorically so challenging and transgressive is their infusion with human DNA – first they are 'customized, using cells from individual human donors' (*Oryx* 28) so that customers can have their own body parts regrown, then later in the novel, the pigoons are spliced with human brain tissue: 'It's the neuro-regeneration project. We now have genuine human neocortex tissue growing in a pigoon. Finally, after all those duds!' (*Oryx* 66). This, of course, is the central argument for all blurring of categorial order, as Warkentin rightly notes: 'The purpose of this process is to make a pig's body less pig-like so that it can become more compatible with human bodies, and in essence, more human (at least on a physiological level)' (90).

As a result, the pigoons completely undermine any conception of human exceptionalism and frightfully cast into doubt the neat boundaries of nature/culture and human/animal that liberal humanism builds subjectivity upon. On the one hand, pigoons clearly destabilize exceptionalist views by becoming in part human. When human organs can be replaced by parts grown in other animal species, this process reduces the human itself to be a part of a technoscientific, mechanized view of nature. As Chung-Hao Ku argues, Atwood's 'bioengineered creatures [...] eventually interrogate their human creators' physical constitution and hierarchical supremacy [...] [they] do not simply negate animality [...] their partial resemblance to human beings actually challenges the human form as well' (112). Further, both pigoon and

human are reduced from life forms to mere values in a utilitarian system of hypercapitalist consumption, 'reducing both non-human animals and humans to controllable commodities' (Dunlap 3).

On the other hand, pigeons once more exemplify the 'unscrupulous use of zoe' (Botta 244), which capitalism practices without regard for animal subjectivity or the interconnection of natural ecosystems. Pigeons are 'non-human slaves and voiceless properties in the Compound-plantations, [...] judged by their utility to humanity' (Galbreath 3). Their use is degraded to medical organ farm or to food source – which, in connection with the destabilization of human/animal boundaries, becomes an even bigger challenge to existing hierarchies. As Jovian Parry notes, eating animal flesh is in itself a destabilizing act in the human/animal divide:

Although the act of eating meat can be seen as a powerful assertion of human supremacy and dominance over nonhuman animals and the natural world [...] thus serving to maintain this distinction, it simultaneously blurs it. The act of eating animal flesh has often been thought to transmit those desirable qualities which humans have filed under 'animal,' such as strength and virility (244–45)

When the pigeons are first introduced and infused with human DNA (not yet the neocortex tissue), the categorial insecurity already shows through, exemplified in Jimmy's reaction to the rich assortment of pork products in the cafeteria:

'Pigeon pie again,' they would say. 'Pigeon pancakes, pigeon popcorn. Come on, Jimmy, eat up!' This would upset Jimmy; he was confused about who should be allowed to eat what. He didn't want to eat a pigeon, because he thought of the pigeons as creatures much like himself. Neither he nor they had a lot of say in what was going on. (*Oryx* 29)

At the heart of this insecurity lies the cultural acceptance of anthropophagy. If human and pigeon life are gradually becoming the same – as Ku states, 'crossing the frontier between human and animal, pigeons are now the double – the demoting yet curing, fearful yet adorable other – of human beings' (113) – then eating human flesh becomes acceptable. The practices of meat consumption regarding SecretBurgers support this argument. And in *MaddAddam*, confronted with the posthuman other of the pigeons, humanity (what remains of it) has no trouble at all in 'turn[ing] them into bacon': 'Frankenbacon, considering they're splices. I still feel kind

of weird about eating them. They've got human neocortex tissue' (*Madd* 19). Even though the MaddAddam group not only knows that pigeons are posthuman (in the sense of their technoscientific creation and incorporation of human DNA) but features many members recruited from an environmentalist group that promoted a *zoe*-centric approach to life, the surviving humans have no qualms about slaughtering the pigeons: "Dig in, sweetie. Pig in three forms: bacon, ham, and chops." It hadn't taken them long to backslide on the Gardener Vegivows, thinks Toby' (*Madd* 34). Parry argues that inherent in this urge to eat meat is the humanist assumption of an exceptional and superior position over nature, as well as the ideology that eating meat (exerting power over nature) is 'an inescapable part of true human nature' (252).

Ironically, it is exactly this assumption of 'human nature' as rightfully on top of the food chain that is being challenged by the pigeons. From novel to novel, Atwood presents the pigeons progressively more as posthuman, disrupting the superior position of the human not only by 'dehumanizing' it, but also by manifesting human-like traits in the pigeons – thus depicting them as 'men in porcine masks' (Ku 114).

In *Oryx and Crake*, the pigeons are first shown to grow tusks and become wild, 'reverting to type now they'd gone feral, a fast-forward process considering their rapid-maturity genes' (45). They turn into aggressive predators, at some point starting to hunt Snowman for food – reversing the food chain and making the human edible meat. The human neocortex makes them more predatory, and Snowman experiences first-hand their tactical thinking: 'Those beasts are clever enough to fake a retreat, then lurk around the next corner. They'd bowl him over, trample him, then rip him open, munch up the organs first [...] A brainy and omnivorous animal, the pigeon. Some of them may even have human neocortex tissue growing in their crafty, wicked heads' (*Oryx* 284). And indeed, the pigeons recognize weapons, retreat from perceived threats, communicate with each other, and plan their attack by cutting Snowman off from his escape route and trapping him in a gatehouse:

Now one of them spots him through the window. More grunting: now they're all looking up at him [...] Team players, the pigeons. There's a lot of muscle out there. If they can't push through the door they'll wait him out. They'll take it in relays, some grazing outside, others watching. (*Oryx* 322–23)

The pigeons, as Sharon Wilson notes, 'get revenge on human beings who lack reverence for other beings or the natural world. Like the pigs

in *Animal Farm*, the pigeons in this cautionary tale show intelligence and teamwork: on Snowman's quest to the destroyed compound, they maliciously watch and attack' (113).

Wilson's comment, especially the intertextual connection, suggests human qualities (revenge, politics), thus an anthropomorphizing of the pigeons, which at least for *Oryx and Crake* could still be relativized in that it is Snowman's feverish perspective (focalized in the narration) that ascribes the human traits, perhaps still retained from his childhood experiences and reemerging when he is threatened by the categorically transgressive beings: 'The adults were slightly frightening [...] [t]hey glanced up at him as if they saw him, really saw him, and might have plans for him later' (*Oryx* 32). In *The Year of the Flood*, though, Atwood adds Toby's perception of the human qualities of the pigeons. After she notices three 'huge pigs' by her vegetable garden that are not deterred by the fence but begin to dig ('They'll tunnel under'; 18–19), she kills one of them with her rifle – driving the rest off. The pigs return one night and get into the garden: 'They've dug under the fence, then gone on a rampage. Surely it was less like a feeding frenzy than a deliberate act of revenge. The earth is furrowed and trampled: anything they haven't eaten they've bulldozed' (*Year* 319–20). Once again, the narrative is internally focalized on a human threatened by extinction, blurring the line between objective reality and Toby's perception when she notices the group looking in her direction: 'Beady eyes, one per pig: they're looking at her sideways. They've been watching for her: it's as if they want to witness her dismay. Moreover, they're out of range: if she shoots at them she'll waste the bullets. She wouldn't put it past them to have figured that out' (320). So, when Ashley Dawson argues that the pigeons 'engage in lamentable human behavior such as the revenge-driven destruction of Toby's vegetable garden' (68), an anthropomorphizing view of the splices seems to manifest itself in the novel. Or it may just be the human(ist) failure to make sense of a non-human animal culture.

Indeed, Atwood makes it hard not to establish a human baseline when evaluating the pigeons' actions when she describes their treatment of the boar that Toby shot in the beginning of the novel: 'There are fronds scattered about, on top of the boar's carcass and beside it [...] Also flowers. Are those rose petals, from the roses by the driveway? She'd heard of something like this [...] about elephants [...] But pigs? Usually they'd just eat a dead pig, the same way they'd eat anything else' (*Year* 328). Toby here functions as reflector of the humanist, anthropocentric view that 'excludes animal forms of society, culture and language by definition' (Noske 187). Confronted with proof against such reductionist views of culture, Toby begins to voice concern, though:

'Could the pigs have been having a funeral? Could they be bringing memorial bouquets? She finds this idea truly frightening. But why not? [...] We believe the Animals have Souls. Why then would they not have funerals?' (*Year* 328). In allowing doubt that the pigeons have some sort of culture, Atwood again undermines the clear-cut demarcation of the animal/human boundary and questions the belief in human exceptionalism. In fact, the pigeons seem to have evolved beyond their genetic program: 'the practice of mixing human and pig genetic material for numerous generations has endowed pigeons with a certain amount of human similarity' (Warkentin 93). In this, the novels clearly show that 'organisms can and will respond to biological and ecological changes in unpredictable ways' (Warkentin 94).

Moreover, in *MaddAddam*, the final novel of the trilogy, Atwood goes so far as to endow the pigeons not simply with the agency to find a natural niche, attack the humans threatening their niche, and create an animal culture, but also with enough intellectual reasoning power to become fully subjective posthuman creatures. The novel's concluding parts reveal a tribal community of pigeons, capable of interspecies communication, politics, law, and diplomacy.

Atwood even introduces compassion for the pigeons and an understanding of their culture through the other posthuman creatures in her story world. The Crakers can 'speak' with the pigeons via their 'Craker voice, not human' (*Madd* 223) – they function as 'translators' between the human and the animal. At first Toby and the other MaddAddamites are skeptical of any communication, dismissing the experience as the result of drugs and hallucinations, but soon the pigeon community appears to seek help from the human group: 'It's weird. They're marching. It's like a pig parade' (*Madd* 267). More than 50 adult pigs plus their young have gathered, offering a temporary 'ceasefire' ('They have said they will not harm you today'; *Madd* 268), carrying a dead piglet ('A tiny one, with its throat cut. Its front trotters are tied together with rope'; *Madd* 269) and presenting the humans with a proposition for interspecies cooperation:

They are asking for help. They want to stop those ones. Those ones who are killing their pig babies [...] They want you to help them with the sticks you have. They know how you kill, by making holes. And then blood comes out. They want you to make such holes in the three bad men. With blood [...] And in return [...] they will never again try to eat your garden. Or any of you [...] Even if you are dead, they will not eat you. And they ask that you must no longer make holes in them, with blood, and cook them in a smelly

bone soup, or hang them in the smoke, or fry them and then eat them. Not any more. (*Madd* 269–70)

A deal between pigeons and humans is struck, the posthuman Crakers facilitating an understanding between cultures ('We're too stupid, we don't understand their languages. So there has to be a translator'; *Madd* 270). But this translator obviously problematizes the depiction of a pigeon culture – there is a double distancing at work here, as Blackbeard (the Craker boy) translates pigeon snorts and thinking into human language, without himself fully grasping the human concepts. It is thus unclear in this passage if the pigeons use concepts such as 'bad men' or 'smelly bone' or if these are Blackbeard's constructions. Is Blackbeard responsible for the assortment of terms for food preparations (cooking, smoking, frying) or are the pigeons? Maybe these concepts are even the results of another distancing, that of human recording of posthuman translation of animal language. The novel itself presents as an epistolary-style recording, written by Toby, thus implying another agency at work.

Consequently, the anthropocentric view of that animal culture remains, in the writing but also in the character's reflection. When the pigeons leave their dead piglet for the humans to consume, Toby judges the act by human ethical standards: 'Curious funeral rites, thinks Toby. You strew the beloved with flowers, you mourn, and then you eat the corpse. No-holds barred recycling. Even Adam and the Gardeners never went that far' (*Madd* 271). Here Atwood dwells on the funeral rite as iconic sign for the existence of culture, returning to the ritual of flowers and composting several times. When two humans need to be buried later, the pigeons carry the dead 'as a sign of friendship and interspecies co-operation,' and once more, cultural understanding has to be facilitated by translation:

Following a short discussion, the Pigeons understood that we did not wish to eat Adam and Jimmy, nor would we wish the Pigeons to do that. And they concurred. Their rules in such matters appear complex: dead farrow are eaten by pregnant mothers to provide more protein for growing infants, but adults, and especially adults of note, are contributed to the general ecosystem. All other species are, however, up for grabs. (*Madd* 373)

As before, the anthropocentric position lingers and the reader remains uncertain who used the term 'friendship' and what it designates for the pigeons. Are the pigeons really reasoning for an economy of protein?

Do they have an understanding of the term 'ecosystem' or 'species'? Readers are unable to breach the conceptual distance, which exists in these passages because of translation and narration.

In the battle between the MaddAddam group (recruited from both humans and pigeons) and the Painballers, Atwood portrays the pigeons as fine military tacticians, standing guard and clearing away possible cover (340), scouting possible routes and dangers, using messengers and running in formation ('the main van of older and heavier Pigeons: the tank battalion'; *Madd* 346). Later, they take part in a tribunal, voting in unison on the death of the Painballers (*Madd* 370). Interestingly, the Crakers do not understand the concepts of 'voting' and holding a 'trial'; nonetheless they function as cultural translators. Aside from the military cooperation, Atwood also includes a scene of communal bliss, showing pigeon families enjoying a swimming pool: 'The younger ones enjoy splashing and squealing; the older sows and boars take brief dips, then watch over their piglets and shoats indulgently, lounging at the poolside. Toby wonders if pigs get sunburn' (*Madd* 284). And later, when all have agreed to uphold their contract for the future, two pigeon adolescents are found in the garden, technically breaking the agreement:

A conference was called. The Pigeons sent a delegation of three adults, who seemed both embarrassed and cross, as adults put to shame by their young usually are. Blackbeard stood as interpreter. It would not happen again, said the Pigeons. The young offenders had been threatened with a sudden transition to a state of bacon and soup bones, which seems to have made the desired impression. (*Madd* 378)

In these scenes, as one reviewer remarks, Atwood seems to offer a 'walking, snorting tribute to *Animal Farm*' (Churchwell 43), fitting well with the anthropomorphic and clearly satirical tone of the scenes. Unfortunately, the same tone and intertextual reference also undermines any posthumanist reading. The depiction of the pigeons as 'men in porcine masks' goes beyond the indeterminate reading of posthuman-human translation present in the scenes discussed earlier. Pigeons as military masterminds, as summer guests at the poolside, or in the roles of disobedient, rebellious youth and shamed, disapproving parent – all of these are blatantly anthropocentric, not due to narrative unreliability or translational distance.

Bacigalupi's depiction of the transgressive and categorically ambivalent cheshires shows a subtle questioning of the position of the human in face of the posthuman, thus allowing for a posthumanist reading that

challenges notions of humanist subjectivity and engages its readers in critical dystopian thinking. It reveals a *zoe*-centric worldview, in which the human is interconnected and always *becoming with*, as Haraway put it, other species and the environment. Atwood's trilogy, on the other hand, gestures towards a 'rejection of the anthropomorphic viewpoint [...] [which] struggles to re-position humanity as one species among many in a web of natural connections' (Hatch 181) but in the end returns to the safe harbor of humanist thinking. Pigeon society can be accepted because of its human construction – even when direct communication fails, the liberal humanist concepts of freedom, equality, and brotherhood somehow seem to apply. Brothers in arms come together over their similarities rather than having to negotiate the '*differé*nd,' the 'absent phrase' of the 'broken discourse between humans and animal others' (Galbreath 3) that led to suffering and the mechanized view of nature (how easy it was to forget Gardener teachings and utilize animals). Atwood's trilogy does open negotiations of human–animal relations; it proposes the possibility of non-anthropocentric culture and accepts an interconnection of humans with their environment – as such the books allow for the posthuman view to be expressed. But the humanist view is similarly present and grows stronger towards the third installment, culminating in the positive outlook towards the future that is owed mainly to its humanist values. Utopia lies in the posthuman – simply because it is seen to be human in essence.

3.3 The Better Human: Posthumanity and the Replacement of 'Us'

As we have seen, the depiction of animal–human hybridity in both Bacigalupi and Atwood has already undermined clear-cut distinctions of categorial separateness and human exceptionalism. Furthermore, both writers understand the potential of genetic manipulation by contemporary technoscience as deeply troubling and threatening to human subjectivity and the position of the human within the interconnected web that is *zoe*. To illustrate such a threatened position, both Atwood and Bacigalupi thus enact the posthuman not simply categorically by undermining human conceptions and values but by introducing a posthuman, genetically engineered species as a tangible danger to human superiority.

In Atwood's trilogy, the Children of Crake, or Crakers, are created by a genius geneticist as an improvement on the human species. Financed by the corporation as 'floor models' (*Oryx* 363) for the creation of made-to-order children, the Crakers are designed by Crake to be 'the future

human race,' 'the art of the possible' (*Oryx* 366–67), with customizable features to be chosen out of a catalogue. Physical beauty, rapid growth, and resistance to diseases and environmental hazards are part of the package, as is the removal of any 'negative' features of the human (according to Crake) such as hierarchical, symbolic, or competitive thinking. The Crakers are docile, vegetarian, friendly. They have no concept of time, death, God, or art. They can resist UV radiation, repel insects with a citrus smell, fend off predatory animals via marking their territory, and come into heat in regular intervals in order to consensually mate in groups, favoring communal social interaction and not pair-bonding (*Oryx* 363ff.). As Gerry Canavan argues, the Crakers 'should be understood as a hyperbolic version of the fantasy that we might turn back the clock and begin history anew, this time avoiding the mistake of so-called "civilization"' (152).

In Bacigalupi's world, on the other hand, the posthuman is created solely for utilitarian purposes, a species of servants, soldiers, and workers. His New People are genetically altered to serve specific functions and to address the demographic changes in Japan, where too few young need to care for too many old. New People are endowed with superhuman characteristics, such as perfect appearance – symbolized in their almost flawless skin without pores –, augmented senses (*Windup* 35), extreme speed (*Windup* 300), and near-perfect hand-eye coordination. In order to control such superhuman beings, New People have been created with fail-safe mechanisms such as genetically forced obedience ('canine DNA'; *Windup* 184), sterility, and (except for the military models) the eponymous characteristic of 'stylized and deliberate movements,' so reminiscent of nineteenth-century automata that they are called 'windup' (*Windup* 36).

3.3.1 Hierarchies of Power: Laughing at the Posthuman

Bacigalupi uses this feature of 'artificial' movement to negotiate the necessity of power hierarchies between the species, combining in this one element a marker that excludes and one that demotes. Her movements reveal Emiko as other and as inferior: 'All they see are stutter-stop motions. A joke. An alien toy. A windup' (*Windup* 36). Designed as a courtesan, a geisha of ancient Japan, Emiko is made with a specific purpose in mind that already historically links her to inferiority and servitude. In that limited cultural context her motions seem almost 'natural': 'The girl is perfect, precise as clockwork, and contextualized by the tea ceremony, all her motions take on a ritual grace' (*Windup* 297). Her 'natural' position is that of servant, and thus obedience is both genetically engineered

and culturally instilled by training within a crèche (*Windup* 153–54). Within that original cultural niche, Emiko's position would already be conflicted, as she merely fulfills a specific purpose, nonetheless gaining a certain amount of respect for performing well: 'She is loyal, thoughtful, and skilled. A necessary tool. She is as necessary as a hoe for a farmer or a sword for a samurai' (*Windup* 298). Interesting to note is the contradiction inherent in her creation by modern technoscience (genetics) and the comparison with outdated technology that references back to ancient Japanese traditions, such as a hoe or a sword. But even though this utilitarian view of New People as replaceable technology dominates, it is relativized by a belief system that supports the hierarchical position as 'almost human' and promises the reward of progression: 'Their duty was to serve, their honor was to serve, and their reward would come in the next life, when they became fully human. Service would yield the greatest rewards' (*Windup* 153–54).

Outside this specific niche, Emiko reveals herself as alien other in several different ways: First, she is a Japanese among the Thai, and for the social and cultural differences alone ostracized ('the dirty Japanese get what is coming to them'; *Windup* 38). Second, due to her privileged position in Japanese society, as a rich man's servant, Emiko is 'manufactured to have a porcelain skin and reduced pores, but it means she is subject to overheating' (*Windup* 300) outside of air-conditioned rooms. In the swelter of Contraction-era Thailand, she is continuously dependent on others to provide her with cost- and calorie-intensive cooling (ice, water, fans), again emphasizing both her inferior position and categorical otherness. Third, when she moves with control, others see her motion as artificial and 'stutter-stop flashbulb strange' (*Windup* 35), but when Emiko is forced against her will to move in a sexual rape act on stage, her motion becomes the object of a power play, ridiculing her, and revealing her for what she is, inferior, inhuman, and helpless:

[E]veryone is laughing at how Emiko's body twitches and jerks now that she is in a panic, coughing the liquid from her lungs. She is nothing but a silly marionette creature now, all stutter-stop motion – herky-jerky *heechy-keechy* – with no trace of the stylized grace that her mistress Mizumi-sensei trained into her when she was a girl in the crèche. There is no elegance or care to her movements now; the telltales of her DNA are violently present for all to see and mock. (*Windup* 37)

The tone of ridicule and degradation is important in this scene. Emiko's otherness is displayed in front of an audience as a release

valve – providing distance from the threats that her ontological status represents, but also from the socio-economic reality of inferiority of those that cannot afford the luxury of such items as genetically engineered labor. But at the same time, the value of New People as a species is diminished; they are relegated to their position as inferior within the ‘natural’ order – a position that Emiko accepts by implicit agreement with the ridicule. The passage is internally focalized through Emiko and thus reveals her own silent complicity, as she defines herself solely through the obvious distinguishing mark: ‘Her limbs twitch and flail, giving everyone a chance to see her true nature’ (*Windup* 37).

Most characters in the book treat Emiko as inferior, using her movement as a telltale marker of otherness. Emiko is confronted with racist remarks and actions – her movement is ridiculed and singled out as signature of an unnatural creation. Emiko’s own reaction seems to confirm the obvious success of this social strategy as she demurely accepts an inferior position. For the reader, the indignity of the scene and the repeated rape and torture that Emiko has to endure throughout the novel have a different effect though. The allegorical nature of Emiko’s struggle becomes obvious and forces readers to question their own positions of privilege and strategies of accepting or rejecting otherness. The characters in the novel laugh at otherness to hide their anxiety about the threat it represents; the reader on the other hand is forced into compassion. The abuse and violence of the scenes are so drastic and overtly described that they reveal the perpetrators as inhuman. As Bacigalupi himself argues, ‘it seemed like the reader needed to be in the room during her abuse, so that her later actions would seem acceptable’ (cited in Vorda 18). Emiko’s mistreatment is so hard to bear that readers are driven to empathize with her – realizing posthuman subjectivity and a fundamental connection despite her perceived otherness, not because she is human, but as Derrida argued (for animals, but true here for the posthuman nonetheless), because she suffers. To pose the question, ‘Can they suffer?’ he says, means to be implicitly asking about an inability to act and realizing the powerlessness of that position:

Being able to suffer is no longer a power, it is a possibility without power, a possibility of the impossible. Mortality resides there, as 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, to the possibility of sharing the possibility of this nonpower, the possibility of this impossibility, the anguish of this vulnerability and the vulnerability of this anguish. (Derrida 396)

The reader cannot 'deny the suffering, fear or panic, the terror or fright' (Derrida 396) that is present in Emiko, and 'the *undeniable* of this response' (Derrida 397) then changes the argument of humanist exceptionalism. Being witness to this creature's suffering makes it impossible to ignore the existence of a common nature – all species can suffer and die. Emiko's movements are ridiculous, and she is laughed at consistently throughout the novel. By focalizing the narration on Emiko, though, the reader becomes painfully aware of her subjectivity and the suffering the laughter causes, and is thus narratively forced into a communion with the posthuman.

Margaret Atwood, in her MaddAddam trilogy, also uses specific behavioral patterns and physical differences to mark the Crakers as posthuman, and, similarly, these markers generate ridicule among the other characters. In reducing genetics to a toolkit of useful abilities, Crake designed the Crakers with an eye for function, not for aesthetics and human customs, and thus their natural behavior elicits ridicule among the remaining humans. In concentrating on the physical differences from the human as standard, Stephen Dunning points out, it 'is hard to take these purring, multi-colored, blue-bottomed, blue-penisised, excrement-eating, perimeter-pissing, citrous-scented [sic] creatures seriously' (95). Accordingly, characters satirically comment on the genetic features: They describe their purring as 'making a noise like a kitchen mixer' (*Madd* 12) and ask, 'are they like batteries that have to be recharged?' (*Madd* 99). Their insect-repellent smell is described as 'citrus air freshener' (*Madd* 90) and their general non-aggressiveness makes them 'walking potatoes' and 'vegetables' (*Madd* 19).

One aspect of their nature that is more strongly singled out for ridicule is their digestion, which Crake copied from a rabbit and its ability to recycle its own excrement. Snowman is disgusted by the concept, even though it is clearly superior to his starving from malnutrition: 'He finds the caecotrophs revolting [...] However you look at it, he'd said, what it boiled down to was eating your own shit' (*Oryx* 194). Crake argues it is necessary when eating raw plants, and that any 'objections to the process were purely aesthetic' (*Oryx* 194). But not only is Snowman disgusted, he also jokes about the feature when he reduces the Crakers to bobkitten prey because of this one aspect of their genetic make-up: 'they can smell the rabbit aroma of the caecotrophs' (*Oryx* 194).

But even more than the 'edible poo' (*Madd* 92), as Toby ridicules the essentially designed-for-survival ability, the Crakers reproductive mechanisms are constantly made fun of. Craker women are sexually receptive 'once every three years' (*Oryx* 200), thus making the mating cycle rather scarce. For their mating, Crake has combined baboon

and octopus DNA, so that the woman in heat signals her status via 'the bright-blue colour of her buttocks and abdomen' (*Oryx* 201) and a pheromone release that, in turn, makes the males react similarly. Snowman's description of the mating ritual already expresses his malice:

Courtship begins at the first whiff, the first faint blush of azure, with the males presenting flowers to the females [...] Their penises turn bright blue to match the blue abdomens of the females, and they do a sort of blue-dick dance number, erect members waving to and fro in unison, in time to the foot movements and the singing: a feature suggested to Crake by the sexual semaphoring of crabs. From amongst the floral tributes the female chooses four flowers, and the sexual ardour of the unsuccessful candidates dissipates immediately, with no hard feelings left. (*Oryx* 201)

The ironic distance present in this description is mainly evoked through the doubled voice of free indirect discourse: It is clearly the heterodiegetic narration presenting the scene, but Snowman's laconic tonality and diction that dominates it, without any markers of him ever thinking or speaking, though. Nonetheless, it becomes clear that Snowman ridicules the mating ritual and thus marks the Crakers as other.

Similarly, the feature is commented upon by almost all the other human characters in the trilogy. When Toby first sees the Crakers, she thinks they are a hallucination and shakes the image off by reminding herself not to go crazy – 'no naked blue-tinged singers' (*Year* 165). Ren, even though she has been warned about them, similarly jokes ('nudist camp'; *Year* 408) before feeling threatened by their ritualistic signaling. She can only help herself stay calm by ridiculing the Crakers, denying them equal humanity, and placing them as inferior: 'At this, the men all smile [...] and their penises point at me and wag from side to side like the tails of happy dogs. Four? All at once? I don't want Toby to shoot any of these men [...] but also I don't want those bright-blue penises anywhere near me' (*Year* 410). Ren's contradictory reaction is dominated by fascination, but ultimately without understanding, in that she calls them 'men' while at the same time comparing them to 'happy dogs' and fearing the need to have Toby shoot them if they don't conform to her standard of behavior.

But more importantly than the human characters' relentless ridicule – as the abovementioned ironic distancing shows – Atwood herself seems to poke fun at the Crakers. Readers identify with the narrative position, and thus with the main characters and their evaluation of the situation and of the Crakers. Critics have consequently called the

Crakers 'a kind of bizarre spectacle and extended authorial joke' (Bouson 141), 'a living satire of the errors of the utilitarian imagination' (Brydon 453), 'a sideways, funhouse-mirror, only-kidding glimpse' at humanity (Canavan 152), and finally 'outwardly human yet emotionally and mentally retarded' (Pordzik 153). Their overtly prejudiced description, the naïveté of their actions, and the repeatedly mentioned mating ritual – all point toward Atwood's own stance on the position of the Crakers as non-human: 'I'd call them clever primates' (cited in Case and McDonald 43). There does seem to be a certain compassion for the Crakers, described either as harmless animals and thus inferior or as 'Crake's children, and like children tremendously vulnerable' (Ingersoll 168): 'The Children of Crake, for all their innocence and peaceful ways, are fundamentally nonhuman – are fundamentally *subhuman*' (Parry 252). Nonetheless, they remain other.

In contrast to Bacigalupi's New People, whose suffering elicited compassion and an active engagement with the posthuman condition, the Crakers function as a satirical commentary and a comic relief for readers that feel threatened not by the creatures but by the potential of their creation. Being replaced by these creatures would mean losing everything that makes us human; it is, in Francis Fukuyama's words, 'a devil's bargain [...] [s]orry, but your soul just died' (8–9) – a sentiment many critics seem to read in Atwood's treatment of the Crakers. Their features and behaviors are ridiculous to us – mainly because we cannot identify with them. In connection to the human, edible poo and blue-tinged penises are bizarre and ridiculous; they need to be relegated to an inferior position so as not to threaten our ontology. But as Rozelle notes, 'when we observe these traits in other species, they are understood as appropriate to specific adaptive functions' and thus might best be evaluated 'without undue anthropomorphism' (68).

It is interesting to note, then, that Atwood does not relativize any readerly perceptions of her posthumans by allowing identification with them. In *Oryx and Crake* as well as *The Year of the Flood*, the Crakers remain passive reflections of the failure of human civilization and voiceless allegories for the potential of genetic engineering. They are present without ever really featuring as characters – rather they seem to be living props, similar to the Painballers or the Mo'Hairs, pigeons, and bobkittens, just another species of 'animal' that populates the new world, either as threat or as resource. Only with *MaddAddam* does Atwood grant the Crakers their own voice, although it is deeply tinged with humanist conceptions of history, religion, and culture, as we shall see below.

What is remarkable, in regard to the depiction of Craker culture in the last part of the trilogy, is that Atwood still does not allow

compassion to arise – the satirical narrative voice remains and positions the Crakers continuously as inhuman in Lyotard's second sense of the term: Humanity is thus not born 'human,' not 'led by nature, not programmed' (Lyotard 3), but needs to be educated to become human. Humans need to 'acquire a "second" nature which [...] makes them fit for life' (Lyotard 3). In this conception, which of course is deeply humanist and reduces the human to a well-cultured, privileged position, children are thus inhuman in the sense that they lack this second nature, this education in cultural norms – 'not able to calculate its advantages, not sensitive to common reason' (Lyotard 3) – and adults retain this 'obscure savageness of childhood' (Lyotard 4) to a degree, prompting them to continuously fight against it – marking humanity, in the humanist notion of the term, as transcendence of that savage state, the inhuman which is always already present in the human.

In *MaddAddam*, the Crakers function as reminders of the inhuman in that sense, reflecting for the human characters their inner savageness and the need to 'educate' against this. A good example can be found in Toby, who takes over from Snowman the charge of caring for the Children of Crake and providing them with stories every evening, depicted as just that – a bedtime story for children: entrenched rituals need to be observed, deviation from already heard stories needs to be justified, constant questions about unknown concepts interrupt the storytelling, explanations only provoke more questions and more explanations in an endless cycle, and above all, the Crakers constantly burst into song. The Crakers show the inhuman savageness especially in their lack of understanding of the language, but also in their swiftly changing interests and complete lack of social norms. Toby is irritated, but reminds herself of the need for patience, educating them even about her frustration: 'I am doing this thing with my hands on my forehead because I have a headache. A headache is when there is a pain in your head. Thank you. I am sure purring would help. But it would also help if you would stop asking so many questions' (*Madd* 85). While the Crakers and the humans live together, Toby's narrative becomes suffused with an interior commentary – an aside of how to explain to the Crakers what she is doing at the moment, or better put: a string of answers to possible Craker questions which again lead to more questions. The Crakers are a frustrating symbol of the cultural savagery of children, of their incompleteness as human beings.

Thus, when Toby teaches the young Craker Blackbeard how to write, it is his voice that finally breaches the gap between the cultures – not by giving insight into the posthuman, but rather by having acquired the 'second nature' of human values and concepts. Ironically,

when Blackbeard becomes the storyteller, he is just as irritated by the interruptions and the crystalline singing (that drives Toby to have headaches): 'Please don't sing. [...] Please don't sing yet. [...] An *umbrella* is a thing from the chaos. They used it for keeping the rain off their bodies. I don't know why they did that' (*Madd* 385–86). Blackbeard has become sufficiently 'cultured' by copying Toby in her duties, completing the ritual and conforming to expectation, but he is lacking true understanding of human culture. Similarly, the novel never allows the reader to understand the posthuman culture by showing an acceptance of the inhuman as it is. Even in Blackbeard's voice, the Crakers remain aloof, inhuman, and childish other.

And that Crakers are indeed born naturally 'Crakerish' and not 'human,' thus revealing their inhumanity instead, becomes dramatically clear in a scene at the beginning of *MaddAddam*. Once more, the mating ritual of the Crakers is the focus of othering. Even though Crake designed the Crakers not to feel constant sexual desire, they read the continuous signaling of human female pheromones as being in heat (all the time), thus aggressively initiating their mating ritual. When the 'Crakerish' reaction of choosing four partners does not occur, their genetic code does not allow them to relinquish activity but causes them to pursue it further. They do not understand the female's unwillingness to mate, as a Craker woman giving off such signals would indeed be in heat and willing. But instead of handling the situation with compassion for the inhuman/posthuman, the narrative evokes a frenzied rape scene that is disturbing, yet bizarrely ridicules the Crakers:

The Craker men, sniffing Amanda: *She is the blue one! She smells blue! She wants to mate with us! Give her the flowers! She will be happy!* Amanda scared: *Stay away! I don't ... Ren, help me!* Four large, beautiful, flower-toting naked men close in on her. *Toby! Get them away from me! Shoot them!* [...] The Craker men: *She is blue! She is blue! We are happy! Sing to her! The other one is blue also!* [...] Toby looks over, across the fire: Amanda has disappeared in a flickering thicket of naked male limbs and backs. Ren throws herself into the sprawl and is quickly submerged. (*Madd* 12–13)

Toby's reaction displays her helplessness, but also her complete incomprehension: 'This is a major cultural misunderstanding. If only she had a pail of cold water!' (*Madd* 13). In fact, the cultural misunderstanding is hers, not that of the Crakers. She sees creatures that look like humans and simply presupposes a common 'human nature,' something that an education, a provision of a 'second nature' might reveal. The problem

is not that the Crakers are not allowed subjectivity, but that they are allowed humanist subjectivity only, in which they are children: inhuman, unfinished, and in need of education.

In following confrontations, whenever Craker sexuality is concerned, they are described as 'in the process of becoming human' and unsure of their 'Crakerish' nature: 'Ever since they've learned that rambunctious group copulation is not acceptable, they don't know what's expected of them' (*Madd* 100). They are trained to ignore their nature, because it does not conform to human standards. Indeed, the narrative voice satirically comments on their sexuality as 'wrong,' ridiculing them. Craker subjectivity, as being different but valid, is denied:

Is she blue? One is blue. Two others were blue, we joined our blue to their blue but we did not make them happy. They are not like our women, they are not happy, they are broken. Did Crake make them? Why did he make them that way, so they are not happy? [...] These women scream with fright, they do not choose us even if we give them a flower, they do not like a wagging penis. We do not make them happy, we do not know why they scream. (Madd 100–02)

Though the passage is marked as dialogue, it remains unclear if Toby hears this being said or thinks this would be the Crakers' discussion.³ The satirical stance of the narration remains active, but the reader's laughter about the innocence and ignorance of the Crakers as inferior children here gets suffused with a feeling of unease, which originates in the humanist value system presenting itself in a euphemism (a 'cultural misunderstanding'; *Madd* 216) for a behavior that among humans would be considered rape, but that the yet-unfinished humans cannot be held responsible for. The Crakers' subjectivity is thus constantly undermined by a stream of commentary that reduces them to children and points out their potential to become human, instead of accepting difference, complexity, and hybridity. The reader has no other choice but to view the Crakers through this deeply humanist lens, hoping that '[g]iven time, even the Children of Crake may come to count as human, as their language develops, as they mythologize and epigeneticize' (Cooke 123).

³ Italics are used by the text to mark both authentic dialogue between characters and inauthentic interior dialogues Toby has with herself – for example imagining to explain certain terminology to the Crakers (e.g. 'immune system'; *Madd* 101). In both cases, the narrative voice remains Toby's.

3.3.2 Nature, Culture, and Xenogenesis: Becoming (Post)Human

And indeed, at the heart of the trilogy is the question of human nature, as Margaret Atwood herself has put it: 'What features are at the core of our being? What a piece of work is man, and now that we ourselves can be the workmen, what bits shall we chop off? What is it to be human?' ('My Life' 162). In the trilogy, she explores these questions extensively through her human characters, as well as through the Crakers. Especially in regard to her depiction of the Crakers, there are noticeable contradictions, though, because the narrative simultaneously presents them as both potential humans and inaccessible other.

By stylizing Snowman as guardian, storyteller, and shaper of Craker culture, Atwood instills in her narrative the assurance that human nature is defined by those aspects which Crake tried to eliminate: 'the centrality of the creation of symbols and metaphors' (Bosco 164). But the elimination failed, Atwood suggests, when claiming that 'Art and religion – and particularly narrative – are wired in' (cited in McKay), are inherent to human DNA and thus waiting to manifest in Craker DNA as well. So it is little wonder that many critics agree with Atwood in viewing the Crakers as inhuman-becoming-human and in need of humanist values and concepts to 'reach their full potential' (Brydon 453) and become human: 'Yet what Snowman finds his charges needing most [...] is, precisely, culture: explanation, understanding, stories of origin and purpose [...] The need for meaning lies too deep in human nature, it seems, for even Crake to have eradicated it' (Deresiewicz 30). Similarly, Canavan argues, the Crakers lack 'the creative vitality of humanistic thought – and they only begin to seem potentially worthy successors to *Homo sapiens* to the extent that they turn out to retain this capacity after all' (147). Understanding the Crakers as simple and 'limited,' as subhuman (by intellectual standards), Francoise and Jeff Storey argue that Snowman provides them with basic instructions, educates them in a primitive 'second nature,' an act that amounts to 'creating and recording History, [...] the human urge to do this is compulsive and inescapable' (136; see also Bosco 165).

There is another side to the Crakers, though, which has prompted critics to analyze them as a 'pastoral fantasy' of ecological humanism, in which the 'wildness' has been bred out of humankind, 'creating a species of human beings that will be congenitally unable to soil the planetary *oikos*' (Bergthaller 735). In this reading, the genetically modified human 'allegorize[s] the radical transformation [...] necessary in order to save the planet' (Canavan 152). For 'us' not to be a threat to nature any longer, we would need to become like the Crakers, 'noble savages perfect

in every way [...] physically, biologically, in their social relationships as well as in their existential experience' (Jameson, 'Then You Are Them' 7). In this reading, though, a human future would have to leave behind parts of what humanism considers human nature, as Parry argues:

The Crakers, then, may be peaceful and vegetarian, incapable of violence and content to live simply and harmoniously on a diet of grass and berries, but they are also incapable of abstract thought, of art or poetry or self-reflection [...] For all their virtues, the Crakers are clearly something less than human. (252)

But read as abstract environmental fantasy, the Crakers remain outside of 'our' reach: 'no matter how we try, we could never become the Crakers, nor (as with their caecotrophy) can we really even understand their subjectivity and the way they see the world' (Canavan 154). The future would only be possible for them: 'hope, but not for us,' as Canavan titles his reading of the novels.

The true critical posthuman potential, in my opinion, lies in the middle and in realizing that the 'end of one understanding of the human is the beginning of another,' that 'what *counts* as human will shift' (Cooke 123). The Crakers – and this is contrary to the reading of human nature manifesting itself in DNA – are not simply defined by their genetics alone. They are also participating in what Bernard Stiegler introduces as 'epigenetic' and 'epiphylogenetic memory' (177) and reserves solely for the human – the cultural memory, into which they are born and which exists beyond them, and the technological support structure that ensures its existence beyond the individual death (e.g. technological artifacts, but also language and history). Grayson Cooke argues that *Oryx and Crake* foregrounds the destruction of these support structures, effectively staging the end of the human:

Without the epigenetic and epiphylogenetic function of language and technics, Atwood suggests that there would be no human, only meaningless questions and meaningless answers – the meaninglessness of toast without a toaster, for instance. The human is always in flux, always becoming, always materializing, transducing, taking itself apart, putting itself back together, dis- and re-membling. Without memory, however, and therefore without memory supports, there can be no re-membling. (Cooke 122)

Concerning the human (i.e. only Snowman in *Oryx*) this might be true, but Cooke ignores the fact that the Crakers possess epigenetic memory

as well. 'Language is a perfect example. It is not genetic; it is acquired, and yet it has its own history, its own genealogy, its own memory that exceeds the individual. In entering into language, it creates a past for us, and we acquire this past, which we continue as our own' (Barnet). The Crakers experience a different but similar epigenetic event – they are born into a language and they shape it – later word creations like 'the Pig Ones' attest to that. It is true that human culture as Jimmy experienced it has become lacking a referent, but the environment around the Crakers is just as much determinant for their culture. So, when Ralph Pordzik argues that 'Natural environment, the human body, and cultural production are intrinsically connected, each evolving in response to another's position or activity in a complex network of relationships' (155), this holds true for Craker evolution also. When Snowman is missing, feverishly wandering the Compounds, they erect a statue to remind them of him. The stand-in figure, representative of the absence of Snowman but also a memory technique, becomes their first epiphylogenetic event, 'marking the first semiotic space in their culture: by distinguishing absence from presence and thus reintroducing into their discourse a new essential dichotomy' (Pordzik 155).

With the continuation of the plot in *MaddAddam*, epiphylogenetic memory is continued, as the Crakers learn about writing and set down words to materially remain in memory beyond the individual death:

Now I have added to the Words, and have set down those things that happened after Toby stopped making any of the Writing [...] I have done this so we will all know of her, and of how we came to be. And these new Words I have made are called the Story of Toby. (*Madd* 387)

How strongly genetic and epigenetic events interact to shape the culture becomes clear, once more, in terms of the mating cycle of the Crakers. The MaddAddam group discuss the epigenetics of the Crakers:

How much of Craker behaviour is inherited, how much is cultural? Do they even have what you could call a culture, separate from the expression of their genes? [...] The mating cycle is genetic, obviously [...] as are the changes in the female abdominal and genital pigmentation that accompany estrus, and the male equivalent, leading to the polysexual acts. (*Madd* 139)

Later, when Crakers and humans have had more cultural interaction, and epigenetic experiences of language have shaped both species, the Crakers

record their cultural adaptation of this genetically shaped behavior – as it evolved in the complex relationship of the Crakers living with the humans – and hand it over into epiphylogenetic memory:

[O]ur Beloved Three Oryx Mothers, who showed us that we and the two-skinned ones are all people and helpers, though we have different gifts, and some of us turn blue and some do not. So Toby said we must be respectful, and always ask first, to see if a woman is really blue or is just smelling blue, when there is a question about blue things. (*Madd* 386)

As I have noted, both humans and Crakers are shaped by the encounters and interactions; both adapt and form a new culture. Ku argues, ‘the Crakers dilute humanity insidiously. Even though they remain human in form, their eyes, bones, flesh and body odor are extracted from jellyfish, coral, mango, and citrus fruit’ (115). This is true only in terms of genetics, while at the same time, human epigenesis and epiphylogenesis shapes the Crakers – the categorial uncertainty is doubly present, both for the human and for the non-human. In the end, it might be the hybridity of both that allows for a posthuman utopian horizon to open up.

The utopian potential inherent in Atwood’s trilogy lies neither in the Crakers becoming fully endowed with humanist values nor in the extinction of the human and a ‘hope, but not for us’ – it rather lies in the critical posthuman subjectivity that sees both groups as the ultimate ‘companion species.’ Haraway argues that ‘to companion is “to consort, to keep company,” with sexual and generative connotations always ready to erupt’ (*When Species* 17), while ‘species’ refers to the act of seeing similarity and difference. In biology the term signifies ‘the dance linking kin and kind. The ability to interbreed reproductively is the rough and ready requirement for members of the same biological species’ (*When Species* 17). Consorting with and crossing the boundaries of species is possible for Haraway in many ways (e.g. she speaks of ‘sybiogenesis,’ of being licked by her dog; *When Species* 15), but in the case of Craker–human interaction, the ultimate companionship might prove the interbreeding of species.

In a discussion of a biological marker for humanity, Ivory Bill – one of the MaddAddam group – adheres to the above definition of species, arguing that if the Crakers can ‘crossbreed with us, then case [for their humanity] made. Same species. If not, then not’ (*Madd* 206). But Manatee, another member, invokes the fertility of the next generation as key marker, reminding everyone of the mule as sterile hybrid: ‘We wouldn’t know for sure until the next generation’ (*Madd* 207). The

discussion rages on, especially in regard to the different sexual functions and their genetically induced signals ('the woman has to be in heat'; *Madd* 208). When White Sedge, a female member of the group, remarks that 'Women aren't dogs' (*Madd* 208) and is offended at the discussion, the inherent problem of the distinguishing marker of biology becomes clear – it once more establishes a humanist discourse of mechanized nature, reducing species interaction to simple biomechanical functions and women's sexuality to a sort of simplistic instrument to determine ontological difference.

How differently the cultural factors come into play can be seen in the reactions of different female members of the group when confronted with their pregnancy. Whereas the scientist Swift Fox is cheerful and jokingly remarks about the paternity of her children (twins, as it turns out) – 'I've been doing an experiment in genetic evolution. Reproduction of the fittest. Think of me as a petri dish' (*Madd* 273) – both Amanda and Ren, who have had no say in getting pregnant, are afraid that their children might be 'Frankenbabies,' fathered by a 'gene-spliced weirdo monster' (*Madd* 216). Swift Fox's remark is important, as both she and Amanda had sexual intercourse with Crakers and humans – the birth of hybrid children would signal a strong genetic dominance. And indeed, all four children are Craker-human hybrids, at birth only noticeable through the 'green eyes of the Crakers,' but raising the question, 'What other features might these children have inherited?' (*Madd* 380).

Atwood leaves the future and the final determination of species equality open (whether the hybrids themselves can have children), but adds that the group grows, through human, Craker, and hybrid children alike. In this potential for a hybrid, multiple, and changing humanity (both genetically and epigenetically) lies the critical posthuman potential: 'The Crakers also help us to remember that as a species, humans are not exempt from adaptations and mutations that occur through processes of evolution, despite our various advances' (Rozelle 69). Nonetheless, as mentioned above, this posthuman utopian potential is at least somewhat relativized by the narrative's commentary based in humanist values and the conflicted depiction of the posthumans as inhuman and inferior.

In contrast to Atwood's novels, where Craker-human hybridity is possibly the only option to imagine a future for any humanity (evolved or otherwise), as most human life has simply been wiped out, in Paolo Bacigalupi's *The Windup Girl* the human and the posthuman vie for the same natural niche in an overextended ecosystem, both claiming the top position of the proverbial food chain. What in Atwood's trilogy becomes an experiment in communal survival, in *The Windup Girl* promises to be an outright evolutionary conflict. In Emiko, Bacigalupi enacts the

empowerment of the posthuman species that is culturally and genetically controlled and held in servile positions.

Having been rejected from her 'natural' habitat as a companion (in Haraway's definition of someone to be with, socially and sexually), Emiko struggles with a genetic contradiction that her training is supposed to mask:

Mizumi-sensei taught that there are two parts to a New Person's nature. The evil half, ruled by the animal hungers of their genes, by the many splicings and additions that changed them into what they were. And balanced against this, the civilized self, the side that knows the difference between niche and animal urge. That comprehends its place in the hierarchies of their country and people, and appreciates the gift their patrons provide by giving them life. [...] Two sides of a coin, two sides of the soul. Mizumi-sensei helped them own their souls. Prepared them for the honor of service. (*Windup* 154)

Here, cultural training (the human side) is supposed to keep in check the natural urges (the animal side) of Emiko's being, which is ironic, as it is due to the genetic splicing that the urge to obey has been triggered in her in the first place. Nonetheless, after the abandonment by her master, Emiko is confronted with a living environment that negates if not reverses the training – when she is maltreated and debased, her internal struggle grows and she wishes to resist her genetics. The strength of this desire is obvious when she is raped and sees herself manipulated by the far-removed geneticists that created her, that forced her body into obedience and sexual willingness: 'Her body performs just as it was designed – just as the scientists with their test tubes intended. She cannot control it no matter how much she despises it. The scientists will not allow her even this small disobedience. She comes' (*Windup* 38).

In the beginning Emiko's resistance is passive. She expresses contempt through thoughts and words, shows her emotions but is swiftly punished, but when Emiko hears about enclaves of escaped windups living in freedom, she realizes that a possibility to resist her DNA exists. Emiko is left 'alone with a pounding heart and a sudden urge to live' (*Windup* 46). This desire to survive supersedes all genetic obedience programming and she actively begins to plan an escape and to assert herself as an empowered subject. It takes her a while to realize, but when she is confronted with certain death, she manifests extraordinary abilities such as superhuman speed and extremely powerful body coordination: 'Emiko watches them, puzzled. They are halfway across the roof, but

they are so very very slow [...] Their every motion drags [...] So slow [...] Emiko smiles. Optimal. She steps up onto the roof ledge' (*Windup* 199). She escapes the clutches of the environment ministry's agents, becoming fully aware of how 'optimal' she is in terms of physique. Her body can withstand much more than any human's and she begins to realize her potential. She becomes self-assertive and empowered, starts to feel her embodiment not as a prison but as a gift and fully embraces her subjectivity:

She is New People, and she moves through the crowds so smoothly that they do not know she is there. She laughs at them. Laughs and slips between them. There is something suicidal ticking in her windup nature. She hides in the open. She does not scuttle. Fate has cupped her in its protective hands. She slips through the crowds, people jerking away startled from the windup in their midst, from the bit of transgressive manufactory that has the effrontery to stain their sidewalks, as if their land were half as pristine as the islands that have ejected her. She wrinkles her nose. Even Nippon's effluent is too good for this raucous stinking place. They simply do not recognize how she graces them. She laughs to herself, and realizes when others look at her that she has laughed out loud. (*Windup* 252–53)

So when the next onslaught of rape and abuse comes, Emiko's flight to freedom slowly dies inside, and 'the falcon if there is any falcon in Emiko at all, if it ever existed, is a dead thing, dangling. Not meant to live or fly or escape. Meant to do nothing but submit' (*Windup* 257). This time, she is pushed too far, though, and realizes that she has nothing left to lose: 'She is dead [...] The falcon lies dead. And then she thinks that some things are worse than dying. Some things can never be borne. Her fist is very fast. Raleigh-san's throat is soft' (*Windup* 259). She kills not only her captor but also the men that have debased her – 11 men dead within seconds: 'His eminence the Somdet Chaopraya's neck has been ripped entirely away, breaking it, snapping and tearing so that though the spine seems attached still, it acts as a hinge rather than a support. "It looks like a demon tore him open"' (*Windup* 280).

At this point, the posthuman, culturally relegated to an inferior and servile position, asserts itself and realizes its full potential and natural superiority to the human. Emiko's act of survival reveals the underlying conflict of evolution and finally triggers open warfare in the city, between conservative and progressive forces, represented in the two ministries of

Environment and Trade. When the smoke clears, thousands have been killed, Bangkok has been flooded, and most humans have fled the city. Emiko remains, surviving and symbolically claiming the remnants of human civilization as her own: 'The days pass. She becomes comfortable entirely in her world of water and scavenge' (*Windup* 356). In fact, in the new physical environment, Emiko is the better-suited species: 'in the genetic warfare of Bacigalupi's world, they have a great advantage, for the moment, when it comes to surviving filth, pollution, and bodily waste' (Sullivan 521). By depicting Emiko's empowerment and resistance against her mistreatment, Bacigalupi stresses the posthuman potential for change and a radical new subjectivity. Emiko emancipates herself from the inferior position, proving self-assertion and self-reliance, and she thus cleverly undermines the nature/culture divide and her servile 'natural' position.

What is more, though, Bacigalupi – just like Atwood – adds the dimension of miscegenation and procreation to the commentary on a possible posthuman future. Emiko's physical otherness, in contrast to the Crakers' otherness, does not lead to reactions of fright and 'cultural misunderstanding'; on the contrary: Her perfect skin and natural beauty make her an object of desire and fascination. The monstrous in her brings forth 'simultaneous repulsion and attraction,' her body becomes 'dangerously entic[ing]' (J. Cohen 17, 19), and both Emiko and the calorie man Anderson Lake (who is the main human reflector) describe the uncertainty of the attraction. At the core of the representation of Emiko's sexuality is the question of whether she is in control of it or her genetic programming is. Lake thinks: 'Does she wish this? Or only acquiesce? Is she even capable of refusing? Her breasts press against him. Her hands slip down his body. He's shaking. Trembling like a sixteen-year-old boy. Did the geneticists embed her DNA with pheromones? Her body is intoxicating' (*Windup* 115–16). Lake does not understand the attraction, feels compelled by invisible DNA and clever posthuman design – he is constantly aware of her otherness and is drawn in by it.

Emiko, on the other hand, seems capable of forgetting her otherness only in exactly those moments – losing her non-human nature when her cultural and genetic programming is so effectively fulfilled:

Emiko is surprised at how happy she is that he delights in her, that he runs his hands over her skin, that he wishes to touch her [...] It is a relief to be loved, even if it is only for her physicality [...] Emiko presses herself to him, and their mouths find one another, and for a time she forgets entirely that people call her *windup* and

heechy-keechy. For a moment she feels entirely human, and she loses herself in the touching. In Anderson-sama's skin. In the security of pleasure and duty. (*Windup* 221)

The union of human and posthuman thus negates their respective categories: Lake, the human, becomes fascinated and drawn into a posthuman subjectivity and wants to understand Emiko's programming and the genetic machinations of her actions. Emiko, though, forgets her DNA and her otherness; she becomes human in the act of sexual intercourse. In both cases, the subjective narrative position allows the reader to connect the respective desires, see the similarity and the complementation. The posthuman-human intercourse opens a utopian potential and blurs the subjective positions of each.

But it does not produce hybrid offspring, as does the relation of species in Atwood's trilogy. On the contrary, the most important aspect of a natural sexuality – that of procreation – has been forcibly removed from New People. In a longing moment, Emiko discusses the lessons learned from cheshires: 'Just think if they had made New People first [...] Generippers learned too much from cheshires' (*Windup* 114). Lake realizes the threatening potential behind such longing, and the security embedded in Emiko's DNA:

She doesn't say anything else, but Anderson can guess what's in her mind. If her kind had come first, before the generippers knew better, she would not have been made sterile. She would not have the signature tick-tock motions that make her so physically obvious [...] Without the lesson of the cheshires, Emiko might have had the opportunity to supplant the human species entirely with her own improved version. Instead, she is a genetic dead end. Doomed to a single life cycle, just like SoyPRO and TotalNutrient Wheat. (*Windup* 114)

The potential for New People to replace the human population is the threat that looms over the story and shines through every aspect of her depiction: It can be found in Emiko's better resistance to any of the genetically engineered diseases, in her physical superiority – a geisha with the powers of a supersoldier – in the desire she evokes in men, but also in her creation with markers of otherness, in her movement, her overheating, and the obedience genes, her strict cultural training and integration into a hierarchical society. New People, the story suggests, are far better suited for the new world, but humans fear them and shackle them to their DNA. Expressed through the words of generipper Gibbons

and suffused with the hubris of a god ('The world is ours'), the novel's underlying message becomes clear, though:

We should all be windups by now. It's easier to build a person impervious to blister rust than to protect an earlier version of the human creature. A generation from now, we could be well-suited for our new environment. Your children could be the beneficiaries. Yet you people refuse to adapt. You cling to some idea of a humanity that evolved in concert with your environment over millennia, and which you now, perversely, refuse to remain in lockstep with.

Blister rust is our environment. Cibiscosis. Genehack weevil. Cheshires. They have adapted. Quibble as you like about whether they evolved naturally or not. Our environment has changed. If we wish to remain at the top of our food chain, we will evolve. Or we will refuse, and go the way of the dinosaurs and *Felis domesticus*. Evolve or die. It has always been nature's guiding principle. (*Windup* 243)

In this speech, Gibbons undermines the human position as exceptional and superior and prophesizes its replacement – through simply evolutionary necessity. In his view, 'hope, but not for us' is fully acceptable and thus it is little wonder when he becomes the agent of change and the posthuman utopian potential in the end of the novel. Gibbons meets Emiko and stages himself like a god pleased with his own creation, showing off how much he knows about her. In their conversation, Gibbons proves sympathetic to New People and offers a future unimagined by Emiko before:

The windup movement is not a required trait. There is no reason it couldn't be removed. Sterility [...] Limitations can be stripped away. The safeties are there because of lessons learned, but they are not required; some of them even make it more difficult to create you. Nothing about you is inevitable [...] Someday, perhaps, all people will be New People and you will look back on us as we now look back at the poor Neanderthals [...] You cannot be changed, but your children – in genetic terms, if not physical ones – they can be made fertile, a part of the natural world. (*Windup* 358–59)

As Heather Sullivan argues, 'Bacigalupi's novel embraces,' fully realized in Gibbons's offer to create non-sterile New People, 'the reproductive option for its creature' (522), and thus projects a truly posthuman future and the eventual replacement of the human. But just as Atwood's

trilogy concludes with a continuum of human–posthuman possibilities, a future as potentially utopian as it is dystopian, so Bacigalupi’s novel shows ‘Emiko and her projected posthuman progeny [...] poised, like the genetically-engineered cheshires in relation to the feline predecessors they decimated through competition, to put a challenge to the concrete structures of technoscience, geopolitics, ecology, economy, “Nature,” and the “human being”’ (Hageman 298).

3.4 Posthumanism and the Interregnum

As we have seen, both Margaret Atwood and Paolo Bacigalupi imagine a world of ecological disaster, caused by the human inability to see the consequences of its hypercapitalist endeavors and the environmental changes caused by the Anthropocene. As such, both worlds are dystopian extrapolations from the liquid modern realities of contemporary society and represent a creative intervention into recent sociological discourse. In both cases, though, the authors go further in their criticism, when they reveal that humanity is challenged by new forms of life, mainly in the guise of genetically engineered animals and posthumans – all of which are, again, products of the same hypercapitalist tendencies that have been revealed as existent today. In dissolving the boundaries between humans and others, be they non-human animal, inhuman, or posthuman, both Atwood and Bacigalupi revoke the humanist subject position as superior and exceptional.

In Atwood’s case, even though humanist ideals and values remain at the heart of her commentary, the satirical depiction of a hybridized future nonetheless contains the possibility of a critical posthumanist subjectivity in the hybridization of society. Within the dystopian landscape of her novels, the community of pigeons, humans, and Crakers, with its hybrid, complex, and shifting conceptions of subjectivity, is poised to become a new form of society that incorporates a *zoe*-centric view of life and fosters interconnected relations between different species, earth, and technology – thus a truly posthuman society.

In Bacigalupi’s world, the critical posthumanist position is more vocal, in that he allows the posthuman perspective its own narrative voice and thus a connection with the reader. But just as with Atwood, the dystopian surroundings of the world dominate the new subjectivity. The human suppresses posthuman technology through the mechanics of consumer society and relentlessly hunts genetically altered creatures without mercy. But the representation of suffering and torture in the posthuman is exactly what connects the reader to its subjective position

and thus allows for the conceptual space of posthumanity to take hold. In the end, as with Atwood, humanity is destroyed (or at least in retreat from the novel's locale) and the posthuman is once more waiting to take charge, to step in and reveal itself to be the 'better option' for survival, the ecological alternative to the destruction represented in humanity.

Both authors thus express a position on the brink of a radical transformation, at the end of the conceptual security of what it means to be 'human' and already deep in the process of altering the social, ecological, and ontological make-up of their respective worlds. In their fiction, the human is a concept of the past and cannot capture the realities of an interconnected life on earth. But the new *zoe*-centric concept to grasp the possibilities that lie ahead has not established itself yet.

In Bauman's terms, then, both authors allegorically describe a moment of interregnum, that '*extraordinary situation*' when the social, political, and cultural frame has lost its grip and 'a new frame, made to the measure of the newly emerged conditions [...] is still at the design stage, has not yet been fully assembled' (*44 Letters* 120). What is so radical about the fictional interregnum presented in Atwood and Bacigalupi is that they posit not simply a political sovereignty that is 'underdefined and contentious, porous and poorly defensible, unanchored and free-floating' (Bauman, *44 Letters* 120) but the human condition itself. The interregnum described is that of a time in which the human has come under attack and the new, posthuman condition is the concept that is still underdefined, porous, and free-floating. The moment described in the novels, the interregnum between the human and something that follows in its stead, is still undecided – posthuman subjectivity is just on the brink of fully realizing itself. As such, the novels propagate the utopian possibility to explore an alternative in the reader's present, to already allow for a posthumanist perspective. They stage, as Eric Otto suggests,

a productive tension between what is (im)possible for their protagonists and what is still possible for us. There are social, political, economic, and cultural forces that work against the realization of ecologically and socially better ways of being today. But these forces have not fully interrupted our ability to care for nonhuman species [...] to balance economic and cultural production with reproduction [...] and to disseminate the understanding that the human body, like all other species' bodies, is always in ecosystems. (189)

An ecologically aware, *zoe*-centric, and interconnected way of thinking – a critical posthumanism in Braidotti's sense – is thus still possible

for us, and the utopian impulses enacted in the dystopian landscape of their fiction reveal this to us. In biopunk fiction, such as that of Atwood and Bacigalupi, we thus find examples of what Vint calls an 'ethical posthumanism which acknowledges that self is materially connected to the rest of the world, in affinity with its other subjects [...] It is a posthumanism that can embrace multiplicity and partial perspectives, a posthumanism that is not threatened by its others' (*Bodies* 189).

Science, Family, and the Monstrous Progeny

As we learn from 3.5 billion years of evolution we will convert billions of years into decades and change not only conceptually how we view life but life itself. (Venter)

The twentieth century saw many attempts at social engineering in order to change the face of humanity, just as industrialization and progress in the natural sciences had proven to change the face of the earth in the nineteenth century. For Bauman, the idea of ‘adjusting the “is” of the world to the human-made “ought”’ (*Living* 150) is not a new endeavor; indeed, creating a ‘new man’ (or ‘new woman’) has been on the agenda since the beginning of modernity – witness the origins of science fiction in Shelley’s *Frankenstein* and the literary musings on automata, homunculi, and posthuman races in many a well-known story, from E.T.A. Hoffmann’s ‘The Sandman’ (1816) to Goethe’s *Faust* (1808).

For lack of scientific knowledge about the animating principles of life, though, most human engineering of the twentieth century (in contrast to its fictional mirror) had to content itself with experiments on the social scale, attempting to engineer better social bodies by ‘cultivation’ of specific traits and the ‘elimination’ of other, less desirable aspects: Atrocities such as ethnic cleansings, eugenics, or some of the inhuman machineries of concentration camps and gulags were the results. In the solid modern stage, these attempts at ‘mastery over fate,’ at shaping humanity according to specific plans, were representative of governments, ‘with their powers of coercion institutionalized in the state, that stood for the “human species” capable of accomplishing collectively what humans individually went on trying to do with little prospect of succeeding’ (*Living* 150). But as state power waned and a liquid modern society came to be, social engineering and ‘adjusting the “is”’ became the responsibility of the private sector and the individual:

‘Like so many other aspects of human life in our kind of society, the creation of a “new man” (or woman) has been deregulated, individualized, and subsidiarized to individuals, counterfactually presumed to be the sole legislators, executors and judges allowed inside their individual “life politics”’ (Bauman, *Living* 148).

In addition to shifting all human engineering from the public to the private sectors of society, liquid modernity also saw an increase in scientific knowledge and its potential to ‘understand life and perhaps even to redesign it’ (Venter). Biotechnology, as imagined by Haldane, has made twenty-first-century reality science-fictional in that it emphasizes the dimension of possibility, rapidly closing the gap between what is possible and what is only imaginable (Csicsery-Ronay, *Seven Beauties* 3). Creating life in the geneticist’s laboratory is no more the feat of sf’s Doctor Moreau or Victor Frankenstein, but has become reality in Craig Venter’s fully artificially assembled bacteria or genetically engineered creatures such as Eduardo Kac’s glow-in-the-dark bunny Alba – the possibility of getting from there to a fully realized posthuman life seems only gradual and a matter of time, money, and the willingness to ignore the science-fictional dimension of consequence.

No wonder, then, that sf’s earliest incarnation and the paradigm myth for scientific hubris in creating an artificial human being, Mary Shelley’s novel *Frankenstein; or, The Modern Prometheus*, first published in 1818, has found a thought-provoking, posthumanist reading in Vincenzo Natali’s 2009 film *Splice*. Its appropriation of the material to liquid modern realities is a mythopoeic investigation into the cultural needs specific to its contemporary audience, its anxieties and dominant discourses. Director Vincenzo Natali positions the film along the fault line of horror and science fiction when he refers to *Splice* as ‘a creature movie for adults because it pays homage to all the things that one would expect from a Frankenstein kind of story’ (‘Behind the scenes’), nonetheless arguing for a more nuanced reading that ‘hopefully breaks new ground [...] with the emotional relationship with the creature’ (cited in Captain). The film thus negotiates not only the science-fictional dimension of possibility in terms of a posthuman being, but also the dimension of consequence in terms of the commitments involved towards the newly created life and towards society as a whole.

As the film is not widely known, a brief summary might be in order: *Splice* presents the story of two genetic engineers and their experiment of creating a human–animal hybrid through DNA resequencing. Clive (Adrian Brody) and Elsa (Sarah Polley), the young and ambitious scientists, succeed in their experiment and then raise their creation in the lab, while hiding her from their employers. Dren (Abigaile Chu/Delphine

Chanéac), the hybrid being, evolves and grows through mutation, at some point becoming uncontrollable in the lab environment. Clive and Elsa secretly move Dren to an old farmhouse and become more and more conflicted over the ethical implications of the experiment, shattering their own relationship in the process. When Dren rebels against her captivity, Elsa's own abusive childhood resurfaces and a struggle erupts in which Dren is mutilated and traumatized. The film concludes with Dren evolving, mutating, changing expression of biological sex, and becoming predatory, killing Clive and impregnating Elsa before being killed.

As can be seen from this short paragraph, the film takes Frankenstein's creation story and adapts it to twenty-first century themes, reworks it to fit the biopunk cultural formation. *Splice* is an ideal example of a posthumanist negotiation of scientific consequences within the liquid modern world. But before I discuss the science-fictional dimension of consequence, a consideration of the film's appropriation of the story in terms of its creation of posthuman life, its form and function, will prove to be a necessary and important first step in the analysis.

4.1 The Monstrous and the Posthuman

When Vincenzo Natali describes his film as a 'creature movie,' he is most likely unaware of the critical implications such a label might bring with it, and that for example film critic Vivian Sobchack has devoted a whole chapter in her book *Screening Space* to the demarcation of the sf and the horror genre and films such as his. Sobchack points out that there are 'frequent cases of congruence' between the two genres and that this liminal position, this 'miscegenation,' is mostly inhabited by 'what we commonly call the Monster or Creature film' (30). The difference between horror and sf lies, according to Sobchack, in the genres' respective emphasis on the personal or societal exploration of limits, and the restoration of the natural or human-made order of things. The creature film disturbs this either/or binary in that it gradually connects the two genres, from the 'Monster' of horror films to the 'Creature' of science fiction: Whereas horror movies emphasize anthropomorphic monsters, with their own moral struggles and personalized relationships towards both world and hero, physically deformed but ultimately human-like and thus comprehensible, the sf creature is only physically present, as depersonalized abjection, soulless, dispassionate, and without particularity (Sobchack 30ff.). The monster is ideally represented in Frankenstein's creation – struggling to become human, to find its place in life, and from an audience-response perspective ultimately

garnering some measure of sympathy, and being given a dominant part in the storyline – whereas the creature is more like the swarm of mutated insects that destroys human society and is motivated only as the incomprehensible force of nature's wrath. Dren, the human–animal hybrid of *Splice*, is thus not, as Natali's uncritical comment makes her out to be, a creature. But neither is she solely the allegorical representation of man falling from grace, the 'darker side of Man and therefore comprehensible' (Sobchack 32).

Sobchack's horror film monster is predicated on early Hollywood examples such as James Whale's *Frankenstein* (1931), Tod Browning's *Dracula* (1931), or George Waggner's *The Wolf Man* (1941), and as such needs to be understood only as a first step towards the cultural function of the monstrous today. The monster remains a metaphor for moral struggle, but it becomes much more, as Jeffery Cohen argues, by the end of the twentieth century, as 'we live in a time of monsters,' in a society saturated with anxiety and insecurities, which manifest 'symptomatically as a cultural fascination with monsters – a fixation that is born of the twin desire to name that which is difficult to apprehend and to domesticate (and therefore disempower) that which threatens' (viii). And for Marina Levina and Diem-My T. Bui the continual changes of the twenty-first century and liquid modern reality, with its 'increased mobility of people, technologies, and disease[,] have produced great social, political, and economic uncertainty' (1), resulting in an omnipresence of monstrous categories not just in the cultural imagination but in life. Levina and Bui argue that 'monstrosity has transcended its status as a metaphor and has indeed become a necessary condition of our existence in the twenty-first century' (2). The monstrous produces meaning not simply as a liminal object, a metaphorical other, but as a 'fluid category concerned with representation and ambiguity of change' (Levina and Bui 5), especially in its naturalization of a posthuman 'becoming' of a new subjectivity.

Splice elaborates this specific condition of twenty-first-century liquid modern reality as monstrous in that it positions Dren as multiple and hybrid subjectivity, eliminating any option for categorial binaries – human/animal, animal/plant, human/posthuman, natural/cultural, natural/artificial, male/female, prey/predator. As Cohen points out, monsters 'are disturbing hybrids whose externally incoherent bodies resist attempts to include them in any systematic structuration' (J. Cohen 6). Dren is thus becoming-posthuman, becoming-animal, becoming-monster: She represents 'categorial ambiguity, ontological instability' and is created 'through hybridization [...] the confusion of species [...] the conflation of genders and genres' (Weiss 124).

The film introduces Dren as a creation of genetic engineering, her DNA a composite of human, animal, and plant genes. After having successfully spliced two hybrid creatures (non-anthropomorphic, incomprehensible, and abject – amorphous blobs called Ginger and Fred) from seven distinct life forms, Clive and Elsa decide to test their theories by ‘implementing human DNA into the hybrid template.’ But while the film does not specify the genetic traits, their original donor species, or the internal ratio of the mix, in a scene in the film the scientists visualize the genetic make-up of the creatures to consist of DNA taken from a bird, a horse, a fish, a kangaroo, a lizard, a snail, and some part of a plant – assuming the icons in the film’s presentation represent actual species and are not abstract representations of some taxonomic ranks (inconsistently displayed).

The film already enacts Dren’s creation as cyborgian in Haraway’s sense, ‘ambiguously natural and crafted’ (*Cyborg Manifesto* 149), by stressing this nature/culture duality in its representation of the laboratory work: On the one hand, the time-consuming and precise scientific process of splicing genes becomes pop culture, taking on a *CSI* feel in an action montage underscored with hip techno music. The tedious process of several days and nights is reduced to less than two minutes’ screen time. But technoscience and its artificiality cannot complete the task on their own: The DNA strands will not fuse. Clive lashes out in his frustration against the techno music: ‘This retarded fascist uber-musik is the problem! It’s got us thinking in circles’ (Natali, Terry, and Taylor 17). He switches music: In the film, an organic and warm jazz sound fills the room and Elsa is inspired. In the original movie script the roles are reversed (Elsa is frustrated, Clive gets inspired) and instead of jazz music, ‘the room warms up under the gentle strains of FRANK SINATRA crooning COLE PORTER’S, “UNDER MY SKIN”’ (Natali, Terry, and Taylor 18). The result is the same: The two have ‘been dancing to the wrong beat’ (as Elsa says in the film) and now the fusion holds. In keeping with the musical metaphor, Elsa exclaims, ‘They’re changing partners!’ and Clive joins in: ‘Everyone dances with everyone’ (Natali, Terry, and Taylor 18–19). The techno music and its artificial, cold, repetitive, and circular motions are not conducive to the creative process; instead the warm, organic, and free-ranging motions of jazz – even more so than the lyrically meaningful Porter song – allow for the process to work. The almost seductive and sensual quality of the music, evocative of a date and sexuality, is transferred onto the scientific process. The DNA fusion becomes a dance, a fertility ritual with changing partners, writhing to the sounds of jazz music.

Dren’s ontology is both monstrous and posthuman, continuously changing and ‘becoming’ in that she needs to develop from single

cell to fully grown organism. When she is born, she is still a larva, in a protective flesh cocoon, which she quickly sheds to mutate into a mixture of bird and rodent (probably a manifestation of bird and kangaroo DNA). Her development through different 'ages' is presented in the film through evolutionary mutations – drastic physical reactions to her protean ability. Her posthumanity needs to evolve in mutational bursts out of earlier, more primitive stages. As such, Dren embodies the monstrous in her 'ontological liminality' (J. Cohen 6), resisting any hierarchical categorization. She epitomizes the monstrous posthuman and the film exploits our reactions towards such a concept in all its contradictions by evoking familiarity, fascination, horror, and abjection. As a signifier, Dren's monstrous self represents a rejection of the privileged humanist notion of 'us' by stripping the human of its essentialist features (Herbrechter 47–48) and undermining 'our' understanding of species boundaries. Dren makes explicit the posthuman realization that *'the human is always already evolving with, constituted by and constitutive of multiple forms of life'* (Nayar 2). As such, the film culturally negotiates a 'zoe-centric approach' to posthumanism, reconceptualizing life not as *bios* but instead as *zoe*: 'Living matter – including the flesh – is intelligent and self-organizing, but it is so precisely because it is not disconnected from the rest of organic life [...] [Life is] process, interactive and open-ended' (Braidotti 60).

The film addresses Dren as a posthuman for the first time when she is still characterized both as non-human animal (because she resembles a rodent–bird hybrid) and as inhuman (in Lyotard's 'second' sense of the term as inhabiting 'what is "proper" to humankind' (2)). She has not been culturally conditioned to shed 'the obscure savageness of childhood' and has not grown into 'the condition of humankind' (Lyotard 4) – a notion we have already seen in the last chapter reflected in the Crakers – and is thus not depicted as fully human, but represents something that goes 'beyond' these categories. In projecting subjectivity for the hybrid, the film openly engages in a 'process of humanization' of the repressed others of humanism: 'animals, gods, demons, monsters of all kinds' (Herbrechter 9).

When Elsa and Clive try to kill the monstrous splice after the initial phase of the experiment, they discover its metamorphosis from larva into its next evolutionary stage and the film emphasizes its dominant parent–child motif (more on that later). The scene begins with a typical horror scenario: Elsa hears something in the lab, signaling for help, but Clive in the control room does not notice her. In a rapid succession of cuts between close-ups of the frantically breathing Elsa and her point-of-view shots, restricted by the gas mask she is wearing, the movie orchestrates



The establishing shot of Elsa bonding with the splice
(screenshot: *Splice*, © Universum, 2010).

a surprise moment when we see the splice hanging from the ceiling, Elsa turning around to face it. A hard cut brings us face to face with the screeching splice opening its maw (filmed in an extreme frontal close-up), before it chases through the lab, jumping over equipment and leaving behind a wake of chaos. Editing and mise-en-scène here clearly indicate that we are to read this as an encounter with the monstrous, with the inhuman other – up to this point, we would clearly side with Clive, who wants to kill the potential threat.

But this is where the scene shifts. The splice hides behind a container, first seen as just a shadow, then slowly emerging from the protective cover, whiskers and snout visible. It squeaks, more threatened than threatening, and Elsa's mothering instincts take over. She ignores safety protocols, shedding the protective gear of gas mask and gloves to thwart Clive's plan to gas the room. She kneels down, bringing her closer to eye level with the life form, and tries to bond with the splice based on an instinctive mutuality of fear and pain in this situation.

A slow-paced, low-angle shot of Elsa kneeling and extending her hand, followed by a close-up of the splice emerging from its hiding spot, immediately change the fast-paced action scene of the flight reaction before shifting into an intimate moment of mother-child bonding, or as Elsa calls it, 'imprinting.' This encounter of both species is then presented visually as closely resembling that of typical human-human interaction: first an establishing shot from a sideways position in which Elsa remains still and the splice jumps forward, advancing towards Elsa's hand. Then a shot/reverse-shot combo of Elsa observing the splice and

the splice feeling Elsa with its whiskers, all of the shots slightly tilted to account for difference in height but slowly zooming in to signal the lessening of distance between the two. This intimacy breaks up when Clive comes into the room, out of focus behind Elsa, in order to drag her out while keeping the hybrid at bay with a broomstick. Here the scene stays close to the splice's perspective, camera focus changing to acknowledge Clive seen above Elsa's shoulder and then opening to a wider and higher shot in a fixed position above its eye level of the two figures retreating, before cutting to a zoom out away from the creature, while the door closes into the frame, before the camera is left in darkness.

Just as important as the visual cues that recognize the subjectivity of the hybrid being by changing to its perspective and incorporating it in a conversational shot is the sound design of the latter part of the scene, because it elicits large parts of its effect. On the one hand the splice can be heard cooing and warbling while it is bonding with Elsa – emitting a soundscape that encompasses animal noises like sniffing, clicking, and chirping as well as more vocalized sounds like bird calls or some similar to those of a human infant. These sounds invite our adoration, eliciting feelings of sympathy as we realize that it is hurt, frightened, and helpless. The animal/child noises are designed to emphasize the community of non-human and human in a scene strongly reminiscent of mother–child bonding or the care of young animals, as well as to provide a feeling of familiarity with the non-human. When Clive moves into the room and the splice feels threatened, though, the soundscape shifts dramatically to snarling, growling, and hissing. These sounds combined with defensive gestures, such as a display of jaws, crouching attack position, and prominent stinger movement, shift the atmosphere once more back to a tension, but this time our sympathies are divided. It is Clive that is acting in a threatening manner, disturbing the familial scene between Elsa and the splice. Clive is the intruder into this caring display and the splice's reaction seems normal, justified. The long dolly out away from the scared hybrid, screeching once more in confusion, and the door blackening the screen leave us emotionally sympathetic with the splice.

The film, in evoking both familiarity and repulsion, cinematically suggests that in the posthuman we see ourselves and the monstrous other at the same time, thus laying bare our notions of humanist subjectivity, while simultaneously inviting a posthuman *zoe*-centric subjectivity. This challenge to our established notion of subjectivity becomes even more prominent when the human DNA grows more dominant as the splice shifts, morphs, and changes according to its

hybridized genetic make-up. When her human side begins to show, Elsa names the splice Dren and starts to teach her as a mother would a human child, thus very strongly undercutting any anxieties about the monstrous nature of Dren and strengthening the sympathetic connection of the viewer with Dren.

Nevertheless, Dren remains unsettling whenever non-human aspects of her nature come to the fore. Here, it needs to be pointed out, though, that the non-human aspects cannot simply be grouped together as being 'animal' or 'animalistic.' In accordance with a human–animal studies perspective (in its approach close to critical posthumanism), one needs to consider 'the specificity of non-human animals, their nongeneric nature (which is why, as Derrida puts it, it is "asinine" to talk about "*the* Animal" in the singular)' (Wolfe, 'All Too Human' 567). The grouping of all animals (apart from the human) into a single category functions only to uphold humanist notions of singularity and difference. As Nik Taylor points out, 'similarity, difference, and significance' are ascribed to animals only extrinsically with regard to humans – 'constructing a hierarchy of animal importance' (3–4) that is used to justify different discourses for (and treatment of), for example, companion species and farm animals, or mammals on the one hand and amphibians, reptiles, and insects on the other.

Since Dren's genome is somewhat blindly engineered from eight different species – seven from the kingdom of Animalia (six vertebrates, one mollusk), one from Plantae – the film makes it obvious that no specific traits can be isolated and linked to one of the donor species. It's not a pick-and-mix process, where the geneticists decide upon a trait and implement it. The mutational power of the organism and the unpredictable influences of genes across different species are drastically enacted in the film with Ginger and Fred, who start out as female and male of their genetically created new species. Without the geneticists' knowledge Ginger exhibits the ability to transform gender, becoming a rival for Fred instead of a mate and resulting in a fight to the death. The scientists' (and the audience's) notion of applying anthropomorphic or anthropocentric categories, such as the male/female dichotomy, is revealed to be purely culturally constructed and irrelevant when confronted with the 'chaosmic' force of *zoe* (Braidotti 86).

Dren similarly exhibits features that Clive and Elsa have not intended to be 'in the mix' and cannot explain. When examining the splice for the first time and putting it in the MRI, Clive realizes, 'I don't even know what half of this is.' Elsa explains the unidentifiable physical features as expressions of 'rogue elements. Junk genes pushing through' and then examines the hybrid's tail:

Elsa presses a gloved-thumb beneath its tip and a SHARP SPIKE protrudes from a hood of skin. It drips with a sticky goo that Elsa smears onto a slide.

ELSA (CONT'D)

Some kind of self-defense mechanism.

CLIVE

Or attack venom.

ELSA

None of her animal components have predatory characteristics.

CLIVE

Well... there's the human element.

Elsa gives him a wry smirk. (Natali, Terry, and Taylor 34)

Dren's physicality is mysterious and thus monstrous, as Jeffrey Weinstock argues about the monster's appearance: 'it may reveal [...] the absence of a divine plan governing creation, as well as the limitations of human knowledge' (1). None of the original donor species in Dren's genome exhibits a poisonous stinger, defensive or predatory, and Clive's comment about the 'human element' only underscores the scientists' insecurity in explaining the 'epistemological threat of confronting that which should not be' (Weinstock 2). Not even human nature has been fully laid bare and scientifically explained, so Dren's features feel especially monstrous in their non-human excess. The film enacts this as an escalation of threatening transgressions of the natural order: first the inexplicable stinger, then the co-existence of lungs and gills (not existent in Dren's mammal, bird, or fish donors but only in amphibians), later the retractable wings made of webbing and not feathers, and finally the regenerative ability to regrow cut-off body parts and phenotypically express different genders.

But the film does not stop on the somatic level when presenting non-human animal features in Dren. Her behavioral patterns are similarly monstrous and it becomes clear throughout the film that Dren possesses uncanny cognitive abilities far beyond the human potential. Her non-human behavior is first presented within the confines of different animal behaviors. For example, she attacks Clive's brother when he sneaks into the storage room that Dren claims as her habitat, thus forcing her to exhibit strong territorial instincts. Again, the film does

not explain these as hereditary from any specific donor species, but none of the non-human animals exhibit this kind of behavior. The situation is diffused by Elsa ordering Dren harshly to her place and proving an animal hierarchy of alpha domination, which is just as non-existent in the original species.

A similar scene in which the film enacts Dren's monstrous behavior occurs when Clive and Elsa take Dren to her new home, the abandoned farm of Elsa's youth, and Dren escapes their custody, overwhelmed by her curiosity for the new environment. When the scientists finally find her, Dren has hunted a rabbit and eats it raw – looking up at them with blood covering her face and her hands full of entrails. Dren's inexplicable predatory side is unacceptable for Elsa, who resorts to imposing her own (human) values and norms on Dren for hunting the rabbit: 'That was bad. Bad Dren!' The human and the non-human clash and thus expose the genetically created posthuman as monstrous. Natural order has been severely disturbed and the result is frightening. What remains unexplained throughout the film is the origin of the monster and thus the origin of our fear and repulsion.

In terms of cinematography, the film seems to undercut the superimposition of humanist subjectivity on Dren, though: After the bunny incident, Dren stands in the hayloft, elevated by at least 12 feet, back turned to Elsa, who needs to crane her neck and keep a distance from Dren. The camera keeps the focus on Dren, shown in close-up, her facial features seeming to suggest she is pondering the verbal scolding with just as much curiosity as remorse (and this, of course, is a strongly 'humanized' interpretation). The light is also solely on Dren; Elsa's position in the frame is diminished by either the long focus or the darkness she stands in.

Adding irony to the scene is Elsa's jacket, which displays a white bunny on its lapel, right above her heart – involuntarily marking Elsa just as much as prey, foreshadowing that the power dynamics will radically turn. This is even more emphasized when Dren does not accept the human gesture of care, an offered blanket, but in an aggressive and sudden move jumps from the hayloft to a large tank of water, where she can stay thanks to her amphibious nature. The visual presentation of this scene here turns the linguistic assertion of human superiority ('Bad Dren!') around and establishes the posthuman as becoming-animal with a power to respond – this power for Derrida being at the crux of the central wrong of a humanist argumentation for a subjectivity, that 'the animal is without language. Or more precisely unable to respond, to respond with a response that could be precisely and rigorously distinguished from a reaction, the animal is without the right and power

to “respond” and hence without many other things that would be the property of man’ (400).

Splice positions Dren as a prime example of the complication of categories that the ‘subjection to and constitution in the materiality and technicity of a language that is always on the scene before we are, as a radically ahuman precondition for our subjectivity’ (Wolfe, ‘All Too Human’ 571), brings to the fore. If language – the semiotic system of response to other creatures – is supposed to draw boundaries of human and non-human, then Dren is the transgression of this boundary, a redefinition of the meaning of language, as Derrida describes it: ‘if one reinscribes language in a network of possibilities that do not merely encompass it but mark it irreducibly from the inside, everything changes. I am thinking in particular of the mark in general, of the trace, of iterability, of *différance*’ (cited in Wolfe, ‘All Too Human’ 571). The human/animal distinction is negated by Dren’s cognitive skills of response – her ability to express herself by using Scrabble tiles is not simply her human side affirming itself but a subversion of human linguistic superiority. When Elsa tests the hybrid’s cognition, she wants to assess not only iconic association (using an image of a teddy bear to associate with the real teddy bear) but also symbolic association using Scrabble tiles. She spells out her own name ‘E-L-S-A’ and taps her chest: ‘That’s me. Elsa. Show me Elsa!’ What she does not realize is that she gestures towards her T-shirt, imprinted with the company name ‘Nerd.’ When asked to show ‘Elsa,’ Dren responds with iconic association: After a short hesitation that possibly signifies the thought process in realizing the task, she swipes the superfluous letters aside and picks out the correct letters to spell out ‘N-E-R-D’, identifying the word on the T-shirt and thus undermining Elsa’s speech act, which superimposed on the already existing iconic semiotic sequence a symbolic one. Human language is revealed to be one of several possible systems of semiotic meaning production – and not the most logical at that.

Over the duration of the film, Dren’s cognitive abilities become more and more human-like and the film complicates the issue of a human/non-human distinction. She wears clothing, learns language skills (she spells ‘tedious’ to express her boredom), and is shown to mimic human behavior (expressing frustration by pounding on the table with her fists). She closely observes Clive and Elsa’s behavior, but whenever the film reveals her desires to be accepted and loved by the two parental figures, it also provides a complicating motion in the scene. In one scene, for example, she discovers a box of Elsa’s childhood things and the film humanizes her reaction as she realizes her separation from her ‘parent.’ *Splice* enacts physiological difference as a marker of exclusion: In Dren’s

case, Elsa's long blonde hair is singled out as a feature that connects her to other humans and a cultural tradition. Dren is excluded from that tradition and by extension also from any human lineage. In the scene, she finds a tiara and places it on her hairless head, and confirms its look in the mirror – observed with human expression as reference, Dren seems confused at the purpose of the tiara. Then she discovers the photograph of Elsa as a child, with her mother holding her. The strong family connection is enhanced by their embrace and their long, blonde hair, which seems to flow from mother to daughter in a straight line where their heads are touching. Lastly, Dren discovers a Barbie doll with long blonde hair, touches it, and then holds the doll to her face, stroking the blonde hair against her cheek.

Her look projects a certain longing, and the framing of the shot underscores this as Dren is staged in mirror images, reflections of her self through human self-obsessive cultural artifacts. Dren – the scene seems to promote this reading – realizes her exclusion from humanity because of her physiology. But the scene does not end here: Dren hears a cat and in a flash motion turns around, her interest completely taken over by the new discovery. She grabs the cat, swiftly runs with it into her hideout, and holds the cat up, staring right into its face. She studies the cat, looking similarly confused as before. She then cuddles with the cat, once more displaying a longing look. Taken together, the two parts of the scene reveal Dren's liminality and monstrosity. She does not fit the category of human, nor that of animal (as broad and inclusive as that may be otherwise presented in the film) – the scene thus does not humanize her longing for companionship but rather enacts and emphasizes her monstrosity, as Weiss argues: 'The logic of monsters is one of particulars, not essences. Each monster exists in a class by itself' (124). Dren's behavior is thus deliberately left indistinguishably human/non-human for most of the film.

But the film goes further in blurring the boundaries, even transgressing into uncanny realms of post- or superhuman ability. In a scene late in the movie, Clive is watching Dren through surveillance cameras. When he finds her, switching through different cameras, Dren is swimming in the tank and suddenly begins to perform a slow, sensual dance underwater, intently looking at the camera, showing off her body. Clive reacts with desire, intensifying his gaze, and reaching out with his hand towards the monitor. As his hand moves forward, Dren reaches out towards the camera, mirroring Clive's movement. The two hands seem to touch, a connection through the mediated image. Clive realizes the impossibility of the situation and jerks back his hand, slamming down the top of his laptop to rid himself of the

inexplicable image. The film here hints at the possibility that Dren might evolve beyond the capacity of natural human cognition without actually confirming or denying Clive's experience.

As I have shown, *Splice* deliberately presents the posthuman as monstrous in that it revels in the transgressive potential of a posthuman becoming-animal. Dren is a categorial hybrid and the metaphorical representation of *zoe*, of chaotic, forceful, and ever-adaptive life: protean, self-organizing, and adapting to its environment. She is evolving and changing, not just physically but cognitively. She is transgressive and post-anthropocentric in that she completely surpasses any categorization into human/animal, amphibian/avian/mammalian, male/female, natural/artificial. In Dren's monstrosity the film enacts twenty-first-century anxieties, fears, and insecurities, and as Levina and Bui argue, monstrosity becomes a '[process] of identification [for the viewer] [...] a fluid category concerned with representation and ambiguity of change' (5). The posthuman subjectivity is presented to the audience as an alternative; Dren's adaptability and instability regarding categories – as unnerving as it is – imagines 'change as a primary ontology of the twenty-first century' (Levina and Bui 7). *Splice* thus radically enacts a posthuman subjectivity 'of multiple belongings, as a relational subject constituted in and by multiplicity, that is to say a subject that works across differences and is also internally differentiated, but still grounded and accountable' (Braidotti 49).

4.2 Motherhood, Commitment, and Liquidity

The monster as embodiment of ambiguity, change, metamorphosis, mutation, and the fluidity of categories is thus an ideal representation of liquid modernity and its social anxieties of insecurity and unsafety, as imagined by Bauman. And as Jeffrey Cohen argues, monsters are specifically born 'as an embodiment of a certain cultural moment – of a time, a feeling, and a place'; their bodies are literal manifestations of the zeitgeist: 'The monstrous body is pure culture' (4).

Thus, as Natali has stated (see Captain) and as I have argued elsewhere (Schmeink, 'Frankenstein's Offspring'), *Splice* is a mythopoeic re-appropriation of the Frankenstein myth that is deeply connected to the zeitgeist of the twenty-first century. What is interesting about it, though, is that it emphasizes the familial bond at the heart of the original story and transports it into liquid modern society. Instead of *Frankenstein's* father/son relation, which most readers understand as a "“perverse;” “abnormal;” inverted, “debased;” against nature, “narcissistic” breach of

“the boundaries of the benevolent family” (Hirsch 125), the film explores a mother/daughter relation from a different outlook – that of the origin of the monstrous inherent in parent–child relations.

In terms of its science-fictional dimension of consequence, *Frankenstein* has, on the one hand, often been read as depicting an abnormal monstrous creation, which is a symptom of Victor’s gynophobia. On the other hand, the novel can be understood to emphasize ‘a failure of postpartum bonding’ (Hirsch 124), in that Victor does not provide ‘sustained guidance, influence, pity and support’ (Hustis 845; see Schmeink, ‘Mythos’ 235) for his infant-like creation and thus fails as a parent. *Splice* inserts itself into both arguments but adapts the discussion of family, procreation, and responsibility to liquid modern realities in consumer society. The first aspect of the thematic complex that Natali adapts to liquid modern reality is the idea that human procreation has become a specific market within consumer society and that human life itself is a commodity to be traded. Bauman argues that consumers will be able to change themselves and their offspring as they see fit: ‘Genomics and genetic engineering may be viewed as the ultimate dream of homo consumens, as breaking the last border in the modern consumer’s career, as the last, crowning stage in a long, tortuous yet in the end victorious struggle to expand consumer freedom’ (*Living* 143).

In the film, this is expressed broadly in Clive and Elsa’s motivation for creating Dren, driven by their desire to test their own limits, to create something new and unique – an individual and temporary life choice: When pitching their proposal for splicing human DNA into a new hybrid creature, Elsa argues that they are practically gift-wrapping ‘the medical breakthrough of the century’ for their employer, that they will be able to cure an array of severe illnesses such as Parkinson’s, diabetes, and even cancer. Confronted with the objection that policy and public opinion would not allow such research, and that moral outrage would immediately stop any work undertaken, Elsa coolly replies: ‘If we don’t use human DNA now, someone else will.’ When the CEO refuses the offer, Elsa and Clive decide they don’t want to work as practical engineers (i.e. finding applications for their research), mainly because that work would be tedious and do very little in terms of their reputation. They are more interested to follow the ideals of Bauman’s hunting utopia, in a constant search for new opportunities, new challenges, new options for their own life choices. Wanting to reap the glory of their work, they are now no longer interested in the practical consequences, but rather seek new ways to remain on top. Doing scientific grunt work for several years seems to neglect all of the thrilling new choices that developing the hybrid offers.

That the ethically more than dubious experiment with Dren has changed very little in terms of this drive towards new challenges, towards making more and more aspects of life part of consumption, is obvious at the end of the film, when the artificial birth and life cycle of Dren is evaluated in terms of economics and then replaced with the natural birth of a human–posthuman hybrid for the next round of commodification. As Braidotti argues, ‘advanced capitalism both invests and profits from the scientific and economic control and the commodification of all that lives’ (59). First, the company CEO explains that Dren has turned out ‘to be a cauldron of unimaginable chemical mysteries,’ which will have the company ‘filing patents for years.’ The death of the posthuman thus becomes economic opportunity for its owners – the multinational pharmaceutical company. In this, the treatment of human and posthuman bodies echoes the commodification of *zoe* in both Atwood’s MaddAddam trilogy and Bacigalupi’s Windup stories, as discussed in the last chapter. Second, Elsa’s pregnancy, which she signs away to the company’s research machinery, is then ‘the next stage’ in this ultimate commodification of Life. Elsa’s words ‘What’s the worst that could happen?’ have repeatedly framed the experiences of the film and are here ironic commentary about the continuation of the consumption process. In the script, different words downplay Elsa’s resignation and rather emphasize her conviction: ‘This is what I want,’ she says, before giving in to the company’s (in the form of its CEO’s) ‘motherly embrace’ (Natali, Terry, and Taylor 113).

Wanting a child and taking responsibility for it as a life-long commitment is then the second aspect of this thematic complex challenged by the film. In liquid modern times and consumer society, as Bauman argues, children are just as much objects of consumption, in this case of an emotional nature:

Objects of consumption serve the needs, desires or wishes of the consumer; so do children. Children are wanted for the joys of the parental pleasures it is hoped they will bring – the kinds of joys no other object of consumption, however ingenious and sophisticated, can offer. To the sadness of the practitioners of commerce, the commodity market cannot supply worthy substitutes, though the sorrow finds some compensation in the ever-expanding place the world of commerce gains in the production and maintenance of the real thing. (*Liquid Love* 42)

But Bauman’s argument goes further, for the emotional consumption of children is problematic for a society that cherishes freedom of choice and flexibility of movement and keeps constantly changing, sampling

life choices instead of fully committing to one. Consumers might not like the 'strings-attached' aspect of parenthood:

'Creating a family' is like jumping headlong into uncharted waters of unfathomed depth. Forfeiting or postponing other seductive consumer joys of an attraction as yet untried, unknown and impossible to predict, itself an awesome sacrifice stridently jarring with the habits of a prudent consumer, is not its only likely consequence [...] One may become, horror of horrors, 'dependent'. Having children may mean the need to lower one's professional ambitions, to 'sacrifice a career' [...] Most painfully, having children means accepting such loyalty-dividing dependence for an indefinite time, entering an open-ended and irrevocable commitment with no 'until further notice' clause attached; the kind of obligation that goes against the grain of liquid modern life politics and which most people at most times zealously avoid in the other manifestations of their lives. (*Liquid Love* 43)

Splice then interjects at exactly this point of discussion in exemplifying an alternative to natural/traditional parenthood: posthuman genetic creation. In terms of natural procreation, Elsa makes it very clear that she is not ready to have a child and accept the responsibility that goes with it: 'I don't want to bend my life to some third party that does not even exist yet.' 'What's the worst that could happen?' Clive asks and Elsa deflects the question, which reemerges in the film several times, a running gag until its final utterance in the CEO's office on both parenting and the scientific endeavors undertaken. The liquid modern horror of continuous commitment looms large in this discussion – and in the film – as Jonathan Romney points out in his review:

The film is very funny in its dark jokes about parenthood and the horrible dawning realisations that come with the job: that babies are very noisy, demand endless attention and totally mess up your work habits. The funniest line – 'We're biochemists, we can handle this' – could speak for the delusion of all new parents that no small, helpless creature could possibly be that hard to manage.

Elsa's rejection of natural parenthood is based in her suffering massive abuse as a child at the hands of an overly controlling and yet powerless parent. She strongly resents the power relations of the parent-child dynamic as well as the underlying issue of the controllability of the child. The only natural parental relation the film describes is thus abusive,

transgressive, even monstrous in its own right, leaving Elsa terrified about any such commitment of her own.

As an alternative, she prefers the rigorously regimented scientific experiment, which she has power over and which does not come 'in a package deal with the sorrows of self-sacrifice and the fears of unexplored dangers' (Bauman, *Liquid Love* 44) – or so she believes. And in a sense, this is true for the beginning of the film, which shows Clive and Elsa as 'parents' of Fred and Ginger. The birth of Fred opens the film and already sets up the dichotomies of experiment/child, of scientific research/parenthood. We are introduced to Clive and Elsa via a subjective camera emerging from darkness to extreme light, then shifting to a fish-eye view of the creature. During the first minutes, the creature painfully struggles to life, the camerawork and editing of the scene deliberately staying close to the infants' experiences. For a few moments survival is uncertain. The scene ends with Clive and Elsa placing the creature in an incubator, removing their masks and smiling down on their 'child.' The attitude of both parents then markedly announces a gender role inversion: Elsa coldly and scientifically states, 'No physical discrepancies,' allowing herself only a faint smile. Clive, on the other hand, bears a wide grin and emotionally proclaims, 'It's perfect!' The scene establishes the central conceit of the film: In techno-scientific culture, genetic splicing may replace pregnancy and childbirth, the scientists thus become 'parents,' and the ethics of scientific conduct problematically merge with the ethics of childrearing.

And whereas Clive expressed interest in having children with Elsa, during the artificial procreative process, it is his voice in the early stages that counsels against carrying out the experiment. After having created a successful splice, Elsa overrides Clive's objections ('We will go to jail for this!') and prepares the injection, arguing that they both need to know if they are scientifically able to create hybrid life: 'We won't take it to term. We just need to find out if we can generate a sustainable embryo. Then we destroy it. Nobody will ever know.' When Clive wants to abort the experiment later on, showing empathy for the creature ('Do you think it is in pain? [...] It's not formed right'), Elsa again argues in scientific terms that they can learn more, get data on the 'sustainability' of genetically engineered life.

This emotional struggle repeats, but Elsa becomes more and more confused between science and parenthood. For example, after Elsa ignores safety protocols and makes contact with the splice, Clive gets her out of the room, before a fight erupts about the hybrid's fate. Clive wants to terminate the experiment and kill it, but Elsa has already become more emotionally attached than she would like to admit to

herself: 'We can't do that! Look at it!' she exclaims and sedates it instead, once more hiding behind scientific curiosity as a motivation to keep the experiment running. The scene ends with a cross-cut between the splice's slow struggle against the gas, its helpless bouncing around the room, falling to the floor and labored breathing, and an extreme close-up on Elsa's emotional reaction, shot from behind, angled so as to only reveal her in partial profile on the right edge of the screen before a black background, glancing coldly but intensely at the splice and at last swallowing down hard her own discomfort with the situation. Both editing and composition here suggest Elsa's attempt to detach herself from the emotional responsibility for the life in front of her – which is later in the film revealed to be her own biological offspring. Sarah Polley's acting in this scene is minimalistic, showing strong emotional restraint and thus revealing Elsa's failed attempt at distancing. Already at this stage, Elsa's scientific distance and neutrality have been supplanted by feelings of motherhood and emotional attachment – all notions of control, objectivity, and liquid modern fluidity have fallen away.

As Dren grows, she more and more becomes Elsa's surrogate child. At this point, Elsa's acceptance of Dren's human subjectivity is still contrasted with Clive's continuous attempts at distancing, but the ethical argumentation has switched and he now tries to uphold scientific neutrality, scolding Elsa for letting Dren out of the lab: 'Specimens need to be contained,' he argues. Elsa is horrified and exclaims: 'Don't call her that! [...] Her name is Dren.' Elsa, blinded by motherly love, cannot see Dren as an experiment any longer and completely falls for the emotional commodity of having a child.

When Dren starts exhibiting rapidly growing needs in regard to movement, interaction, and emotional relations, the parental bonds start to shift. As Bauman argues, in liquid modern consumer society, commodities only have a certain lifespan before they are discarded and replaced: 'The usability of the goods as a rule outlives their usefulness to the consumer. But if used repeatedly, the purchased commodity thwarts the search for variety, and with each successive use the veneer of novelty rubs away and wipes off' (*Liquid Love* 50). With Dren becoming more and more independent, starting to exhibit more complex human traits, the mother/daughter relationship loses its emotional appeal for Elsa and she is growingly frustrated with her 'purchased good.'

Whereas Elsa had strong motherly feelings as long as Dren was small, she now feels like she is losing control of Dren. After Dren throws a fit, demanding freedom, Elsa becomes overbearing, aggressively pushing and hitting Dren into the role of the inferior. 'She is getting so hard to control,' Elsa realizes. From here on out, Elsa's 'parenting' becomes

more and more erratic, with Elsa sometimes trying to bond (by teaching Dren about make-up), and in the next moment exerting fierce control (taking away Dren's pet). It is Clive, who rejected the 'experiment' and did not bond with the small child, who now takes on the role of caring parent and tells the insecure, emotionally unstable Dren what she needs to hear: 'Dren, we need you. ... Dren, we love you!'

The situation escalates completely when Elsa tries to make a last attempt at consoling the angered and frustrated Dren by confirming the biological connection to her and bringing a gift. Elsa and Dren face each other in the barn, and Elsa soothingly says: 'You're a part of me. And I'm a part of you ... I'm inside you,' thus admitting to Dren her human heritage and the parental relation, which Elsa through her violent outburst had just proven broken. Bauman argues that in liquid modernity, when human bonds become frail and easily untied, when stability and security might be negated by the person you love, then life becomes a 'daily rehearsal of death and of "life after death"' (*Liquid Fear* 44) as the loss of human bonds becomes the daily experienced simulacrum of the final loss of life. Elsa's words are thus doubly hurtful, confirming Elsa's genetic dominance (through parental lineage) and betrayal (in the easily cast aside human bond) at the same time.

In a gesture that feels like appeasement of parental guilt, Elsa then presents Dren with the cat that she (Elsa) had taken away during their altercation earlier. While handing the cat to Dren, Elsa says: 'You can keep her. Why not? It's nice to have a pet.' Her words clearly reveal her feelings of human superiority, reminding the audience (and Dren) of the hierarchy embedded in human-animal discourse and the human-related function that animals fulfill. It is also a doubling of Clive's words of warning, when he finds her too closely bonding with Dren: 'You're talking like ... You're treating her like she's a ... a pet.' Elsa's words thus reveal the categorial problem at the heart of her relationship to Dren: scientist and experiment, owner and pet, or mother and daughter? Dren reveals her understanding of the situation by looking Elsa in the eyes and then killing the cat violently with her poisonous stinger. She then attacks Elsa, proving her posthuman physical superiority and asserting her right to freedom by taking the key to the barn. The film conveys the shifting power relation here by providing an intimate close-up of the overwhelmed Elsa on the ground, Dren leaning over her and threatening her with the stinger. The scene flaunts the irony of the mother-daughter intimacy that Elsa wanted to evoke and through the prominence and threat of the stinger turns it into outright rebellion. In the end, Elsa has to once more resort to violence, this time in extreme measure, to capture Dren.



Dren literally has the upper hand against Elsa
(screenshot: *Splice*, © Universum, 2010).

Realizing her new emotional ‘dependence’ (and inferiority), Elsa rejects her role as parent completely and reverts to a purely scientific position, reclaiming control over her experiment with full force. Just like Victor Frankenstein when he wants to destroy the monster, Elsa exercises her ‘right’ to curtail the experiment – literally. She determines that Dren is exhibiting ‘erratic behavior’ due to a ‘disproportionate species identification’ and that Dren needs to be dehumanized. Elsa restrains Dren on the examination table, psychologically humiliates her (by forcefully removing her clothing), and in the end even physically maims her by cutting off her stinger – all in the name of science and a desperate need for control. During the whole scene, the script describes Elsa as ‘utterly devoid of emotion,’ ‘detached, clinical,’ and having a ‘frigid disregard’ (Natali, Terry, and Taylor 91–92) for Dren’s feelings of terror.

But Elsa’s drastic act of parental transgression is not the only one. When Dren starts to show strong sexual desire for Clive, he cannot resist and gives in (more on this below). The scene is extremely disturbing in its implications as we read a complex brew of ethical transgressions in Clive’s behavior. Elsa, who discovers them, and Clive later realize that their violations of Dren have been too numerous, that they have failed on many levels. Both realize that as parents their relationship with Dren is broken – they have abused her, maimed her, transgressed any parent/child boundary – but that as a scientific experiment there is a solution to the situation and to their responsibility: ‘The experiment is over, responsibilities end.’

In using the biopunk metaphor of the posthuman genetic creation, the film intelligently conflates scientific experimentation with parenthood

and reveals liquid modern anxieties about the monstrousness of becoming a parent: Children are incomplete, are ambiguous in their potential to find subjectivity, continuously change and adapt; they are the 'abjected fragment that enables the formation of all kinds of identities – personal, national, cultural, economic, sexual, psychological, universal, particular' (J. Cohen 19). On the other hand, children are monstrous in that they are reminders of what is prohibited in liquid modernity, 'polic[ing] the borders of the possible, interdicting through [their] grotesque bod[ies] some behaviors and actions, envaluing others' (J. Cohen 6). In liquid modernity, the concept of parenthood becomes representative of inconvenience, inertia, rigidity, and the loss of choice. In a world that shuns any form of dependence, Bauman says,

motherhood, conception, birth, and all that follows them (such as, for instance, an indefinite marital/parental commitment, a prospect of children being loved and cared for ad infinitum at a price and self-sacrifice impossible to calculate in advance), are not just a narrow fissure in the cocoon that was promised and craved, but a wide hole, impossible to stop up; a hole through which contingency, accident and fate, so deeply resented, might flow into the interior of the fortress that had been laboriously built and lavishly armed in order to keep them outside its walls. (*Living* 122)

The film presents this self-sacrifice by using the posthuman splice as a surrogate child. The compressed nature of Dren's life cycle allows the film the unique opportunity to heighten the emotions of parenthood, the dependencies and, of course, the accidents and contingencies. The selfish-individualistic lives of Elsa and Clive are completely shattered; their liquid modern 'fortress' of convenience evaporates. And just as Frankenstein had to pay the price for his hubris and neglect, so do Elsa and Clive. After having decided to end the experiment, they return to the farm, only to find Dren dying. They bury her, not realizing that the next mutational cycle in her evolution begins with her death (as some others before had done too). Dren emerges radically changed from this process, having switched genotypic expressions of biological sex, becoming what the audience (from a binary view) perceives to be male and growing much more aggressive, territorial, and predatory in the process. The new Dren then goes on to eliminate all perceived threats, that is, killing anyone that might challenge his dominance over the territory. This includes, in the final battle between Dren and the scientist couple, impaling Clive with a final blow from the stinger, before being killed himself by Elsa in a desperate struggle to survive.

4.3 Monstrous Sexuality and Perversion

The splice is not only a cultural metaphor for childrearing turned monstrous; also and even more chillingly it comments on another aspect of human bonding that has shifted in meaning with the advent of biotechnology and genetic engineering. As Bauman states, in liquid modernity ‘medicine competes with sex [...] for the charge over “reproduction”’ (*Liquid Love* 40) – and clearly medicine has partnered up with technoscience to win the competition. In effect, in the biopunk depiction of the film, Bauman’s vision for a near future has fully come true, with all its consequences: genetic engineering makes possible a complete and utter ‘emancipation of procreation from sex’ (*Living* 123).

In Elsa and Clive’s relationship this separation has become a dominant factor, as their procreation becomes technologically enhanced and fully automated through genetic engineering. On the other side of this demarcation line, their sex life has become a mere commodity that they forget about, getting lost in their many other life choices. As Volkmar Sigusch announces, *ars erotica* is not an achievement of liquid modernity: ‘Today, sexuality no longer epitomizes the potential for pleasure and happiness. It is no longer mystified, positively, as ecstasy and transgression, but negatively instead, as the source of oppression, inequality, violence, abuse, and deadly infection’ (cited in Bauman, *Liquid Love* 39). In Clive and Elsa’s life, sex has been completely de-coupled from reproduction and lost its central appeal. The only scene in the film that depicts the couple having sex with each other emphasizes this de-coupling, first by their own realization that sexual attraction has not existed between them for a while (‘It’s been a long time,’ Clive says. ‘Oh God. I didn’t even notice,’ is Elsa’s reply) and then by Elsa’s joking (but ironically fitting) explanation that this is what happens when couples ‘work too hard.’ It is also fitting, then, that their intercourse in this scene is marked as a resurgence of old cultural associations with sex (reproduction, long-term commitment), because it temporarily restores the capacity to produce offspring: ‘I don’t have any ...’ Clive admits (meaning condoms), and Elsa answers jokingly: ‘What’s the worst that could happen?’ Clive turns away, frowning upon the answer, but still accepts the seductive act. But their sexuality becomes transgressive as Clive realizes that Dren is watching them. Before he can react, he and Elsa climax, and he cannot see Dren anymore – for a moment a doubt lingers whether Dren was there or not. In the script, the scene is more explicit in its sexually deviant feelings, at which the movie only hints: ‘Clive is about to put a stop to their passion when something catches his eye [...] He sees her. Dren. Peering through the curtains. [...] The

moment is surreal. Clive continues to watch Dren watching. He says nothing. Sexual momentum builds. Strangeness' (Natali, Terry, and Taylor 62). After Elsa tells him that she is willing to risk pregnancy, the script suggests, Clive is unwilling to go on having sex, but seeing Dren arouses him. The sexual momentum is based on a potential transgression, on the promise of an act that is intensely complex, shaded with infidelity, incest, pedophilia, and bestiality.

In this, the film emphasizes Dren as transgressive, posthuman, and 'chaosmic' and once more as monstrous, embodying 'those sexual practices that must not be committed, or that may be committed only through the body of the monster' (J. Cohen 14). The film presents this monstrous sexuality in a drastic doubling, enacting the monster both as 'too sexual, perversely erotic, a lawbreaker [...] [that] must be exiled or destroyed' and as desirable 'fantasy' through which transgressions 'are allowed safe expression' (J. Cohen 16–17).

In her article on 'transgressive sexuality,' Patricia MacCormack argues that perversion is a transformative tactic of becoming, a potential to subvert 'presumptions of subjects conforming to established subject positions, genders and sexualities rather than simply a deviation from heterosexual intercourse.' Perversion is a destabilizing tactic similar to posthumanism and monstrosity, embracing a hybridized and flexible 'becoming' of the body, represented in sexual desire: 'Theorising the body as existing not purely as a spatial subject, but in time as a series of open reconfigurations and constant change suggests other ways of understanding the self and the subject as being in permanent flux' (MacCormack).

Dren's sexuality is perverse in MacCormack's sense: it is a monstrous sexuality that enables the film to destabilize normative subjectivity. Key to this monstrosity is that Dren's biology, reminiscent of Braidotti's definition of the monstrous, is 'in between, the mixed, the ambivalent,' making Dren 'both horrible and wonderful, object of aberration and adoration' (Braidotti cited in MacCormack). As discussed above, Dren is categorically instable in terms of her species, incorporating parts of non-human animals.

When Clive gives in to his desires and has sex with Dren, the film highlights her non-human biology. She appears behind Clive, with wings extended, and embraces him. Then she pushes him against the water tank, with her kangaroo-like hind legs pinning him in and her tail balancing out her body. Clive looks at the odd angle of the leg with fascination, then struggles out of his clothes, helped along by Dren with her feet while he mounts her. When Dren sits on top of him, she stretches out her arms and her webbed wings extend to full



Dren's non-human animal nature takes over during the sexual act with Clive (screenshot: *Splice*, © Universum, 2010).

spread. Clive is enthralled and unbelieving. He rolls her over, pushing into her. The camera focuses on Clive from below, with Dren's tail seen behind and above him, emphasizing the regeneration of her stinger, which hovers threateningly above Clive while he climaxes. Horror and fascination are closely linked in this scene, enacted in the non-human biology of Dren.

In addition to the non-human sexuality enacted here, the film also hints at the transgression and monstrosity within the complex triad of infidelity (Clive is cheating on Elsa with Dren), pedophilia (technically speaking Dren is a child, only a few weeks old – even though her physiological development is that of a teenage girl), and incest (at least culturally, Dren is Clive's daughter).

In drawing upon the work of Claude Lévi-Strauss, Bauman remarks that 'the birth of culture' is strongly tied up with 'the prohibition of incest,' and that the ban on having sex within a biological family was an attempt to 'impose on Nature a distinction which Nature itself had failed to make and would not acknowledge' (*Living* 122) – a cultural demarcation that was supposed to facilitate order and control. When Clive realizes Dren's genetic make-up includes Elsa's DNA, the cultural boundaries seem to evaporate. Seeing aspects of the woman he fell in love with in Dren confuses him. Culturally, he has been acting as a father surrogate to Dren, which would morally foreclose any sexual desire. But biologically he is not related to Dren, and her genetic resemblance to Elsa further enhances his desire – for him, thus, sex has become re-infused

with 'emotion, ecstasy and metaphysics from which the seductive power of sex used to flow' (Bauman, *Liquid Love* 47).

As the avatar for metamorphosis, the monster literally becomes the secondary body through which to safely express transgression, a body offering 'an alluring projection of (an Other) self' (J. Cohen 17) for Clive and for the audience. Incest here is revealed as a cultural imposition based in taboos and mandates that regulate, structure, and limit life force. The monstrous acts as a reminder that *zoe*-centric subjectivity negates cultural boundaries. Displaying sexual perversion in this way 'acknowledges the instability of the integrity of the subject,' as MacCormack has pointed out: 'Through the destabilising effects of pleasure and perversion subjectivity shifts away from being defined through what it is [...] and is more appropriately addressed through what it does and what is done to it.' Clive and Dren's desire for each other subverts the subjective positions we ascribe to them – they are no longer limited by their relation as father/daughter, human/non-human, scientist/experiment.

Splice nevertheless does not simply equate the monstrous with a repressed and transgressive desire, but rather embraces its inherent protean nature: The monstrous is both vicarious transgressor and enforcer of boundaries. In its policing function lies its potential for dystopian warning, as Jeffrey Cohen argues: 'As a vehicle of prohibition, the monster most often arises to enforce the laws of exogamy, both the incest taboo [...] and the decrees against interracial sexual mingling' (15). The monster as enforcer of boundaries functions as warning against the dystopian consequences that a science-fictional reality of posthuman genetic engineering will bring. Its origin story is a reminder that scientific hubris brings forth horror and destruction. Dren is the ultimate product of xenogenesis and thus the metaphoric monstrous transgressor of technoscience. Dren attempts to kill anyone involved in the process of breaking the taboo, thus direly warning against any such transgression. But in engaging in one last monstrous act, in once more breaking the incest taboo, this time from both a biological and a cultural perspective, by raping Elsa, the genetic parent, Dren also firmly establishes that monsters always escape and return in the form of new life. Even though Dren is killed, Elsa is pregnant with Dren's child and thus the monstrous lives on. Monsters are never fully muted, as they are manifestations of the repressed. As a dystopian warning, then, they are ideally adapted to the liquid modern present.

As I have shown, *Splice* engages the posthuman as monstrous, depicts it as becoming-animal, and adapting to a *zoe*-centric subjectivity that undermines the humanist notion of superiority of the species. Further, the

film reveals the monstrous as inherent ontology of twenty-first-century liquid modern reality. Evaporating human bonds, technologically assisted childbirth, the separation of sex from procreation, an incompatibility between parenthood and individualistic life choices, and the commodification of children are aspects of the posthuman becoming-monster. The monster in *Splice* thus simultaneously stands for the posthuman utopian possibility of an alternative subjectivity and for the dystopian reminder that such science-fictional transgressions bring with them consequences that cannot be ignored. As Jeffrey Cohen points out, 'monsters must be examined within the intricate matrix of relations (social, cultural, and literary-historical) that generate them' (5). In Vincenzo Natali's adaptation of the nineteenth-century Frankenstein myth of artificial human creation in terms of a twenty-first-century biopunk cultural formation, the posthuman thus hints at the inseparable connection of the science-fictional dimension of possibility with its counterweight dimension of consequence.

Individuality, Choice, and Genetic Manipulation

Freedom of choice above everything, for everything, even for genes! Genetic choice will bring a new era of freedom! (Beck-Gernsheim 143)

Attributing this epigraph to German sociologist Elisabeth Beck-Gernsheim is a bit misleading, as she marks these words not as her own opinion, but rather as a poignant and slightly ironic commentary on *The Economist*, which in its cover article in April 1992 claimed that ‘Changing Your Genes’ should by right be within the grasp of the individual:

Should people be able to retrofit themselves with extra neurotransmitters, to enhance various mental powers? Or to change the colour of their skin? Or to help them run faster, or lift heavier weights? Yes, they should. Within some limits, people have a right to make what they want of their lives. The limits should disallow alterations clearly likely to cause harm to others [...] Minimal constraint is as good a principle in genetic law as in any other. (11–12)

The article passionately argues for a libertarian stance in regard to genetic engineering and the right of the individual to decide his or her own fate – genetically as well as socio-politically. The text concludes with a snide remark on Sigmund Freud’s claim that ‘Biology is destiny’: ‘The proper goal is to allow people as much choice as possible about what they do. To this end, making genes instruments of such freedom, rather than limits upon it, is a great step forward. With apologies to Freud, biology will be best when it is a matter of choice’ (‘Changing Your Genes’ 12).

Beck-Gernsheim uses the article and its veneration of individual genetic engineering as an example of how the concept of health has,

under posthuman technoscience, become expanded to mean not simply the maintenance of functioning human biology but the shaping of one's genetic raw material to one's desire: 'Biology, understood as the basic genetic endowment, is no longer destiny but starting point. Expectations of indefinite change and improvement are now the order of the day' (Beck-Gernsheim 143). Health is no longer a necessity for survival in a social group that depends on it, but rather a lifestyle choice, the body becoming a work of art or a demonstration of scientific possibilities. As Anthony Giddens argues, 'In the spheres of biological reproduction, genetic engineering and medical interventions of many sorts, the body is becoming a phenomenon of choices and options' (8).

As such, Beck-Gernsheim claims, the option to genetically engineer the body into becoming posthuman is another instance of modernity's drive towards 'individualization,' a mechanism of liquid modernity that 'tells us to seek *biographical solutions to systemic contradictions*' (Beck and Beck-Gernsheim xxii). Individualization in this sociological sense, as opposed to the neoliberal usage of the word, refers to an institutional(ized) imbalance, which leaves the individual disembedded from secure social institutions but faced with growing global risks:

Opportunities, dangers, biographical uncertainties that were earlier predefined within the family association, the village community, or by recourse to the rules of social estates or classes, must now be perceived, interpreted, decided and processed by individuals themselves. The consequences – opportunities and burdens alike – are shifted onto individuals who, naturally, in face of the complexity of social interconnections, are often unable to take the necessary decisions in a properly founded way, by considering interests, morality and consequences. (Beck and Beck-Gernsheim 4)

Individuality is thus not a choice based on self-assertion, gained by taking control over one's fate, and living to one's desires. Instead, as Bauman emphatically argues, individualization is a fate that positions the 'modernizing impulse, [...] the compulsive critique of reality' as a 'compulsive *self*-critique born of perpetual self-disaffection: being an individual *de jure* means having no one to blame for one's own misery, seeking the causes of one's own defeats nowhere except in one's own indolence and sloth, and looking for no remedies other than trying harder and harder still' (*Liquid Modernity* 38).

The achievement of human identity, something that in pre-modern and even early, solid modern times had been a 'given,' has in liquid modernity been transformed into a 'task,' with responsibility handed

over to the individual. Autonomy, choice, and self-assertion have become essential aspects of every individual's life project, elements stated as fact and used in search for identity – not just one fixed and embedded identity, but options and choices of identity, never settling but always fluid (Bauman, *Individualized Society* 140–48). This search for identity in times of consumer society and with the advent of genetic engineering is not limited to social positions, jobs, partnerships, and so on; it includes posthuman development as well, leaving the formation of a new and better self to the individual (see Bauman, *Living* 148).

There is a noticeable gap, then, between liquid modern insistence on individuality, autonomy, and self-assertion on the one hand and the systemic risks and contradictions involved in achieving such conditions, caused by globalized flow of information, technology, and politics (e.g. network society, the Anthropocene, posthumanism), on the other. It is this gap that is at the heart of my argument in the analysis of the highly successful 2007 video game *BioShock*¹ in this chapter. Science fiction as a genre here allows for the extrapolation and exaggeration of this gap by employing the posthuman as an extreme of human identity. The dystopian leaning of the narrative opens up the possibility of a bleak emphasis of the science-fictional dimension of consequence in terms of this development, whereas the medium of the video game uniquely provides the specific ideological commentary on the systemic nature of an illusion of autonomy, especially in liquid modern consumer society.

5.1 Objectivist Utopia and Posthuman Dystopia

BioShock is an extraordinary video game not so much because of any genuinely innovative gameplay or boundary-breaking new technologies – these aspects are quite unspectacular, even, the game employing a simple first-person shooter scenario. Rather the game has been given some of the highest rankings in game history and won several 'best game' awards² because of its detailed, nostalgic, and unique aesthetics,

¹ *BioShock* has since spawned a whole franchise of products: the full-length video games *BioShock 2* (2k Games, 2010) and *BioShock: Infinite* (2k Games, 2013), several add-ons for all three games in the series, an alternate-reality game as part of the marketing campaign of *BioShock 2* (*There Is Something in the Sea*, 2009), a novel written by John Shirley (*BioShock: Rapture*, 2011), and even the plan for a film (which was subsequently cancelled).

² For a detailed analysis of rankings and awards the game has received, see the '*BioShock*' entries at www.wikipedia.com, www.gamerankings.com, and www.metacritics.com.

taking place in an underwater city in an alternate history of 1960, as well as its intricate narrative storyline, which – surprisingly for a video game – has overt philosophical leanings. When Ken Levine, the creative director behind *BioShock*, announced the game roughly a year before its release, he thanked his ‘useless liberal arts degree’ for providing the literary inspiration for the game and referenced the ‘sort of utopian and dystopian writings of the 20th century [...] [such as] Huxley, Orwell and Rand’ (cited in Perry) as the main motivation for the storyline. Especially, the game’s connection to Ayn Rand’s philosophy of objectivism and the intertextual reference to her novel *Atlas Shrugged* (1957) have been explored both journalistically (see McCutcheon; Sinclair; Bray) and critically (see Aldred and Greenspan; Hourigan; Kennedy; Packer; Tulloch).

As already mentioned, in terms of main game mechanics, *BioShock* is a first-person game, in which the visual non-existence of the avatar (aside from the weapon held) leads to what Britta Neitzel calls a ‘subjective perspective’ (194). Most players feel a stronger identification with the character (see Galloway, chapter 2; Rehak; Kennedy) than that experienced with other perspectives. Tanya Krzywinska stresses that with first-person perspective in horror video games, the ‘increased visual proximity to what lurks within such shadowy places, heighten[s] the sense of contact’ and creates in the player feelings of ‘disquietude and tension’ (‘Hands’ 210).

The game begins with the protagonist Jack – the player’s avatar³ – sitting on a plane, which shortly thereafter crashes into the ocean. Jack is the only survivor, rescued from drowning by his discovery of a tiny island with a lighthouse. Here, he accesses a bathysphere (a small spherical deep-sea submersible), which brings him to the underwater city of Rapture, hidden from the world and built as a utopian safe haven for meritocratic idealists. But upon arrival, Jack discovers that something has gone terribly wrong and that Rapture has instead become a corpse-strewn prison for the remaining grotesque, mutated, and violent inhabitants. In order to survive, Jack has to navigate the bizarre landscape of Rapture, kill the mutated citizens, and escape the underwater prison. The game’s narrative follows Jack on his way

³ In my description of game scenes, I will refer to ‘Jack’ whenever (re)actions occur in-game, even though these are triggered and enacted by the player and will usually also have some influence on them in terms of emotional response. But I will limit myself to the use of ‘the player’ whenever I want to stress specifically the emotional reactions outside of the gamespace, for example in regard to ethical decisions or ideological judgment.

through Rapture, but allows the player to experience several story arcs that comprise the backstory of the city's creation and subsequent fall into ruin. These arcs are presented in-game as intradiegetic narration either by conversations with the (more or less) human inhabitants of Rapture or mostly by recovered audio diaries on tape.

Industrialist Andrew Ryan constructed Rapture after the Second World War as a libertarian, objectivist utopia to escape societal and governmental regulations. The city was supposed to be home to industrialists, scientists, artists – generally the best and brightest of society – who should then create and live beyond the grasp of sovereign systems of control (such as the state, social welfare, or the church). But the meritocratic society was challenged by raging elitism and social unrest, as the necessary menial labor created a growing underclass. On the one hand, the city's inhabitants succeeded in incredible feats of scientific research and industrial manufacturing – their greatest discovery a sea slug that contains the key to targeted genetic engineering. By manufacturing specific stem-cell therapies as a commodity called 'plasmids' and advertising them as 'Evolution in a bottle!' (in-game ad), the city's society soon turned into an unregulated consumer market for gene enhancements that facilitate superhuman powers such as mind control, pyrokinesis, or pheromone manipulation.

On the other hand, the limited availability of the natural resource (stem cells from the slug, refined into a potent brew called 'ADAM') necessary for this genetic transformation caused the already divided society to erupt in a civil war over the control of ADAM and the plasmids. Widespread plasmid abuse led to side effects such as mutation, physical deformity, and mental instability, which in turn led to more violent reactions, to withdrawal, and to a more aggressive acquisition of further ADAM. The resulting creatures, called 'splicers' due to their spliced genetic make-up, are intelligent, driven, and cannibalistic – high-functioning zombies out for ADAM, which can be extracted from human bodies, dead or alive.

As I have noted elsewhere, *BioShock* presents the player with two worldviews via historical embedding: the objectivist utopian enclave of 1946 (through the use of the audio diaries and the remaining aesthetic components of Rapture), which is narratively reassembled from the ruined city, and the posthuman dystopian reality of a diegetic alternate history of 1960: 'Because the game's setting fatally collapses the utopian impulse into a posthuman dystopia and buries it in history, the player reconsiders, reflects and meditates on reasons, possibilities and choices that led to this dystopian turn' (Schmeink, 'Dystopia').

As such, *BioShock*, more than any academic essay or journalistic criticism, can be understood as a fitting and effective critique of

Atlas Shrugged and Rand's philosophy, as the game engages it in a format that achieved a similar level of creativity and popularity as the original novel, which is the basis for the success of objectivism: 'Although Rand wrote scholarly work on Objectivist thought, it was her perennial best-selling novels that are largely responsible for her enduring popularity' (Packer 208). This popularity is so immense and relevant, even today, that the *Wall Street Journal's* Stephen Moore openly wished that *Atlas* would become 'required reading' for politicians and business leaders, blaming for example the Obama administration for not heeding Rand's advice and ultimately stalling economic growth in the current financial crises. Conservative journal *The Economist* even lauds Rand as 'Capitalism's martyred hero' ('The Life') and Terry Teachout of the *National Review* argues that her larger-than-life black-and-white dramatization of libertarianism is 'so well suited to the needs of the "frustrated adolescent in search of fresh ideas"' that it is no wonder *Atlas* is, according to the Library of Congress, the second most influential book in the lives of the American audience after the Bible (Teachout 46).

Rand's philosophy of libertarian laissez-faire capitalism and the promotion of self-interest to civic duty as its highest value, as witnessed by the oath of objectivist principles ('I swear by my life and my love of it that I will never live for the sake of another man, nor ask another man to live for mine'; *Atlas* 731), are thus idealized forms of the individualization claimed by Beck, Bauman, and others to be pervasive in liquid or second modernity. All aspects of life have become tasks and projects of the individual, all collective action has been eradicated, and all governmental control has become void. The difference between Rand's ideals and the realities of liquid modernity lies in the shift from a solid, industrialized, and production-based society to a liquid, commodity- and consumption-based society. Whereas Rand argued that man's rational will to live drives him to create and to produce, all in the interest of self-assertion and self-fulfillment ('Wealth is the product of man's capacity to think'; *Atlas* 411), that same self-fulfillment is now sought and found in consuming identities, contradictorily 'solid enough to be acknowledged as such and yet flexible enough not to bar freedom of future movements in the constantly changing, volatile circumstances' (Bauman, *Liquid Modernity* 49–50).

Beginning my analysis of *BioShock*, I would first like to remain on the level of 'ideological critique,' drawing connections between narrative content and the larger socio-political realities, before later extending my argument to include the 'informational critique' (Galloway 95, 99), which incorporates the procedural or algorithmic nature of the medium. I believe that *BioShock* negotiates ideological discourse

pertinent to liquid modernity and individualization especially in its treatment of the posthuman, addressing those ‘frustrated adolescents’ described by Teachout through the medium of the video game, on the level of aesthetics, narrative, and process. In the game, the individual’s task of identity construction, most effectively dramatized in the form of a genetic engineering of the self, becomes the foil for ideological critique of individualization. In a sense, the game thus reveals Randian objectivism as inspirational and relevant for contemporary socio-political and economic realities, but also as deeply flawed. The game is a science-fictional extrapolation of this form of liquid modern individualization in the extreme:

Bioshock presents a bleak account of corporate domination, technological disaster and totalitarian control. It can be read as embodying deeply engrained cultural anxieties and concerns about individualist and laissez-faire ideals and policies. The game offers a complex rendering of an ideology taken to its extreme: a society of self-motivation, self-advancement and, consequently, the abandonment of ethics and social responsibility. It shows the player a world where the end outcome of a free market, free-for-all culture has caused societal collapse and the monopolistic domination of one corporate entity: Ryan Industries. (Tulloch 29–30)

Returning to my epigraph: *BioShock* uses the idea of creating ‘new man,’ even more so the idea of crafting yourself into ‘new man,’ and places it in the individual. Given complete freedom of choice in terms of manipulating the genetic structure of people, the game proposes that self-assertion and identity creation are any individual’s right. In an extreme vision of consumer society, and bleakly commenting on contemporary health and beauty industries, *BioShock* literalizes Bauman’s assertion that ‘there is and can be no limit to the level of our self-perfecting exploits, and to the satisfactions brought by further rises in that level’ (44 *Letters* 76). The discovery of plasmids and the option to self-improve via genetic manipulation were logically followed up by the creation of a demand for those commodities now available. The marketing of plasmids in the game is strongly reminiscent of contemporary pharmaceutical campaigns for alleged health problems that did not exist only a few years before (for example ADHD or the already mentioned eyelash hypotrichosis; see chapter 3). In *BioShock*, the concept is applied, for example, in promoting the use of the ‘Incinerate’ plasmid (firing flames from your hands) as a kitchen helper for overworked housewives (‘those happy family meals will take much less time to



“Fire at your Fingertips!” Incinerate’ – in-game advertisement for genetic engineering as a luxury commodity (source: *BioShock*, 2k Games).

prepare’), or as a smooth lighter replacement when flirting in a bar. Genetic engineering is displayed as a commodity, of use to everyone, assuming one can afford such a luxury item.

In the tutorial commercials, short introductory films that accompany each plasmid’s first in-game use, on the other hand, *BioShock*’s darker ironic commentary shines through, when the ‘Winter Blast’ plasmid (freezing objects or persons with your hands) is shown to be used by a husband to suspend his wife in ice, or ‘Incinerate’ helps the man escape the ‘attack’ of a doctor with a syringe by setting him on fire. Here, each plasmid’s weaponized usage is promoted. The tone is in tune with the game’s own advertising strategy, arguing that you have complete freedom in terms of weapon choices, even including radically ‘abusing’ genetic household helpers like ‘Incinerate’: ‘Turn everything into a weapon, biologically mod your body with plasmids, hack devices and systems, upgrade your weapons and craft new ammo variants, and experiment with different battle techniques’ (‘2k Games: BioShock’).

The plasmids’ empowering abilities make possible an even greater economic, industrial, and creative success in Rapture and consequently bring out visions of posthumanist futures by enhancing the more radical ideals already present in the city because of Ryan’s free enterprise, no



‘Incinerate’ – still from in-game tutorial film for plasmid use
(source: *BioShock*, 2k Games).

interference policy. The extremes that such a policy ideologically attracts vary with the professional orientation, but the game proposes that any ideology taken to its limit amounts to a ‘fanaticism [that], even in the service of total freedom, must come to a bad end’ (Bray 46). The game enacts several such extreme fanatics as ‘bosses’ (enemies the player has to defeat at the end of a level or chapter, usually progressively bigger and harder than any opponents faced before): the plastic surgeon Dr. Steinman, constantly searching for physical perfection and styling himself ‘Surgery’s Picasso’ (AD ‘Surgery’s Picasso’);⁴ the artist and playwright Sander Cohen, wishing to create unique masterpieces beyond the limited scope of all the ‘doubters’ and ‘frauds’ around him (AD ‘The Doubters’; RM ‘Fort Frolic’); Frank Fontaine, the opportunistic and deceitful gangster boss and main threat to Andrew Ryan’s empire (all RM from the end of ‘Central Control’ on); or finally Ryan himself, self-appointed ruler of Rapture and unwavering believer in libertarian ideals and free will (all RM up to ‘Central Control’).

Levine has commented on these bosses and the main idea of the game as ‘what happens when ideals meet reality,’ exposing a fanaticism in beliefs that ultimately fail, no matter what those beliefs: ‘They’re

⁴ All references to in-game radio messages (RM) and the audio diaries (AD) can be found as transcripts at the *BioShock Wiki*. If possible, I give the reference to the ‘name’ of the specific transmission in parentheses, but the bibliographic data given in the Works Cited is the main wiki page.

all reflections of Ryan. They're all people who take an ideal. With the plastic surgeon, it was physical beauty. He would take his ideal, and with the plasmids, push too far. Is it the plasmids or is it him?' (cited in Remo). The science-fictional dimension of possibility that the plasmids offer is thus *BioShock's* expression of the dystopian. This dimension provides the basis for extrapolating and enhancing the utopian impulse in the ideology (of freedom, beauty, creativity, success) into the extreme fanaticism that is driving these people, and then to tip it over into the dystopian: 'Well, the whole world is on the razor's edge of beauty and horror. Ryan's world, Fontaine's world, even Steinman's world – they're trying to make beauty, but it edges over into horror. The visuals of Rapture are all about that razor's edge' (Levine cited in Remo).

The dystopian moment of the game originates not just in the plasmids and their potential for a posthuman (if not superhuman) development, but rather in the unregulated access and the freedom of the individual to decide on their usage. As Joseph Packer argues, the game installs the plasmid technology as allegory for 'other technologies currently controlled by the government, such as recreational drugs and biotechnology' and enacts them as critique of individualization: 'the plasmids also represent the limitless potential of human ingenuity and the danger that potential poses when the government fails to regulate it' (217).

When used too extensively, the ADAM needed to change the genetic structure of the host cells deforms the healthy cells, similar to a cancer, replacing some and destroying other genetic material, thus causing both somatic and psychological damage to the host as well as a strong dependency (see *BioShock Wiki* entry for 'ADAM' and 'Splicers'). The substance (ab)users effectively become violent, mad junkies reminiscent of (fast) 'zombies' or 'infected':⁵ Driven to hunt for ADAM, they murder most of the 'normal' inhabitants of Rapture and engage in cannibalistic rituals of consumption. The game here posits the posthumans as inhuman and monstrous victims of their own desire for self-perfection and self-assertion (Aldred and Greenspan 482) – essentially individualized victims of a systemic risk in Rapture's gene-enhanced consumer society.

Interestingly, though, *BioShock* presents the splicers both as collective masses and as individual victims, a contradictory moment found in the aesthetics versus the narrative description of their origin. As described above, the splicers are fully engaged in individual self-creation: They desire the advertised plasmids; they crave them as commodities (or better

⁵ For a discussion of zombies and the changes brought by shifting them into 'infected,' see chapter 7 on post-9/11 zombie films.

as necessities) that enable them to constantly perfect themselves and (re)define their identity, which as Bauman argues has replaced 'human nature' as a given, and melted it into 'a task which every man and woman had no choice but to face up to and perform to the best of their ability' (*Individualized Society* 144). Most important about this task though is that one remains flexible and always able to switch 'identity' according to possibly arising needs – a concept that the game naturalizes in 'Gene Banks,' biotech stations in Rapture that allow people to exchange genes in the form of plasmids as they would accessories. Plasmids in the game thus represent an individualized consumer society's holy grail in that they commodify identity construction: 'Making yourself to the measure of your dreams, being made-to-your-own-order: this is, after all, what you always wanted, only lacking thus far the means of making your dreams come true. Now the means are within reach' (Bauman, *Living* 149). Whereas the previous chapters described 'made-to-your-own-order' posthumanity as social acts of *procreation* (in that the Crakers, the New People, and Dren are all created by and in addition to the human), in *BioShock* posthumanity becomes an act of *self-creation*, by modifying the original material beyond its existence – the human stops once the posthuman starts.

The contradiction, or better the ironic twist, lies in the net result, which *BioShock* visualizes vividly in the splicer aesthetics. The splicers' search for 'identity' and biological perfection in the end leads them to an extreme loss of individuality, and of their humanness. They find themselves mutated by the ADAM, showing skin abrasions, open wounds, deformities. Their human individuality becomes subsumed by their status as splicers, monsters, inhuman. Beyond the scarring and mutations, the splicers lose all status as individuals and become a faceless mass – in terms of game mechanics, there are thousands of splicers in Rapture but only ten to fifteen different splicer 'models' are generated by the algorithm of the game.

To further enhance their inhuman 'facelessness,' many splicers wear carnival masks (originating from the 1958 New Year's Eve festivities that were the start of the 'Civil War' in Rapture; *BioShock Wiki*, 'Mask'), which marks the situation as grotesque and carnivalesque in the Bakhtinian sense: The masks hide the deformation of society, while at the same time leveling all social strata by granting everyone the same façade. They erase any underlying identity by providing an equalizing front (Bakhtin). Further, the situation itself, the Civil War, is thus claimed as carnival, as a zone outside of law, rules, and morals. The blood spattered over the masks as well as their slight decay mark the aesthetic as even more horrific and grotesque.

In terms of game mechanics, the splicers function as typical first-person shooter cannon fodder, alongside the ordinary fare of monsters, zombies, aliens, terrorists, or Nazis that otherwise populate the genre's opponent rosters. As Krzywinska argues about zombies in gamespace: 'they articulate [...] contemporary cultural fears about the loss of autonomy or the capacity of science to create apocalyptic devastation' ('Zombies' 153). This connection to contemporary culture also holds true for the splicers, as these posthumans – through the biopunk framing of the game – are linked specifically to the science-fictionality (in terms of both possibility and consequence) of genetic engineering and the socio-political realities of an individualized society such as that in liquid modernity.

It is important to note, though, that the game's cannon fodder needs to be 'negligible from a moral standpoint,' so that it functions as the faceless enemy mass; the player needs to be unconcerned to dispose of it: that is, the splicers need to be 'morally quarantined' (Tavinor 99) from any objections that players might have to killing them. Packer argues that this 'moral quarantine' is forced on the player due to the game's depiction and critique of the objectivist ideology: 'When *BioShock* places Objectivists in the same role as these other groups [zombies, mutants, terrorist] viewed as complete evil, the game sends a message to any player familiar with the first-person shooter genre' (215). In Packer's argument, the in-game realities and the algorithmic nature (of *BioShock* as part of the first-person shooter genre) force players to 'internalize the idea that Objectivists are dangerous enemies, seeking to inflict harm for their own personal gain' (215). In a further analysis this rings true, as the game's setting as well as mechanics seem to confirm the ideological framing. Packer argues that since a strong individualizing impulse has created the threat of the splicers, plasmids have weaponized uses, lethal security measures and regular weapons abound in the game, and everyone is armed to the teeth and out for their own gain, survival of the player is dependent on a similar ruthless usage of all weapons at their disposal: 'power comes from possessing a large arsenal' (Packer 216).

But the player does not know all this (beyond the procedural logic of any first-person shooter) when they start the game. Thus, *BioShock* has to establish this moral ideological imperative ('Kill or be killed!') in a few short but very effective scenes right at the beginning of the game. The moral quarantining of the splicers unfolds as Jack is still trapped in the bathysphere: Unable to open the door, he witnesses a man stumbling towards the bathysphere, believing it to be rescue. The man is ambushed by a splicer and then eviscerated. The splicer turns

her attention to the bathysphere, attacking it, punching holes in the hull with claw-like hooks but not getting in; she then jumps into the darkness, crawling onto the roof. The cinematic quality⁶ of the scene is important to note: lots of shadows, flickering low-key lights, the steamed-up reflective surface, water running off the sphere – all of this makes the scene visually highly unreliable and it is hard to make out the exact events and for the player to position themselves in the game's geographical and ideological space. The attack of the splicer on the sphere then triggers a further loss of orientation as the player is unable to follow the movements of the attacker, as they can only locate the damage to the inside of the sphere; locating sounds (without a 360-degree audio simulation) is equally impossible and thus further disorientation is created. When the splicer withdraws and the door opens, the player realizes that they are 'at the mercy of a creature that will more than likely savagely kill them – or rather, the character they are controlling – without mercy or hesitation' (Kennedy 3). As Sean Kennedy's struggle with the player/character distinction shows, the anxiety, disorientation, and loss of control is transported from the diegetic level of the game and mirrored in the player. In this scene, then, with the help of setting, mood, and narrative, the moral status of splicers has been thrown into serious doubt for the player as well as for Jack.

This point is then further developed in a scene when Jack injects himself with his first plasmid (more on this below) and blacks out for a while. The diegetic loss of control is taken up algorithmically by making the scene a cut-scene not an in-game scene (meaning the player cannot enact any reaction at this moment): Jack blinks in and out of consciousness, symbolized by black screens. He awakes to two splicers discussing how to extract the freshly injected ADAM from his body. They are disturbed by a different creature, though: a hulking monster in a diving suit, and his companion, a pale and sickly-looking little girl in a pastel dress bearing a gigantic needle. She is there to extract ADAM from the 'angel,' but realizes that Jack is still alive. She leaves him, certain that 'he'll be an angel soon' (*BioShock*, 'Plasmid Cutscene'). Again, the

⁶ This scene is not a cinematic cut-scene in the usual sense. Instead, the player is able to manipulate both movement and viewpoint of Jack but cannot escape the bathysphere. The action takes place outside the sphere, but the player is still 'in control' of Jack. Also, of course, the term 'cinematic' is not used in its strict sense as there is no filming involved but everything is created digitally. The terminology, though, is borrowed from film studies. More on the function of cut-scenes and their usage in *BioShock* follows below.

player's as well as Jack's loss of control and inability to act against the splicers is stressed by the game, effectively showing the player that they need to be ready to defend Jack's life at any moment.

In the first 20 minutes of the game, Jack is thus twice shown to be at the mercy of his environment and he has had to dispose of several splicers, which very poignantly at the beginning has to be done with a wrench, necessitating very close contact and strong violence, by bashing in the heads of the splicers. When Jack now moves up a flight of stairs, he finds the entrance to the Kashmir restaurant, the light shining out of the hall, casting the shadow of a woman fussing over an old-style perambulator. The woman soothingly sings and gestures to the pram. The scene is bathed in an eerie bluish-green backlighting; the woman is not recognizable, as her back is turned towards Jack, and she seems to be busy with her child. When approached, she spins around and reveals a deformed face, screaming at Jack, and viciously attacks him. After Jack kills the woman with the wrench, the scene reveals the full extent of the moral degradation of Rapture's society: Firstly, the perambulator contains not a baby but a revolver, which Jack can use from now on to rid himself of the splicers. And secondly, this is the first time that Atlas, Jack's guide throughout most of the game, comments on the creatures in more detail and explains their origin and status: 'Plasmids changed everything. They destroyed our bodies, our minds. We couldn't handle it. Best friends butchering one another, babies strangled in cribs. The whole city went to hell' (RM 'Welcome to Rapture'). With his radio messages, Atlas functions as the moral baseline for the player and his judgment of the splicers is copied and internalized. His motivation (rescuing his wife and child from Rapture) and his commentary about the inhumanness of strangling babies in their cribs here enhance the image of the debased mother Jack just had to kill. As the scene makes emphatically clear, any humanity is gone from these creatures and the player should have no qualms whatsoever about killing them – morally, splicers do not belong to the same order of beings as Jack, or the player controlling him for that matter.

In a last step, the game goes further than simply using verbal and visual rhetoric to implement its critique of individualization and libertarianism, as seen above (Packer 218). The game also enacts this critique, to use Ian Bogost's terminology, with a 'procedural rhetorical frame' (104), forcing players to enact the ideology themselves. The art of persuasion through procedural rhetoric, Packer claims, can be seen in *BioShock* when the game forces the player to take part in the individualizing process and in the objectivist struggle: 'Rather than viewing the Objectivists who used plasmids as simply acting irrationally, the game

shows the player that plasmids (a metaphor for rampant science and drug use) makes [*sic*] sense in the dog-eat-dog world that Objectivists seek to create' (218). In order to survive, the game drives the player to make extensive use of weapons, but the plasmids are simply one of several options that can be used to kill the splicers. They are a sensible choice in terms of the player's gain, and usage of them is procedurally encouraged (as exemplified by Atlas: 'Give 'em the combo: zap 'em then whack 'em. One-two punch!'; RM 'Welcome to Rapture'). But not only do the plasmids thus simply 'make sense' in the procedural rhetoric of the game as a weapon choice, but they are, beyond that, absolutely necessary to progress in the game – on a simple algorithmic level, should the player not participate in the genetic self-creation that the plasmids signify, they will not be able to move further along the game's trajectory.

Already early on in the game, as mentioned above, Jack must inject himself with his first plasmid – the game presents this as one of very few cut-scenes, the extraordinariness of which will warrant more attention later. The scene happens only minutes into the game, when Jack encounters a locked door. The locking mechanism is broken and sparkles with electricity. To progress in the game, the player will have to find a way through the door, as all other exits are barred – this means jolting the blocked circuits with electricity. Around the corner, there is a plasmid vending station, called 'Gatherer's Garden,' advertising 'Genetic Modifications.' It is broken, but one glowing red bottle of plasmid and a blue syringe with the energy boost EVE (the 'fuel' to use the plasmids) are sitting openly in a compartment. The game mechanics highlight these as usable and important by surrounding the items with a glowing yellow shadow.

Using the power-up then triggers the cut-scene, a 'diegetic machine act,' in which the machine takes over the game (Galloway 12) and shows the player Jack's reaction to the plasmid injection: his pain, the unconsciousness, and the vulnerability when his DNA is rewritten (Kennedy 4). The action is inescapable, though, as the game would not progress if the player refused to use the plasmid power-up. Similarly forced uses of plasmids occur with 'Telekinesis,' which is needed to retrieve a key otherwise unreachable, and with 'Incinerate,' which is needed to melt a frozen hallway in order to pass through it – all of which occur in the first quarter of *BioShock* to assure the player's complicity with the game's ideological stance. The procedural rhetoric of the game here clearly marks the self-creational aspect, the individual act of becoming posthuman, as non-optional. As Bauman remarks on individualization, but very fittingly for the algorithm that governs



The highlighted plasmid 'Electro Bolt' needed to open the blocked door – and thus to progress in the game (screenshot, source: *BioShock*, 2k Games).

BioShock as well: 'Let there be no mistake: [...] individualization is a fate, not a choice. In the land of the individual freedom of choice the option to escape individualization and to refuse participation in the individualizing game is emphatically not on the agenda' (*Liquid Modernity* 34, emphasis added).

Moreover, the procedural rhetoric of *BioShock* further persuades the player to accept fluid posthuman identity as a component of the world of Rapture. As Bauman argues, 'Risks and contradictions go on being socially produced; it is just the duty and the necessity to cope with them which are being individualized' (*Liquid Modernity* 34). In Rapture, this refers for example to the systemic insecurity of life and livelihood. The fierce competition, class separation, and no-holds-barred capitalism effectively lead to precarious existence on all levels. Solutions to this systemic risk are found in individual choices: Plasmids are used not just as weapons but, in the form of their smaller variant as 'gene tonics,' also in order to provide a smoother interaction with the hostile environment or to provide security – effectively: to be better, healthier, safer. Gene tonics are available in three categories (combat, engineering, physical) and regulate different aspects of a precarious life: 'Hacking Expert' allows you to circumvent security and open safes, 'Human Inferno' reduces damage taken from fire, 'Extra Nutrition' allows you

to gain more energy from food, and so on. The extended metaphor of plasmids as biotechnology that keeps the body healthier and fitter is inescapable in the game: Plasmids and gene tonics are an indispensable commodity for life in Rapture (especially now that it has become such a hostile environment).

The game stresses the individual need for flexibility of life choices and the constant adaptation of the self to new challenges. The player starts out with two 'slots' but will soon have more gene tonics available, forcing the player to determine which tonics to 'equip' for which situation or buy more slots. The constant need to adapt to environmental challenges explains the availability and functionality of 'Gene Banks,' which store the additional tonics until they are needed and used. Switching your genetic make-up becomes as easy as finding a nice song on iTunes to go with whatever task is at hand. The game plays with cultural anxieties over precariousness and offers 'becoming-posthuman' as an individual life-choice consumer solution. As Bauman jokes, responsibility for living the right life and living it happily are individual tasks, solved with consumer logic: 'Now you will have to buy yourself the gene of your choice that will make you (without the detested need for the "sweat of your brow" [...]) enjoy the kind of happiness of your choice' (*Living* 145).

5.2 Freedom of Choice, Individuality *de jure*, and Morality

As we have seen, *BioShock* explores the contemporary trend towards individualization by extrapolating and mapping it onto science-fictional developments of posthuman genetic engineering. The ideological critique of the game allows us to read *BioShock* as making a statement on individualization as an existing sociological process and the necessity of seeking '*biographical solutions to systemic contradictions*,' as mentioned by Beck and Beck-Gernsheim. Supporting this, the game seems to promote a specific 'ludic contract,' as Clint Hocking argues, that 'is in line with the values underlying Randian rational self-interest.' According to this contract, acting in line with what the player perceives to be best for themselves will reap the greatest benefit and provide the biggest gain also for society – as claimed by objectivism. This ludic contract would thus be celebrating the same ideals as Rand's work, that individualism is not only necessary but also superior to collectivism, 'that self-interest is not only a right, but also a duty manifest in the very logic of life itself' (Packer 212). Individuality is then a question of autonomously setting moral standards for any action possible (with regard to the moral

imperative: what is best for me is best for society), determining the best action according to those standards, and freely making the decision to do what I truly desire.

That *BioShock* does not uncritically uphold such a ludic contract, or, therefore, any uncomplicated reasoning regarding individuality, has already been shown in regard to the dystopian turn that Ryan's extreme laissez-faire politics engendered. Further, the game's procedural rhetoric in regard to becoming-posthuman as a consequence of individualization has been shown to incorporate an element not simply of necessity but of coercion. Individuality, in the game, is granted only *de jure* (to stick with Bauman's distinction) and not *de facto*.

This distinction is best observed in regard to the game's enactment of player autonomy and the freedom to choose a specific path within the game. For Grant Tavinor, the artfulness of *BioShock* as a video game (thus in the Bogostian sense its procedural persuasiveness) can be found in two features, which strongly emphasize its 'themes of freewill and morality' (93) by meta-fictionally highlighting its algorithmic nature. Firstly, the game's procedural rhetoric forces players towards a morally ambivalent decision in regard to their acquisition of ADAM from the gatherers, the so-called Little Sisters. This decision has been argued by critics to represent an ethical dilemma (albeit a badly executed one; Sicart 159; Stephens), or an algorithmic commentary on the loss of innocence (Packer 218–19; Bray), or on objectivist logic (Hocking). Secondly, roughly three-quarters of the way into the game, *BioShock* further uses a narrative plot twist that in a meta-commentary discloses an underlying 'informational critique' (Galloway 99) of the procedural nature of all video games and connects it to the question of player autonomy and societies of control in general. In the following, I will thus analyze both game mechanics and their relation to liquid modern individualization processes in more detail.

As mentioned above, most of the gameplay revolves around the first-person shooter's conventional mechanisms of progressing from level to level, surviving the hostile environment, and killing adversaries that stand in your way (Manovich 222). In order to best be able to survive this hostile environment, the player thus needs to have as many advantages on their side as possible. In *BioShock*, this means that the player will need not only to become posthuman by injecting themselves with ADAM when no other option is available, but also to use plasmids and tonics excessively. In order to do so, the player will need to spend ADAM, distributing it to create plasmid slots or paying for additional plasmids. Aside from the already mentioned first cut-scene, there is just one source of ADAM in the game: the Little Sisters.

Little Sisters are young girls (roughly aged six to eight) that have been genetically altered to process raw ADAM, to recycle it from dead bodies, and concentrate it for industrial production by the use of an implanted sea slug in their system. In effect, they are posthuman biological ADAM factories, strolling through the halls of Rapture, looking for corpses to extract any residual ADAM from. Since they are small and vulnerable, they are paired with another genetically altered creation, the Big Daddies – oversized bodyguards in diving suits spliced into powerful fighters, bound by their DNA to protect their charges. Jack's first encounter with such a pair has already been described in the first cut-scene of the game, but this scene is not relevant in terms of the mentioned moral dilemma.

Rather, when Jack finally stumbles upon a Little Sister whose Big Daddy has been killed, granting him access to the girl, the game provides two different diegetic options for the player to proceed. On the one hand, geneticist Dr. Brigid Tenenbaum reasons with Jack that he need not kill the girl, but with a plasmid she offers him will be able to undo the genetic changes and thus rescue the girl from her status as Little Sister. Tenenbaum promises a reward for letting the girl live: 'I will make it to be worth your while' (RM 'Medical Pavilion'). On the other hand, Jack's guide Atlas argues along objectivist lines to get as much ADAM as possible by simply killing the girl and ripping out the sea slug from her system: 'Listen to me boy-o, you won't survive without the ADAM those ... things are carrying. Are you willing to trade your life ... for Tenenbaum's Frankensteins?' (RM 'Medical Pavilion'). The game then offers the player the choice: First a non-diegetic screen explains the situation in terms of diegesis (the girl dies vs. you rescue her) and in terms of game mechanics (more ADAM vs less ADAM). Additionally, Tenenbaum's promise is stated as an unknown variable, as to its function in game mechanics.

The player closes the screen and is faced with the overlay of their action options: 'Rescue' or 'Harvest.' In either case, Jack grabs the girl, fighting and screaming against the procedure. Should the player harvest the girl, smoke starts to fill the screen, which fades out to black, and then fades back in to show Jack holding a writhing black slug instead of the girl. Should the player rescue the girl, lines of white light flash over Jack's hand and the girl's face. The screen fades out to white and then back in to show a normal, healthy little girl standing before Jack.

In terms of narrative, the decision of whether to rescue or to harvest the girl comes to fruition in two different endings of the game. In the 'Harvest' ending, Jack becomes ruler over Rapture, unleashing his splicer army on the world and capturing a nuclear submarine to receive even



Little Sister mechanic: The player needs to decide whether to 'Harvest' or 'Rescue' the girl to progress in the game (screenshot, source: *BioShock*, 2k Games).

more power. In the 'Rescue' ending, Jack frees the girls from Rapture and grants them a chance to live out their lives (according to a very conservative family utopia). Narratively, the moral decision of the Little Sister mechanic thus provides the player with the power to grant the realization of Rapture's heritage as either utopian or dystopian (see Schmeink, 'Dystopia').

But according to Alexander Galloway, games are 'uniquely *algorithmic* cultural objects' (86), and rather than producing their meaning simply in constructing a narrative, they can be seen as meaningful only as actions taken by the user. Whereas films, Galloway claims, hide the political dimension of control in their own structure, games on the other hand openly present it through their algorithmic structure and by making the gamer complicit in their production:

Video games don't attempt to hide informatic control; they flaunt it [...] The gamer is [...] learning, internalizing, and becoming intimate with a massive, multipart, global algorithm. To play the game means to play the code of the game. To win means to know the system. And thus to interpret a game means to interpret its algorithm (to discover its parallel 'allegorithm'). (90–91)

Mastering the game for players thus means understanding the behavior of the simulated system, understanding the machine's reactions, the 'hidden logic' of the underlying rules:

[The player] is discovering the algorithm of the game itself. I mean this both metaphorically and literally. For instance, in a first-person shooter such as *Quake* the player may eventually notice that, under such and such conditions, the enemies will appear from the left; that is, she will literally reconstruct a part of the algorithm responsible for the game play. (Manovich 222–21)

A similar moment occurs when players are confronted with the Little Sisters mechanic, as the game openly flaunts its own algorithmic nature and provides disparate information on several levels. On the one hand, as Packer notes, the presentation of the Little Sisters and the moral choice given the player further function as ideological critique of objectivism and its ‘self-interest’ morality. In referring to their zombie-like aesthetics, Packer claims, the game connects the girls to ‘the dehumanized worker under capitalism [...] That the Little Sisters are children furthers the critique, because it juxtaposes an age of innocence with a gruesome task. *Bioshock* uses this imagery to connect success in capitalism with the loss of innocence’ (218). This would also be implicit in the symbolism of the images of white light versus black smoke – the decoding of which is possible for players, as the game mechanics allow a small number of Little Sisters to be harvested without receiving the negative ending. Further, as Jeroen Bourgonjon et al. argue, the scene introducing the moral decision (i.e. Tenenbaum and Atlas stating their respective cases) is designed to evoke a specific moral reaction. Tenenbaum’s presence (versus Atlas’s disembodied voice) and her argument in line with ‘dominant beliefs’ for a strategy that values ‘*long-term vision*’ and the ‘*innocence of childhood*’ implicitly position her as ‘good,’ whereas Atlas’s self-interest argument is based solely on a ‘*purpose-driven rationale*’ (96), which implicitly condemns him as ‘bad.’⁷

On the other hand, understanding the ‘hidden logic’ of the game and realizing the decision as a means to distribute power might lead to a different reading of the Little Sisters mechanic. For example, Hocking reads the overall game mechanics as clearly promoting self-interest (‘Kill or be killed!’), a typical first-person shooter ideology, and then argues that “‘dressing up” the mechanics of this contract in well

⁷ For an evaluation of player responses towards this implicit moral coding see both Packer and Bourgonjon et al., who argue that players’ reactions are driven by their non-gaming experience and morals. The image of the little girls is key to this reaction, as Bray comments: ‘But there’s a particular, throat-catching poignancy this time. Those Little Sisters are just too cute to shoot.’

realized content [i.e. the narrative around the moral decision] I literally experience what it means to gain by doing what is best for me (I get more Adam) without consideration for others (by harvesting Little Sisters).’ In this fashion, the underlying rules of the game promote self-interest by granting a larger amount of ADAM – rescuing the girl grants 80 points, whereas harvesting grants 160 points. Especially in harder difficulty settings, this amount can be vital for the player’s chances of beating the game.

But this is only the first layer of the algorithm designed around this mechanic, as the awarded amount of ADAM levels out in the long run due to the promised intervention by Dr. Tenenbaum, which grants the player an additional 200 points of ADAM after saving three girls. The ‘harvest’ option grants only slightly more ADAM,⁸ whereas the ‘rescue’ option offers additional benefits in the form of plasmids and tonics otherwise not available to the player (see *BioShock Wiki*, ‘Little Sister’). In terms of the underlying rules of the game, the decision whether to ‘rescue’ or ‘harvest’ might thus be reduced to the simple choice of which style of play one prefers. As Bourgonjon et al. poignantly remark: ‘From this perspective, the central theme is neither about morality nor objectivism, but about the choice of weapons’ (96).

To complicate the situation further, there is no real other consequence in terms of game mechanics. The moral decision thus does not become ‘an integral part of gameplay’ (Schulzke), as it does in game series such as *Mass Effect* (Electronic Arts, 2007–16) or *Fallout* (Bethesda Games, 1997–2016), where it significantly influences non-player characters’ decisions and reactions, limits the player’s access to specific areas, or even causes the game’s overall trajectory to change. Apart from the different endings and the difficulty and style of playing, *BioShock* does not actively confront the moral decision made.

For Miguel Sicart, this lack of responding to the player’s choices ultimately deprives them of any meaning, at least in regard to their ethical dimension. For him, the Little Sister mechanic could have involved ‘the player as an ethical agent in the game world’ (159), but failed, because the lack of consequences within this world shapes the players’ reactions (as is reflected in Hocking’s comments above):

Players will react to the dilemmas not with a moral stance, but with their player logic, focused on achieving their goals in the game experience [...] The game turns their alleged key ethical

⁸ Twenty-one Little Sisters can be harvested for 3360 ADAM or rescued for 3080 ADAM.

decision-making mechanic into a resource management process that does not require any type of moral reasoning for the player to succeed. (Sicart 160)

The moral decision embedded in the Little Sister mechanic is revealed to be of little consequence for the game itself and thus does not provide a nuanced reflection of the game's ethical value system: 'Rapture, it seems, does not care much about the ethics of its inhabitants, and all choices are deprived of meaning' (Sicart 160). The individual's decision does not change the ethical framework of the society. With Bauman's distinctive gap between individuality *de jure* and *de facto* in mind, we can then read this inconsequence of the player's moral choice as an ideological critique of individualization. The systemic contradictions of Rapture's society (the need to exploit others) cannot really be solved by biographical solutions (rescuing the Little Sisters) – in terms of game mechanics the simulated system (the game world) remains the same and no significant change occurs.

Lastly, and this will provide a bridge towards the discussion of the second feature of the 'freewill and morality' complex, a commentary should be made about the additional benefits that 'rescuing' the Little Sisters provides.⁹ The player receives not just additional ADAM from Tenenbaum but also a special plasmid, 'Hypnotize Big Daddy,' and several tonics, as well as ammunition, health, and EVE. The 'Hypnotize' plasmid is most interesting to note here, as it allows the player, for a time, to turn a Big Daddy from a fierce enemy into an ally with almost unmatched power. Similarly, several tonics and plasmids allow for a gameplay strategy that emphasizes turning the hostile environment against itself: hacking turrets and security cameras, the 'Enrage' plasmid, which has splicers fighting each other instead of Jack, or the 'Security Bullseye' plasmid, which focuses the security measures on the splicers. All of these are methods of undermining the system of Rapture that provide the player with a sense of control.

This mode of playing is then essentially an option that allows the player to enact their own critique of the systemic risks and to learn to accept them – to use the system and take the little control it offers. As Scott

⁹ I owe the discussion of this aspect to my student Hakob Aridzanjan, who, in the summer term of 2013, handed in a brilliant term paper on the deconstruction of player freedom in three recent video games. He noticed the 'theme of control [...] prevalent in several other game mechanics' of *BioShock*, which enable players to empower Jack with the ability to 'hack the system' of Rapture and thus turn 'control society' against itself.

Lash argues for the shift from solid to liquid modernity, where in solid modernity 'a logic of structures' determined the individual's responses, liquid modernity now offers a 'logic of flows,' from which it follows that systemic risk is chronically indeterminate and that 'living with risk is of much more a piece with [...] the partial, the elusive determinacy of flow' (vii). The non-linearity of liquid modernity means that individuals have to adapt to new forms of systemic risk. Liquid modernity is thus much more in tune with procedural ideology, the 'allegorithm,' of video games, in that it pushes the individual not towards 'determinate judgement and rule following' but rather towards 'rule finding and reflective judgement' (Lash xii). If players choose to 'rescue' the Little Sisters, then the game strengthens a gameplay option that is 'reflective' in flaunting the theoretical manipulability of the system itself. Collective resistance by solidarity with the girls, instead of self-interest, brings an additional option to gain a modicum of self-assertion.

5.3 Autonomy and Agency in Video Games

The second game aspect that determines *BioShock's* artfulness (according to Tavinor), and that has been argued to be its key innovation, is the game's meta-commentary on the procedural nature of video games in general, a commentary that has been applied to reveal controlling aspects of informational societies (among others, see Aldred and Greenspan; Sicart; Tavinor; Tulloch). With the mentioned narrative plot twist occurring late in the game, *BioShock* enacts 'the procedural confusion surrounding agency and free will' that is common for most video games and 'ultimately mocks your helplessness at both a procedural and a narrative level' (Aldred and Greenspan 490).

One of the key features of video games as media is that they are 'premised on the notion of user agency' (Tulloch 31), mostly debated under the term 'interactivity.' The distinction to be noted here is that interactivity can function in two ways – in a 'figural sense, interactivity describes the collaboration between the reader and the text in the production of meaning' (Ryan 16), thus hardly qualifying as specific to video games; in the 'literal sense,' interactivity means the 'textual mechanisms that enable the reader to affect the "text" of the text as a visible display of signs, and to control the dynamics of its unfolding' (Ryan 17). In video games, Ryan argues, interactivity defines the position of the 'interactor,' who 'performs a role through verbal and physical actions, thus actually participating in the physical production of the text' (17) – the text in this case being 'an active medium [...] one whose very

materiality moves and restructures itself [...] an *action-based* medium' (Galloway 3). Further, it is important to note that agency in an interactive medium does not equal authorship. Interactors are able to actively shape the materiality of the text, to create the specific instantiation of the text by traversing a chosen path (see the concept of 'ergodic literature'; Aarseth 1), but they 'can only act within the possibilities that have been established by the writing and programming' (Murray 152). Video games are simulated systems (see Frasca), which have been created with specific sets of rules that allow interactor participation: 'Authorship in electronic media is procedural. Procedural authorship means writing the rules by which the texts appear as well as writing the texts themselves. It means writing the rules for the interactor's involvement, that is, the conditions under which things will happen in response to the participant's actions' (Murray 152).

Nonetheless, the general tendency among players as well as critics of video games is to imbue the term 'interactivity' with a meaning that stresses agency, proposing connotations of 'individual freedom of choice, personal development, [and] self determination' (Jensen, cited in Tulloch 32). Katie Salen and Eric Zimmerman (both game designers) make the connection explicit: 'We have argued that in order to create instances of meaningful play, experience has to incorporate not just explicit interactivity, but meaningful *choice*' (ch. 6, sec. 5). In order to experience the game as meaningful, the player needs to be actively involved and be able to choose their path, to feel in control of their avatar. Players thus believe themselves to be individuals *de facto*, that they as players have achieved 'individuation' by living 'self-sustained and self-propelled' (Bauman, *Liquid Modernity* 34) lives. *BioShock* intervenes at this point and exposes the players as individuals *de jure*, given 'no choice but to act, even if counterfactually, as if individuation has been attained' (Bauman, *Liquid Modernity* 34), even though risks are still systemically produced and keep exerting control over them. Or as Galloway argues, 'video games are allegories for our contemporary life,' reflecting the 'informatic control' of liquid modern societies, so that consequently the games' 'algorithim' needs to be understood as 'enacted metaphor' (106) of the 'logic of flows' mentioned by Lash.

In terms of player agency, video games can employ different techniques that allow for different levels of control and thus provide either perceived freedom or limitation, a few of which are relevant to my analysis of *BioShock* and the guidance of the player through the game world: the game's 'pedagogic mechanism' (Tulloch 23), its spatial linearity, and the sparing use of narrative cut-scenes. I will discuss these mechanics and their implications for systemic control and individualization processes

in liquid modern society, but first, I would like to shortly address the narrative behind *BioShock's* plot twist.

When Jack arrives in Rapture, he is first addressed by a voice from a handheld radio system. The voice turns out to be that of Atlas, an Irish working-class immigrant, who claims that he is trying to escape from Rapture together with his wife and son (*BioShock Wiki*, 'Patrick and Moira'; RM 'Neptune's Bounty'). Atlas becomes Jack's guide through Rapture, explaining both the environment and the politics that shaped the city into what it is. While Jack and Atlas are trying to escape Rapture, Andrew Ryan believes Jack to be a spy sent to infiltrate Rapture and dispatches splicers and security measures to stop him. When Ryan destroys the bathysphere in which Atlas and his family wanted to escape, supposedly killing his wife and son, Atlas swears revenge on Ryan and the game thereafter follows the struggle between Ryan and Atlas, with Jack in the middle of the conflict. That is, until Jack confronts Ryan in his office, and Ryan reveals a conspiracy revolving around Jack. Jack is not an outsider but the genetically altered and carefully planted illegitimate son of Andrew Ryan, who has been given false memories and been manipulated into the situation unwittingly. The puppet master behind the conspiracy is Ryan's rival Frank Fontaine, who has staged his own death, altered his appearance, and controlled Jack via a genetically embedded code phrase to do his bidding, disguised as the benevolent Atlas. Every time Jack hears or reads the phrase 'would you kindly,' it acts as a subliminal trigger that makes it impossible for Jack not to act upon it. The realization of this manipulation is then presented by the game in a powerful cut-scene with key uses of the phrase, which reveals the extent of the manipulation and the manufacture of the action to the very last detail – Atlas has been 'guiding' Jack with a soft touch, but effectively nonetheless. Afterwards, Ryan demonstrates the power of the phrase by demonstrating his ideological principles, interspersed with commands to Jack – ending in the ultimate command to kill: 'Stop, would you kindly? ... "Would you kindly" ... Powerful phrase. Familiar phrase? ... Sit, would you kindly? ... Stand, would you kindly? ... Run! Stop! Turn. A man chooses, a slave obeys. ... Kill! ... A man chooses! ... A slave obeys! ... OBEY!' (*BioShock; BioShock Wiki*, 'A Man Chooses, a Slave Obeys'). The enormity of this revelation and the powerlessness of both Jack and the player in this central scene are a radical intervention into the illusion of free will and player agency on the parts of the game designers. The decision to kill Ryan in this manner – in a cut-scene completely out of the hands of the player – demonstrates the power and fanaticism of the ideological system at play in the game, as Ken Levine argues:

And it's out of your control. At the end of the day, everything [Ryan] had to do, had to be about his ideology. Nothing was more important to him, even his life [...] It was more important for him to show you he was the master of your will than to live. I think that it was really the ultimate insult to the player, that he chooses to die but you can't choose to do anything. You have no will at all [...] Ryan sort of had to show you, as a character, that there are things more important to a character than winning the fight. He could die, as long as he died with his ideology intact, and while showing you that you had no ideology, that you were nothing. (Levine cited in Remo)

For most players, the scene comes as a shock; it cleverly reveals the underlying algorithms of any video game and flaunts the 'hidden logic' of procedural authorship. The game shows itself as a scripted simulation that allows players only a very limited reach of agency, where most other video games try to gloss over any such limitation. As Andrew Vanden Bossche argues, '*BioShock* not only involves the betrayal, but really makes players conscious of how much the game controls their actions, rather than the other way around.'

Vanden Bossche claims that a player's illusion of control is necessary for the enjoyment of a game and that 'authoritative voiceovers,' which openly tell the player to do things, get in the way of the feeling of player agency. Instead, cleverly executed games such as *BioShock* will lead players through the pre-scripted actions by other mechanisms. Instead of using a tutorial level, which overtly addresses the player and interrupts the diegesis by displaying 'how to' information on screen, *BioShock* favors more subtle cues in order to guide players towards desirable actions.

BioShock introduces Atlas as its 'primary pedagogic mechanism' (Tulloch 33), instructing the player from within the diegesis as a relational character (not as some abstract supervisor dishing out orders) and providing strong narrative motivation for character actions – for example, suggesting to Jack that he pick up the wrench in order to be able to defend himself against the first splicer outside the bathysphere. This guidance is necessary in every game, as the mechanics of each game are specific and need introduction. In *BioShock*, Atlas simply appears to be a 'clever framing device' for this 'technique of standardization and control' (Tulloch 33) over possible player actions, which by design will necessarily have to be limited: Players will be able to explore only a spatially limited area (certain parts of Rapture), have interaction with only a limited amount of objects (weapons, doors, power-ups, audio diaries, bodies), and express only a specific set of actions (running,

killing splicers, jumping, and crouching are possible; lying down flat on the ground is not, and neither is shooting yourself, for example). The function of rules that govern the player's actions is, according to Juul, twofold: Rules function either by '*limiting player action*' or by '*set[ting] up potential actions*, [...] they also add meaning to the allowed actions and this *affords* players meaningful actions that were not otherwise available; rules give games *structure*' (58).

What is interesting to note about Atlas as a pedagogic mechanism is that he limits himself to rules as '*affordances*,' not to those as '*limitations*' (Juul 58) – he does not tell the player what not to do, but only adds meaning to actions that are possible. As Atlas is only a voice over the intercom, he cannot prevent the player from moving Jack in any direction – the spatial limit is still something the player has to encounter through barricades, and so on. Rather, Atlas suggests a meaningful strategy, 'an overall plan for how to act in a variety of different states that the game may be in' (Juul 59) – as does for example Tenenbaum, when she offers a different strategy to beat the game. The limitations of the game rules need to be explored rather than having them explained, whereas the affordances are presented as possible strategies to master the game – in this way, the game leaves the player with a lot of perceived freedom of choice. Tavinor calls this illusion 'pseudo-freedom: giving the player as much freedom as possible within the determinate framework of the narrative and game' (101). The player is never forced through a non-diegetic tutorial, the game limiting non-diegetic interference to a necessary minimum (as with the Little Sister mechanic screen). Atlas's requests, on the other hand, are diegetically motivated. Plus, they seem reasonable within the genre confines of first-person shooters, and they keep up the illusion of player control. As Vanden Bossche argues, feeling in control and having the ability to actually decide things are not the same: 'It's possible for players to feel in control, even if they don't actually have the ability to choose, as long as "what the game asks" and "what the player wants" align.'

Even though the game has similar rule algorithms as any first-person shooter, by glossing over limitations in the rules and highlighting affordances as strategies, *BioShock's* pedagogic mechanism conveys an individualistic feeling of autonomy: The player is in control; they decide on the strategy to beat the game. That the systemic (in this case procedural) reality is quite different and that in fact the player is purposefully misled by the game, that they are confronted with '*imperfect information*' regarding the rules of the game, meaning that they have 'only partial knowledge of the game state' (Juul 59), is then the revelation that makes the 'would you kindly' mechanic all the more powerful.

Rule systems are not the only features that reveal issues of control in video games – rather the largest strain on the feeling of player control comes from the most common function of narrative progression, generally used in video games to convey backstory or to provide information deemed indispensable: cut-scenes, which ‘temporarily steal away the player’s agency, a problem that has led to the increasing abandonment of cut-scenes in recent games such as *Bioshock*’ (Tavinor 103). For Galloway, these machinima, mostly pre-scripted in-game interludes and high-gloss video scenes, are diegetic machine acts that signify pure machinic action, but are ironically also the most non-gamic aspect of a game (due to the cinematic feel and staging of the scenes):

In these segments, the operator is momentarily irrelevant – [...] the operator is forgotten. But instead of being in a perpetual state of no action, the cinematic elements in a game are highly instrumental and deliberate, often carrying the burden of character development or moving the plot along in ways unattainable in normal gameplay [...] The necessity of the operator-machine relationship becomes all too apparent. These cinematic interludes are a window into the machine itself, oblivious and self-contained. (11–12)

Interestingly, *BioShock* has very few purely ‘rendered video’ cut-scenes and rather concentrates on ‘procedural, in-game action’ (Galloway 11), both of which are independent of the operator, but engender a slightly different feeling of control. Whereas rendered cut-scenes completely take control over the characters, in-game machinima pay lip service to player agency by allowing minimal control – the player may be able to move the avatar’s viewpoint or move in a tightly regulated space, but still cannot interact or stop the machine act from happening (short of stopping the game). The starting sequence in the bathysphere would be a good example of how player agency is maintained on the superficial level (Jack can move around the sphere) whereas the machine act reveals the underlying authorial agency by taking on the narrative burden of conveying the harsh reality of Rapture’s ideological basis (the splicer killing the man, then attacking the sphere). No real interaction takes place and the player’s choices are irrelevant, signifying the procedural rhetoric underlying this scene.

That *BioShock* reintroduces the rendered cut-scene in its decisive moment, when Ryan reveals the ‘would you kindly’ mechanism, is then of course deliberate procedural commentary on the nature of player agency and perceived freedom of choice. On the narrative level, Jack is revealed to have been a pawn in Atlas’s game – but the real eye-opener

is that player agency is debunked as a myth: 'the game has manipulated us through its use of environmental nudges, game-world obstacles, and objectives we have been kindly asked to achieve, so that for the most part, we have "sleepwalked" through the game, unaware of the artifice, an actor in someone else's artwork' (Tavinor 104).

The procedurality of *BioShock*, ripped from being a 'hidden logic' and shoved out into the light of the diegetic level of the game, is shocking:

This is precisely what the narrative of *Bioshock* is actually saying: we had no choice, at all moments we were guided by a force more powerful than our own will [...] The change from actor to spectator, from agent to passive being, marks what should be read as a designed ethical experience: we are powerless, contemplating a horrendous act of which we are mere witnesses, yet that we have caused by our previous actions. (Sicart 156–57)

Individual autonomy in the 'allegorithmic' form of player agency (to use Galloway's term) is an illusion; the game's procedural nature, its setting of rules and limits, cannot be overcome – no matter how much some games try to gloss over this fact and provide a rhetoric of 'interactivity' highly stylized into ideology. In a sense, then, the whole genre of the first-person shooter in itself is 'an allegory of liberation pure and simple' (Galloway 104) that undermines its own ideology by its procedurality. On the one hand, eliminating threats in first-person shooters functions as an act of liberating yourself from oppression and trying to break free from societal constraints – allegorically speaking, when you are playing a shooter, you are taking control, as an individual, self-asserting via the avatar. But at the same time – in a lateral step, as Galloway argues and as *BioShock* overtly states in its 'would you kindly' mechanism – the game itself is an assertion of informatic control over the individual by providing gameplay rules: It is 'a new manipulation, [...] using wholly different diagrams of command and control' (Galloway 106).

As an allegory on control societies in liquid modernity, *BioShock* uncovers the impotence of the individual in regard to systemic risks not 'as a personal failing but rather shows it to be a ludic and political inevitability. The coupling of the deconstruction of complete agency with the game's narrative advances the overall thematic problematization of ideologies of individualism' (Tulloch 34). The power exerted on the player (via their avatar Jack) is revealed to be culturally mediated through pedagogy and media (the audio diaries, Atlas's transmissions). Agency, autonomy, and self-assertion are never truly realized *de facto* as the individual is still embedded within social systems of control: 'The

notion that the individual can exist external to power is shown to be dangerously naïve' (Tulloch 34).

Even though this realization of a systemic contradiction weighing on feelings of agency and individualization is brought to full fruition with the 'would you kindly' scene in Ryan's office, *BioShock* does indeed foreshadow the message on different levels. Throughout the game 'issues of autonomy, identity, power/powerlessness, and control' (Krzywinska, 'Zombies' 156) are raised, which needs to be understood as part of its generic make-up as first-person shooter positioned between science fiction and horror:

Autonomy and agency are regularly put to the test, undermined, or threatened in the [horror] genre. The particular combination between player autonomy and the shaping qualities of the game design that controls and limits player power to create a structured experience, story, or suspense is one that resonates well with the thematic concerns of the genre. (Krzywinska, 'Zombies' 167)

Whereas the science-fictional dimension of possibility projects the posthuman onto the landscape of a libertarian utopia that enables transhumanist development, it is the horror element of those posthumans turning into the zombie-like splicers (in a sense an embodiment of the science-fictional dimension of consequence) that clearly marks the game as a dystopian imagination of liquid modernity and drives home the point even more effectively. Horror (as a genre) often builds upon a shifting relation of power and powerlessness, a threat presented towards human agency; horror video games effectively enact this 'dynamic between states of *being in control* and *out of control*' (Krzywinska, 'Hands' 208) through their procedural rhetoric. It is specifically the 'game's infrastructure [that] invokes for the player an experience of being subject to a predetermined, extrinsic, and thereby, Othered force, which is balanced against the promise of player autonomy offered by the game's interactive dimension' (Krzywinska, 'Hands' 208).

BioShock makes the highly volatile ground of player agency the central aspect of the gameplay: By covering up the pedagogic mechanism and confusing the in control/out of control distinction via the use of procedural in-game machinima, the horror of losing control is more subtly pushed aside by the player. At every crucial decision point, the game nevertheless flaunts its control over the player by almost imperceptibly taking control. The most overt moment is when Jack receives the first plasmid: The game mechanics announce this only as 'Electro Bolt: Power Up (E),' as we have seen above. Before this moment,

picking up an item (the wrench for example, or a First Aid Kit) added it to your inventory – use of the item was in player control via pressing a specific button. When the player ‘picks up’ the plasmid there is a sudden and very disturbing moment of loss of control: The game shifts into a fully rendered cut-scene that then delivers Jack helplessly to the splicers and introduces both a Little Sister and her Big Daddy. Not being able to fully see, due to the position of the camera and the inability to move, makes the scene all the more horrific.

In later moments of import, a similar dynamic of being ‘out of control’ occurs: When the player meets Dr. Steinman, he is secured behind glass and any action taken by the player is futile until the machine act has finished and the ‘boss fight’ starts – Steinman engages the door locks and starts firing. When the player meets the next Little Sister, Atlas asks him, ‘would you kindly lower that weapon for a minute?’ (RM ‘Welcome to Rapture’) and the game then automatically shuts off the option to shoot or switch weapons. The avatar’s weapon is no longer visible on screen. The player may be able to control Jack’s movements (restricted to a single room), but interaction with the machine act that introduces the creatures and their relation is impossible. This technique of imperceptibly manipulating the player and taking control out of their hands is pervasive throughout all of the game.

5.4 Deep Structures and the Impossibility of Learning

The manipulation of the game and the disguised nature of the ‘in control/ out of control’ dynamic make the ‘would you kindly’ mechanic all the more horrific and really drive home the point to the player ‘that they [were] being acted upon by the game’s deep structure’ (Krzywinska, ‘Hands’ 216). In combination with the allegorism of the game, its strong connection to liquid modern society, libertarianism, and individualization, these structural elements perfectly naturalize the dystopian horror that Bauman describes so vividly in regard to the gap generated between the conditions of individuals *de jure* and *de facto*: ‘It is from that abysmal gap that the most poisonous effluvia contaminating the lives of contemporary individuals emanate’ (*Liquid Modernity* 39). ‘Being out of control,’ *BioShock* shows us very effectively, is a condition inherent to liquid modernity, one that we – as players – have long since accepted and learned to overlook unless it takes center stage.

How deep this acceptance goes is also enacted in the game. As mentioned before, the ‘would you kindly’ scene takes place roughly three-quarters of the way into the game. Obviously, the last quarter

then narratively deals with a rebellion against Fontaine (Atlas) and his manipulation by getting the means to defeat him and finally killing him. Since Fontaine has a chokehold on Jack due to the phrase, Jack is once more not quite the master of his own fate, but rather needs to rely on Dr. Tenenbaum to undo some of the conditioning and free him from the 'would you kindly' slavery. Afterwards, it is Tenenbaum who takes over the role of guide from Atlas and tells Jack where to go and what to do. She leads him around Rapture to discover the genetic compound to fully break free from Fontaine's control over Jack, and then tells him to confront Fontaine. When Fontaine flees and Jack needs to get through a specific door, which only Little Sisters can open, Tenenbaum tells him that he needs to transform himself into a Big Daddy and helps him gather up the needed parts.

Aside from the narrative-ideological aspect of Jack further becoming erased as an individual by donning the Big Daddy gear, the game mechanics of the last quarter of the game show no change whatsoever to the game mechanics before the revelation. The only difference is that Jack – and thus the player with him – is now being 'guided' by Tenenbaum. Loss of control is as much a part of the game as before – and all the abovementioned procedural elements remain in place. Knowing about the control mechanisms does not change the power they exert on the player. The only option to stop the systemic control and to truly become a free individual would be to stop playing altogether, which never really was a choice, as Bauman argues for individualization: 'Individualization is here to stay; and thinking about the means of dealing with its impact in the fashion in which we all conduct our lives must start from acknowledging this fact' (*Liquid Modernity* 37). As Packer points out, 'If one views the decision to keep playing *BioShock* as a choice, however, then the critique of Objectivism is not that human freedom is illusory, but rather that players choose to accept limitations on their freedom to further their own entertainment' (221, note 7).

More than a work on this subject in any other medium, *BioShock*, because of its procedural nature and the manifold opportunities to let the player meaningfully and actively participate in the production of the game's rhetoric, comments on the power of social control exerted on the individual. It reveals liquid modern society as a dystopian present that *de jure* positions its members as individuals while maintaining systemic control over them and exposing them to incalculable, unpredictable, and individually unmanageable risks. The nature of this dissonance can be procedurally reflected in many video games as informatic control and *BioShock* most effectively demonstrates the inevitability of this kind of control.

The Utopian, the Dystopian, and the Heroic Deeds of One

The human species is at the very dawn of an evolutionary renaissance [...] We evolve. (Chandra Suresh, cited in 'Activating Evolution,' entry on *Heroeswiki.com*)

In his seminal study *The Hero with a Thousand Faces*, Joseph Campbell argued that there are recurring universal structures to be found in religion, mythology, and folk traditions, no matter from which culture and time these are taken, culminating in 'basic truths by which man has lived throughout the millennia of his residence on the planet' (xiii). One of the most common truths can be found in the figure of the hero, through which societies keep enacting a 'recurrence of birth' (Campbell 12), continuously reintroducing new life into the community. Heroes, Campbell argues, reach beyond their current socio-historical limits and bring with them 'visions, ideas, and inspirations [...] from the primary springs of human life and thought' (14). Heroes are consequently the catalysts of change and transformation; they represent the utopian impulse of a society in that they are the individuals that unlock a potential, 'which is hidden within us all' (Campbell 31) and which allows for human progress. Furthermore, hero myths are not only universal, but also highly adaptive and protean – whereas the structure remains, its representation adheres to social and historical changes. In contemporary culture, one such representation is the figure of the superhero, and scholars have pointed out its strong connection with classic mythological heroes, while arguing that a hero always 'embodies what we believe is best in ourselves,' representing the values and morals of a society by becoming the 'idealized vision we have of ourselves and our society' (Fingerroth 14, 25; see Reynolds 24). For Angela Ndalians, the hero emerges 'in response to social change':

Heroic action usually has a fundamental link to the welfare of the society from which the hero comes. Heroes and superheroes have never operated in a vacuum. They respond in a dynamic way to various challenges and social needs. [...] Occupying a space outside culture, the super/hero often serves the function of mediator figure that enters a community in crisis with the aim of resolving its conflicts and restoring the *status quo*. ('Do We Need' 3)

In regard to contemporary society, then, one could consequently argue that the changes experienced through liquid modernity, such as the dissolution of stabilizing institutions, the continuous fluidity of identities and alliances, and the centering of global risks as problems to be faced by individual humans (not necessarily superpowered), find a correlation in the depiction of superheroes (see Coogan 193–230; Round). And indeed, to give just one recent example of these trends, one could point towards developments in the Marvel Cinematic Universe, starting with the uneasy, continuously disputed and later dissolved alliance of the Avengers in Joss Whedon's film *The Avengers* (US, 2012), the devastating attack and complete destruction of the institutional S.H.I.E.L.D. in Joe and Anthony Russo's *Captain America: The Winter Soldier* (US, 2014), and the responsibility of single-handedly providing global security thrust on Agent Coulson (Clark Gregg) and his team at the end of the first season of Whedon's TV series *Agents of S.H.I.E.L.D.* (US, 2013–).

Similarly, the cultural shift towards biopunk themes should provide superhero narratives with an option to portray the 'unlocked hidden potential within us' as resultant from or contiguous with genetic engineering, thus exploring aspects of the posthuman condition. Examples of this shift include the resurgence of the X-Men franchise (about genetically mutated humanity) in seven films so far, the reimagining of Spider-Man's powers as resulting from a recoding of Peter Parker's DNA through the spider bite of a transgenic spider instead a vaguely 'radioactive' one (*Spider-Man*, US, 2002, dir. Sam Raimi), or the creation of the Hulk, similarly through genetic experimentation instead of radiation, in Ang Lee's *Hulk* (US, 2003).

Most interesting is a tendency in contemporary TV shows to explore the combination of these two trends: the emergence of posthumanity through genetic means and the social changes wrought by liquid modernity. Taking their premise of an evolved humanity bestowed with superhuman abilities from the X-Men comics and accompanying film series,¹

¹ I do not include the film series in my analysis because its themes – as an adaptation of the 1960s comic-book series – are rather centered on the overt

these include NBC's *Heroes* (creator Tim Kring, US, 2006–10), SyFy's *Alphas* (creator Zak Penn, US, 2011–12), ABC's *No Ordinary Family* (creators Greg Berlanti and Jon Harmon Feldman, US, 2010–11), and E4's *Misfits* (creator Howard Overman, UK, 2009–13). What connects these series is the discussion of a posthuman evolution in the context of its impact on the development of society (or the lack thereof) – to a varying degree, the series interrogate a number of topics connected with (a) the conventions of superhero fiction, (b) the personal consequences of posthuman existence, (c) its dependence on genetic mutation, (d) the role and responsibility of the individual in society, and (e) the political possibility of utopia through posthumanism.

I will concentrate my analysis on NBC's *Heroes*, as it best highlights all five of these subjects, especially the interrelation between genetic evolution and the possibility of utopia, whereas the other series merely touch upon these themes to varying degrees. *Misfits*, for example, does not explicitly ground its human evolution in genetics but rather employs an 'electrical storm' as catalyst for the posthuman change. It provides discussions of superheroism and posthumanity, but relegates the social and political implications, especially their potential to provide a utopian space, to minor storylines and instead concentrates on the everyday concerns of a disaffected youth and the personal and often petty desires of the characters. *No Ordinary Family* is similarly concerned with a more personal scope, focusing on a nuclear family as the vanguard of the genetic change. Utopian potential and social impact of the posthuman are here reduced to a single family unit and rather reflect typical American values – a lack of scope that may have played its part in granting the show only one season on the air. *Alphas*, on the other hand, concentrates almost exclusively on the political dimension, situating the conflict over evolved humans in the realm of governmental agencies, espionage, and terrorism. The show thus largely ignores the superhero genre in favor of a more general action-thriller approach, and the utopian potential is based in two opposing institutional structures. Nonetheless, the above shows might be fruitfully analyzed via a posthumanist reading as well. My concentration on *Heroes* is due to the scope of this chapter, the confluence of all of the

co-existence with and conflict about the social integration of posthumans as an allegory for racial inequality. Also, the X-Men, as creations of the Silver Age of Comics, are much more representative of classic superheroes (costumes, mission, identities) than is the case with the characters of the discussed TV shows. Of course, the X-Men can be understood to be part of the biopunk cultural formation, to interrogate posthuman existence, and to confront liquid modern realities – but such a consideration would warrant a separate analysis altogether.

abovementioned topics, and, not least, the show's somewhat contested popularity (averaging 14 million viewers during the first season, which later dropped to 4 million in the fourth season; generating a strong fan base that got NBC to reboot the franchise in 2015 as the miniseries *Heroes Reborn*, which got cancelled once more due to unsteady ratings) and critical reception, garnering nominations for Golden Globe, Emmy, and TCA awards. Lastly, *Heroes* was the first show to introduce the concepts, on a mainstream network no less, with all other series following after *Heroes* was cancelled (or in the case of *Misfits*, in its last season).

Heroes has been praised in its first season for its serious depiction of the superhero trope and an adult-oriented concentration on drama instead of adolescent comic-book action (see Porter, Lavery, and Robson; Simmons; Short), and I will concentrate on this season mainly. The show was later criticized for having failed to keep up this emphasis on drama, as well as sacrificing the mature representation of characters and their private struggles to action-thriller tropes and narrative spectacle. In her chapter on the show (135–68), Sue Short provides a thorough analysis of the factors contributing to the economic and critical failure of *Heroes* as a 'cult telefantasy series' (the title of her book) but nonetheless stresses the merits of the character-driven first season.

The series deals with a group of ordinary people that suddenly 'awaken' to find themselves capable of superhuman feats. Especially in its first season, it highlights their struggle to cope with the situation, the sheer impossibility of integrating their abilities into ordinary lives, and the choice of using these abilities for the benefit of society or for personal gain. In terms of structure, the series provides self-contained story arcs in each season that emphasize an interconnectedness of the characters' lives, as well as in terms of politics and global events, thus stressing a direct influence on the scope of individual actions for the greater utopian/dystopian realization of the future.

This format was supposed to 'avoid perceived problems' that audiences had with the several-season-spanning and elaborate storyline of *Heroes'* direct inspiration *Lost* (creators Jeffrey Lieber, J.J. Abrams, and Damon Lindelof, US, 2004–10), as Short argues. Wanting to circumvent frustration, Kring pushed to have *Heroes* deliver storylines with 'a faster pace and the action divided into mini-arcs' (Short 142), without resorting to the monster-of-the-week formula of shows such as *The X-Files* (creator Chris Carter, US, 1993–2002). This approach created different problems, though, mainly in regard to continuity, when characters were radically rewritten against the grain of their perceived personality for new storylines, and in terms of redundancy, 'with each story arc presenting a disaster that must be averted [...] calamities that are always foiled

in the final moments' (Short 143). Instead of monster-of-the-week, the series promoted a catastrophe-of-the-season cookie-cutter formula that felt as repetitive and uninspired.

What *Heroes* provided in its first season and what was lost over the course of the show was its commitment to individual and ordinary lives thrown into unusual circumstances. Providing a strong and large ensemble cast with the potential to keep the storylines varied and fresh, the scope and budget to fully develop characters and motivations, and that certain twist of science-fictionality that made the show's premise mysterious, *Heroes* had all the ingredients that made *Lost* a success.

But Kring wanted the show to avoid certain 'pitfalls' of *Lost*: 'not to posit an ending' and promising that 'something is going to happen every week' (Short 139, 142). The choices made to accomplish this were to concentrate strongly on the comic-book origin of the series, to provide more action and a faster pace – all in the name of 'surprising viewers with continuous twists' (Short 163). In consequence, the writers paid less attention to characterization, continuity, and plausibility and instead focused on comic-book spectacle. But missing coherent and credible world building, the series failed to draw younger and geek audiences as viewers for a sustained period of time.

A contrasting yet enlightening example in terms of audience success of comic universes is the already mentioned Marvel Cinematic Universe, in which both approaches to audiences are quite successfully combined. On the one hand, massively budgeted films such as *The Avengers* draw young and geek audiences with their visual spectacle, insider references, and fast-paced action. On the other hand, the mature characterizations and complex thematic issues of series such as *Daredevil* (creator Drew Goddard, US, 2015–) and *Jessica Jones* (creator Melissa Rosenberg, US, 2015–) provide intense drama for adult audiences. What connects the two and strongly diverges from the approach of *Heroes* is the fact that the MCU became a great success only after Marvel started its rigorous efforts to create a unified and coherent diegetic world – without the canonical supervision and close integration of each part of the MCU, the immense success would not be possible. This is where *Heroes* failed: World building became arbitrary in the series and audience identification with 'sloppy and inconsistent' characters started to fail: 'If a character can go anywhere, do anything, who really cares what they eventually do?' (Delucci, cited in Short 164).

Nonetheless, in its best form *Heroes* connects superhero fiction and mature TV drama to create an effective screen onto which the individual struggle with posthuman liquid modern realities is projected. The utopian impulse of progress towards a better society thus creates the goal towards

which the characters strive. The decisions of individuals take center stage in *Heroes'* depiction of liquid modernity as they determine the future – be it eutopian or dystopian. As Richard Reynolds has argued, the superhero narrative is an ideal vehicle for this kind of modern mythologizing of social and political structures and ‘a significant tension can be adduced between superheroes (assisting [the utopian] process) and villains (thwarting the Utopia builders [...])’ (24).

Heroes presents the stories of ordinary people that discover they are so-called evolved humans, or Specials,² with superpower-like abilities that let them fly, travel through time, walk through matter, or become invisible. The show is composed of four seasons on television with 77 episodes, but the diegetic universe presented is also continued in additional graphic novels (173 issues), the alternate-reality game *Heroes Evolutions* (engaging players through websites, blogs, iStory volumes, and other telecommunication channels, e.g. voicemail, SMS, and emails; for a discussion of the interactive media, see Hassapopoulou), and the reboot miniseries *Heroes Reborn* (one season with 13 episodes).

As mentioned above, the structure of the show is unique in its deference to its comic origin, in that it is told in volumes, each of which completes a storyline in either one full or one half-season. In each volume, the Specials face an impending disaster that might destroy the world and needs to be averted. In volume one, ‘Genesis’ (season 1),³ the Specials struggle with their abilities and changing status, while a nuclear explosion threatens to destroy New York and needs to be stopped. This volume also introduces a clandestine organization, called the Company, which captures Specials and evaluates their threat level, trying to track and control them. In volume two, ‘Generations’ (S02), a Special plans to release a deadly virus into the world, wanting to wipe the earth clean from humanity. This volume also explores the history and heritage of the parent generation of Specials that founded the Company. In volume three, ‘Villains’ (first half of S03), two opposing groups (split apart from the Company) start a conflict over the creation and use of a formula that can artificially produce Specials – one group wants to destroy the formula; the other wants to use it and market it for profit. In volume four, ‘Fugitives’ (second half of S03), Specials are being hunted

² During the show, the characters are referred to as ‘them,’ ‘evolved humans,’ and later ‘Specials.’ The latter term seems to reflect the show’s constant concern with characters wanting to be recognized as special and extraordinary. I will adapt the use of ‘Special’ for any character with a superpower in *Heroes* – both evolved and created Specials.

³ In the following I will shorten references of season and episode to ‘S#’ and ‘E#,’ e.g. ‘S01E01.’

and imprisoned by a branch of the US government, which perceives them as a terrorist threat. The struggle for human rights and freedom and the abuse of power are negotiated in this volume. In volume five, 'Redemption' (S04), a Special gathers others of his kind around him in a sanctuary, but secretly plans to use them to enhance his ability. His plan is to reveal Specials to the world and assert their superiority over 'normal' humans.

The graphic novels and *Evolutions*, which were released online parallel to the show, enhance the character development of the existing Specials, add new storylines, and deliver background on evolved humanity, the Company, and neglected characters. In contrast to other shows, *Heroes* makes extensive use of transmedia storytelling, thus challenging regular TV viewers by excluding certain information from the TV show and providing specific background or history of events online only (see Hassapoulou). Consequently, I will incorporate information from the graphic novels and other transmedia outlets in my analysis where and when necessary. At the time of writing, the reboot miniseries was still being filmed, and thus it will not figure into the analysis.

Before discussing the show's use of alternate timelines and possible futures as a means of exploring the utopian dimension of posthumanity, I would first like to concentrate on its specific construction of the posthuman and its connection to the superhero genre.

6.1 Superheroes, Posthumanism, and the Ordinary

The figure of the superhero has undergone many changes over the course of the twentieth century, the last of which – caused by postmodern ideas of deconstruction – brought with it a 'fissure of immense proportions' that not only shattered existing comic-book stereotypes, but also complicated moral definitions indefinitely, so that superheroes no longer purely worked as 'symbolic facilitators and embodiments of civilizing processes' (Ndalianis, 'Comic' 8), but became complex, flawed, and ambiguous. With the emergence of liquid (or post) modern realities, superheroes needed to adapt – their role was thus masterfully 'scrutinized, deconstructed, reconstructed, and ridiculed' (Ndalianis, 'Comic' 8) by new generations of comic-book artists, allowing for a renewed interest in superhero fiction that explored 'a more complex psychological approach' to the genre and that specifically addressed 'a more adult, serious readership' (Coogan 1).

The comic trend was then picked up and transported into other media by an increased interest from Hollywood, making the twenty-first

century rife with superhero narratives, as discussed above, on both big and small screens alike. David Bordwell argues that many different factors have come together to allow this rise of the superhero genre in the last ten to fifteen years: shifting production needs and new technologies (CGI, IMAX, 3D), the marketing tie-ins of large franchises (as discussed with the MCU), a tendency towards exaggeration, especially in visual representation of story and character, and an overall creative belief in “dark” themes,’ which ‘carry more prestige than light ones,’ nurturing a serious tone as legitimizing action-based cinema (32).

Tim Kring’s *Heroes* arguably set out to engage some of those aspects as it hybridized comic aesthetics with personal drama to create a more adult-oriented TV show that elevates ordinary people to the status of superhero, realizing a potential for quality TV in ‘a mild-mannered person who reveals something extraordinary you never saw coming’ (Kring, cited in Kushner). As Kring discusses in an interview with *Wired*’s David Kushner, his superheroes are built from ‘personal struggles and predicaments and assigned special abilities to suit,’ and when they ‘develop their powers, they don’t strap on spandex and capes – they grapple with these strange developments like believable human beings.’ In this, *Heroes* both reveals a connection with classic superhero comics and at the same time challenges and deconstructs some of the prototypical conventions of superheroes.

According to Peter Coogan, there are three conventions that make up a typical superhero: ‘A heroic character with a selfless, pro-social *mission*; with *superpowers* – extraordinary abilities, advanced technology, or highly developed physical, mental, or mystical skills; who has a superhero *identity* embodied in a codename and iconic costume which typically express his biography, character, powers, or origin’ (30, emphasis added). Interestingly, *Heroes* shifts the correlation of biography or origin from a hero’s identity (name/costume) to their superpowers. In providing not so much origin stories for unique individuals but one singular origin story of genetic evolution, the show foregrounds the superhero’s identity as the main issue of the series. It does so by ignoring the iconic representation of the hero’s special status and abilities, externalized in the superhero’s costume, symbol, and name, and instead collapses their superpower and discussions of their heroic mission into the category of ordinary life, which would have traditionally been the secret identity. As Ben Strickland argues, ‘The *Heroes* characters have no need for costumes because they act as themselves. Their mission to save or destroy the world does not require that they hide, only that they discover who they are and what they can do’ (96). There are two marked exceptions to this denial of superhero identity: (1) Gabriel Gray (Zachary Quinto)

uses the alias 'Sylar' to mark his departure from his ordinary life as a watchmaker and the decision to kill in order to be 'special,' thus establishing him as the series' ultimate villain. The name 'Sylar' becomes an iconic representation of his fragmenting self (see Hilton). And (2) Monica Dawson (Dana Davis) takes on the persona of 'St. Joan,' a hooded avenger from one of Micah Sander's (Noah Gray-Cabey) comic books. When she does, she fails to live up to the comic heroine, gets into trouble, and is kidnapped (S02E10) – highlighting the problems and consequences of becoming a superhero.

Where Superman and Thor are aliens with godlike powers, Batman is rich beyond imagination (thus allowing him to buy all his gadgets), and Spider-Man, the Hulk, and the Fantastic Four had singular accidents that could not be repeated but that triggered their powers – facilitating their uniqueness and extraordinary origin – the characters of *Heroes* discover their powers to be the result of specific genes that are dormant and get activated (S01) or that can be introduced via an artificial formula (S03; see Round 58). The Specials are superheroes in the sense that they 'possess skills and abilities normal humans do not' (Fingerroth 17); nonetheless, their extraordinary ability does not elevate them above the ordinariness of their surroundings (see Reynolds 16). Rather, *Heroes* emphasizes that heroism grows out of that ordinariness and is allegorically connected to it:

As we got to know each hero we realized their powers compensate for specific lacks in their lives. A self-effacing cop becomes the ultimate crime fighter when he acquires the ability to hear people's thoughts; a high-school student who discovers she is adopted also realizes she is virtually indestructible; and a male nurse, dismissed as a low-achiever by his family, discovers his natural empathy is the most important power imaginable. (Short 147)

In *Heroes*, the extraordinary ability manifests due to a combination of specific genes, similar to the 'X-gene mutation' of the *X-Men* comics (but in *Heroes* as a naturally occurring evolution, not of alien origin⁴). In the first season, Chandra Suresh (Erick Avari) develops a mathematical algorithm 'using human genomes and DNA migration patterns' (S01E01) alongside the genetic data from the Human Genome Project in order to identify Specials among the normal population. Later, his son Mohinder Suresh (Sendhil Ramamurthy) discovers the genetic marker, 'four simple

⁴ The alien origin of the X-gene mutation is part of the Celestials storyline in *Eternals* #1–12 (1976–77).

genes, they answer everything' (S01E18), and begins work not only on identifying Specials but on deliberately controlling the activation of the ability. Unfortunately, in an inconsistency in writing in season 3, he argues that the abilities are an evolutionary stress mechanism produced in the adrenal glands as an exaggeration of the 'flight or fight' response: 'My father had it all wrong. For years he had been working on a formula, trying to isolate the gene for these abilities [...] These abilities don't originate in the blood, they're produced from adrenaline' (S03E01). He discovers that there is a formula to artificially induce the abilities in the DNA of those not born with it and that it has been used before by the Company, a clandestine organization founded to control the potential threat of Specials (S03E03–E05). Important to note here, ignoring the inconsistency of the scientific location of the abilities in the script writing, is thus that the potential to become posthuman is already naturally a part of the human since at least ancient Egypt (*Heroes* webcomic #71, 'The History of a Secret') and thus simply represents an evolutionary step, not something 'against the laws of nature' (S03E01).

This distinction is important, as it stresses that Specials are ordinary people in that their ability is simply a part of them, neither curse nor blessing but a genotype. In terms of viewer accessibility, the posthuman evolutionary explanation for these abilities is relevant, as it allows viewers to identify with the personal struggles of the characters: 'The person across from you on the bus could be one. Your teacher could be one. *You* could be one' (Fingeroth 107). As Danny Fingeroth further explains, the status as special, yet ordinary, addresses viewers' needs: 'We want to both stand out and blend in. We want to be accepted by the group [...] yet still be appreciated for the unique and wonderful individuals that we (hope) we are' (98). No superhero identity (name, costume, origin story) is necessary to act heroically.

This is especially important, as the series makes explicit that, 'during times of world crisis, more people with special abilities find their powers "switched on" [...] They seem more likely to become activated when the world needs more heroes, although not everyone with a special power wants to help save the world' (Porter, *Tarnished Heroes* 152). This is in concert with Kring's vision that contemporary society is in dire need of heroes: 'I was noticing how agitated most people are about the world in general, the big issues that are really hard to fix' (cited in Kushner). The insecurities of liquid modernity, of a world spinning out of control, seem to be resonating with Kring, who says that he sees the show as a utopian form, a 'wish fulfillment, that somebody is going to rise up among us ... and actually be able to do something about it' (cited in Porter, Lavery, and Robson 3).

Kring's analysis of contemporary anxieties about 'the big issues' and our wish for 'somebody' to do something about the situation thus underscores the assessment of liquid modern society as individualized, as discussed by Zygmunt Bauman, Ulrich Beck, and Elisabeth Beck-Gernsheim (see the discussion of individualization in chapter 5). The 'widespread belief that things are out of control in the post-Cold War empires of worldwide capitalism and equally widespread expectations of impending global disaster, whether ecological or socio-political or both' (Aichele), are acknowledged in the series, but responsibility for solving these issues is assigned to individuals, not to global or national institutions. If anything, in the series, (quasi-)governmental institutions, such as the Department of Homeland Security branch 'Building 26' or the Company, fail consistently at solving global issues, and much of the utopian tension of *Heroes* derives from the avoidance of possible futures generated by attempted global solutions, as I will show below. At the heart of the series is thus the belief that 'one person can tip the balance to instigate a society-changing course of action' ('Redemption' 15), as Lynette Porter writes. She also points out, 'That belief, however, doesn't mean that one person always can control the outcome of his or her action or must work for the greater good' ('Redemption' 15). Kring similarly argues that individuals might be able to change things, while retaining a notion of global linkage:

There's a message of 'interconnectivity' that's really powerful in the world right now. This idea that we're all somehow connected for some greater purpose. The idea that there could be people among us, or even ourselves, who could do something about current issues, I think, is a huge part of why the audience is connecting to this show. (Cited in Short 150–51)

The connection between individuals is thus at the heart of the show, but it is not always based in mutual understanding and openness, but sometimes established through persecution. Specials constantly feel the threat of social ostracizing and even political persecution; the show overtly comments on racism, sexism, and othering, similar to the X-Men comics: 'the isolation of mutants and their alienation from "normal" society [...] can be read as a parable of the alienation of any minority' (Reynolds 79). Indeed, many Specials do not easily accept their powers: Many wish to hide them (e.g. Claire, Nathan, Tracy) out of fear, whereas others would like to be 'cured' and return to a normal life (e.g. Ted, Maya, Jeremy). In presenting Specials as other, Torsten Caeners argues, the series discusses US ideological concepts such as the melting pot

or the frontier mythology: 'In this context, the idea(l)s of liberty and equality also become pertinent. Furthermore, the series [...] presents the audience with questions about the frontier of human existence and of whether or not the series' "heroes" represent a new species, another step in human evolution, or an abomination' (132).

In its rhetorical and linguistic marking, the series exemplifies this othering. As has been mentioned, the show uses the term 'Special' for people with 'abilities,' which on the one hand shifts the register from superhero comics to more everyday terminology (see Round 61), but on the other hand connotes a dual meaning. 'Special' in the sense of 'precious' or 'extraordinary' also holds the euphemistic medical or psychological evaluation as 'other' and in need of different treatment – mentally or physically disabled children are referred to as being 'special.' This is further stressed by scientific objectification in the show: 'By medicalizing, even pathologizing abilities and those who have them, a "scientific" approach supports the notion that abilities are a disease that can, perhaps must, be "cured" or eradicated' (Jowett 120). Mohinder articulates the 'us'/'them' dichotomy, in a dystopian future timeline, when he refers to having abilities as a 'condition': 'It is hardcoded in their DNA. It is like they are a separate species' (S01E20).

In contrast, the series' appeal stems from its sentiment that both cause and effect of contemporary problems are global, interconnected, and egalitarian, affecting all life on earth (see Chan 144) – in this the show demonstrates a belief in the Anthropocene (as discussed in chapter 3). *Heroes'* global outlook shows in the (not always successful) attempt 'to eschew essentialist conceptions of the world and politically reactionary articulations of gendered, sexual, racial, cultural, and national identities' (Chan 149). Evolved humanity is diverse and transgresses the boundaries of white, young, male, and privileged subjectivity – in that, it lends itself to a critical posthumanist reading, even though the more radical breaks with privileged positions occur in the graphic novels, not the TV show. Specials include several generations (and thus age groups), male and female characters, and members of all nationalities, including major parts in the TV show for people of color: Hiro Nakamura from Japan, Mohinder Suresh from India, René 'The Haitian' (Jimmy Jean-Louis) from Haiti, and Maya Herrera (Dania Ramirez) from the Dominican Republic. The show similarly addresses issues of class, featuring characters from working class, such as Niki Sanders (Ali Larter), D.L. Hawkins (Leonard Roberts), and Monica Dawson, to upper class, as represented by the Petrelli family. The show even focuses on the transgression of possible perceived boundaries in that Peter Petrelli (Milo Ventimiglia), born into the elite New York family, choses a career

as hospice nurse and later paramedic. Further, as Bronwen Calvert notes, *Heroes* takes great pains to undermine the traditional image of the hero as 'able-bodied,' in that the show's 'external representation of these "different" and "special" bodies [...] allows, and even encourages, the destabilization, subversion and disruption of conventional notions of "the hero" and of the "heroic" body, so that we see the collapse of the classic "wimp/ warrior ... duality"' (19). In all their diversity, the show portrays Specials not as ideal representations of US society, but as a realistic intersection of many different and global societies: 'This narrative stresses the everyman hero, and shows us bodies which may possess special abilities, but are not particularly tall or muscled, which occasionally are small, or even slightly overweight' (Calvert 25).

What connects the characters of *Heroes* is thus not their similar background or even just their special abilities; what connects them are the challenges of life, the small intricacies of integrating their ability with normalcy, of facing everyday challenges of job, family, economic burden, and life decisions. In addition, these individuals are tasked with not only sorting out their own lives, but – as Kring has said – tackling the big issues as well. They all feel that something has to change and the manifestation of their ability compels them to act: 'Heroism becomes a genetic imperative of the few, who can then wield their power as they see fit' (Porter, Lavery, and Robson 6). The shift towards a posthuman future brings with it a utopian potential – it opens up the possibility to change the status quo and effect change, even a radical break with what has been, as George Aichele points out in a Judeo-Christian apocalyptic reading of the series: '*Heroes* points toward the death of humanity [...] The posthuman being will be either a god or a monster – or both at once, as *Heroes* tells us.'

The show is very strongly humanist in its outlook, though: It is a 'hymn to humanity's potential' (Short 164), positing that Specials are human and not a 'different species.' In connecting all human life, the grand gesture of the show suggests, all obstacles can be overcome:

We are all connected. Joined together by an invisible thread, infinite in its potential and fragile in its design. Yet while connected, we are also merely individuals. Empty vessels to be filled with infinite possibilities. An assortment of thoughts, beliefs. A collection of disjointed memories and experiences. [...] Therein lies the great quest of our lives. To find. To connect. To hold on. [...] Capable of repairing our fragile world, and creating a universe of infinite possibilities. (S03E25)

6.2 The Utopian Potential and the Dystopian Future

These infinite possibilities – the potential for ‘our’ future to become either eutopian or dystopian or anything in between – are central to the series. So much so that its most symbolic image is the show’s logo of a solar eclipse, a cosmic event that inserts a marked anomaly into the lives of the characters. The image itself, as Mary Alice Monroe notes, is ambiguous, leaving the viewer hesitant ‘whether that bit of sun is the final glow about to be swallowed by the black or the first light beginning to emerge as darkness ends,’ opening up an interim space that needs to be negotiated and in which ‘all futures are possible’ (152).

The eclipse represents a moment of pause, in which categories and boundaries are transgressed – when day becomes night, when light becomes dark. As such, it is a strong visual image for an altered perception of the world, a perspective outside of the usual range. For Steven Peacock, the eclipse comments on the show’s political and social struggle to come to terms with the events of 9/11 – the image ‘gravely reflecting on the dark days of a new world order – a world “changed forever”’ (143).

The eclipse features twice in the diegesis of the show, once in S01E01, when the characters seem to ‘awaken’ to their posthuman potential, realizing their status as Specials. And once more in S03E10–E11, when a similar eclipse temporarily removes the characters’ abilities, rendering the Specials non-special and thus initiating a moment of revelation in regard to the personal consequences of having abilities. In both cases, the eclipse is a catalyst for Specials to make a choice, to act, and to choose a path for their lives that might lead to alternate futures: The eclipse represents utopian possibility.

Furthermore, the show highlights the utopian potential of becoming posthuman as a way to deal with the big issues, most importantly by channeling the liquid modern realities of an economically, ecologically, and politically globalized world into plotlines centering on ‘anxieties concerning time: the longing to correct mistakes of the past, the panic of living in a hypersensitive present, and the fear of the premediated future’ (Ames 111). In this, *Heroes* emphasizes history as a product of human progress and the importance of individuals that shape it through their decisions and interventions, a notion deeply entrenched in humanist exceptionalism. Nonetheless, the show, in revealing a posthuman ability to travel through space and time and to change both past and future, simultaneously undermines notions of a linear teleology, instead allowing for progress to be disrupted or reverted,

opening up multiple historical and narrative paths and suggesting that people can switch between them or even (at least if they are heroes) redirect them. Events in the future can change the past, even to the paradoxical extent that that particular future never happens. *Heroes* suggests that this multiplicity of pasts and futures is both our peril and our salvation. (Aichele)

In *Heroes*, the shapes of our past, present, and future become fluid and malleable. The utopian potential of posthumanity consequently lies not in its ability to continue onwards with human progress, but in its ability to change every aspect of past, present, and future in order to form either a eutopian or a dystopian reality. Posthuman subjectivity thus ‘may have the power to destroy humanity’ (Porter, ‘Redemption’ 14) or to redeem it – the challenge lies in the moral consequences of these actions and in controlling the ability to achieve the wished-for result.

The show emphasizes these aspects of posthuman utopian potential in presenting a series of possible future scenarios and the attempts to either bring them about or thwart their becoming reality. Three major ‘possible futures’ timelines are portrayed in the series: the ‘explosion future,’ the ‘outbreak future,’ and the ‘exposed future’ (terms taken from fan discussion on *Heroeswiki.com*). In all three scenarios, posthuman abilities (such as time travel or clairvoyance) allow the characters reliable glimpses into a dystopian future, which then prompt the plot in the present: A conflict ensues between two parties, each trying to manipulate events in order to bring about the desired changes in the timeline, either to allow the future to become reality or to stop it from coming to pass. In the following, I will analyze the ‘explosion future’ as an example of how the show enacts these possible scenarios and in them negotiates the utopian potential for change in the present.

In season 1, Hiro Nakamura (equipped with the ability of ‘space-time manipulation’) accidentally travels five weeks into the future and witnesses a nuclear explosion in the center of Manhattan (S01E02). It is later revealed that the explosion is caused by a Special losing control of the ‘induced radioactivity’ ability, but it remains unclear until the last episode of season 1 who the ‘exploding man’ (S01E23) is. It also turns out that the events leading to the nuclear explosion are part of a larger plan of one faction of the Company that wants to facilitate change in the world. Crime boss Daniel Linderman (Malcolm McDowell) reveals to politician Nathan Petrelli (Adrian Pasdar) the origin of the Company and its intentions:

When my day of judgment comes, Nathan, I will be remembered as a humanitarian. I care about the world, I just want to save it, heal it [...] I was a lot younger than you when I discovered my power. And there were others too, like me, who discovered theirs. We were all confused. And we found each other. Together, we tried to make a difference to the world. And for a while, we did. It was beautiful. And then some of my ... friends ... they lost their way. They used their powers for personal gain. And all the good that we'd done was – well, it amounted to nothing. And I learned that healing one person at a time was just not enough. We needed something – something to pull it down on course, something big. (S01E19)

He goes on to explain that he wants the explosion in New York to occur, and that in fact, he has planned it meticulously. In his reasoning, killing '07 percent' of the world's population in order to facilitate a 'brighter future. Peace, prosperity' is easily justified:

This tragedy will be a catalyst for good ... for change. Out of the ashes, humanity will find a common goal. A united sense of hope couched in a united sense of fear. And it is your destiny, Nathan, to be the leader who uses this event to rally a city, a nation, a world. Now you look deep into your heart. You'll know I'm right. (S01E19)

As Ben Strickland argues, Linderman's motivation is justified in that the world really is in trouble and things need to change: 'Dismayed with the condition of man, he is trying to create a utopia [...] The troubling thing is that he is right. He has a point. People are not living as well as they could and [...] Linderman wonders how to make it right' (99). Two episodes later, Nathan is still questioning the Company's wisdom in creating a utopia through planned destruction when his own mother, Angela Petrelli (Christine Rose), reveals her participation in the plan and compares it to Truman ending the Second World War and ringing in an era of relative peace and prosperity (for the US):

A lot of people put time and care into making this a reality. Myself included [...] Important men make impossible decisions. President Truman dropped two atomic bombs on Japan to end World War II. Killed thousands to save millions [...] That is your one weakness, Nathan – you have no faith. So how could you possibly believe this bomb could actually heal the world if you have no faith in the idea of destiny? Your destiny, Nathan, is to set the course of

history after this unspeakable act has occurred. The people will look back on what you do as the freshman congressman from New York, and they will thank you – for your strength, for your conviction, for your faith. (S01E21)

It is important to note that in contrast to Linderman's and Angela's claims, the series does not mark the 'explosion future' as eutopian; instead the Company and its prospective future are set up as dystopian. On the one hand, the serial format and long story arcs highlight the gradual disclosure of the clandestine, secretive powers of the Company, working to manipulate Specials for its own purposes. Each episode reveals the interconnectedness of the characters and the machinations of the Company in trying to manipulate the events to produce the desired outcome. As the events unfold, the characters seem to be caught in a web and fighting against the odds. But even more importantly than marking the Company as 'villain,' the series first and foremost establishes the 'explosion future' as dystopian by visual means. Apart from Hiro, who has witnessed the explosion, the future developing from that event is experienced only through the prophetic paintings of artist Isaac Mendez (Santiago Cabrera; artworks created by artist Tim Sale for the show). Isaac's art is drawn in expressive comic style, vividly colorful (e.g. a menacing red for the explosion) or darkly oppressing, drastic in its exaggeration of outlines. The images of the explosion and the aftermath of a devastated New York strongly reference the 9/11 attacks and thus evoke feelings of terror and suffering.

The mission of the characters to stop this dystopian future is thus – for roughly twenty episodes – presented as a continued struggle against the specter of another terrorist attack (allegorizing the attacks of 9/11). The message is clear: Ordinary people are given the power to fight against a possible terrorist act and their decisions and actions will determine the shape of the future. As Monroe argues, 'since 9/11, we are perhaps collectively foreseeing a terrible future and shuddering at the view' (162), and *Heroes* reminds its viewers that their own actions can prevent such a future.

In S01E05, the 'explosion future' version of Hiro, a dark, brooding, and dangerous-looking sword fighter, announces to Peter that in order to save the world, he has to save the cheerleader. When Hiro and his friend Ando Masahashi (James Kyson Lee) jump five years into the future (S01E20), they notice that saving the cheerleader has not led to the desired outcome and the world is indeed not saved (yet). The efforts of the show's heroes during the last 15 episodes have thus not come to fruition, and before the finale the dystopian vision of the future

is presented more overtly to motivate stronger heroic actions. In the allegorical episode 'Five Years Gone,' *Heroes* portrays a 'distorted image of ourselves' (Monroe 162) in the wake of 9/11. As the episode premiered five years after the 9/11 attacks and fictionally deals with events five years after the nuclear explosion, 'the kaleidoscope turns into a mirror' (Monroe 162) and the show reveals the absurdity of political action (by governmental institutions) against a perceived terrorist threat.

In this dystopian vision of the future, villain Sylar has killed Nathan Petrelli, the leader destined to unite humanity in hope, and is now impersonating him. Sylar (as Nathan) becomes President of the United States and enacts draconian measures against all evolved humans, enforced by the Department of Homeland Security: 'We have outlawed their breeding. We have confined their movement. We police them, we track them, their attacks continue. Their population is increasing exponentially' (S01E20). In keeping with Tim Kring's argument from before, the show here seems to suggest that the 'explosion future' is indeed dystopian in that more 'big issues' arise and none are resolved. Instead of creating prosperity, the 'explosion future' has only increased inequality and suffering, thus creating a stronger natural 'need' for more evolved humans to solve those issues.

In this future, the former 'good guys' Hiro and Peter, like many other Specials, become terrorists fighting against the government and its solution to these issues. The episode portrays them as clichéd dystopian foils to their cheerful present counterparts – the heroes become jaded and cynical; they have lost hope, fight out of despair, not out of a utopian belief. Their change is represented visually in their dark clothing, Peter's massive facial scar, and Hiro's markedly controlled and less boyish hairstyle (goatee and slick ponytail instead of ruffled mop), acoustically in their dark, husky voices, and in terms of actions in their reliance on violence to solve conflicts instead of persuasion and compassion.

The darker, dystopian future has an impact on the characters, in terms of their situations in life, their visual style, their actions, and their motivations. Peter's friendly, positive outlook on life, for example, has changed as radically as his appearance: He hides from the world, associates with the crime world that used to be Linderman's (Las Vegas, strip clubs), and refuses to participate in helping persecuted Specials. He feels guilt and remorse about New York but has lost all hope to alleviate the situation. In depicting the changing motivations and alliances in the future scenario, the show emphasizes that the roles of heroes and villains are, in fact, situational. Decisions and actions can affect characters so strongly that they switch sides – the consequences and outcomes of events are never quite foreseeable and everyone can change.

The driven scientist Mohinder, for example, is at first excited about evolved humanity, seeing it as ‘a new gateway to evolution,’ ‘the threshold to true human potential’ (S01E01), and wants to help Specials in realizing their power. The catastrophic explosion changes his motivations and he becomes part of the governmental effort to create a scientific ‘solution’ to the ‘problem’ – providing risk assessments and trying to find a cure for the evolved genes. After five years of research he has to admit failure in terms of ‘curing evolution,’ prompting the President (Nathan/Sylar) to enact a secondary protocol, a ‘potential solution’ proposed by Mohinder after the destruction of New York, when originally confronted with the potential of Specials’ powers: ‘extinction’ (S01E20). Nathan/Sylar announces a cure and orders mandatory vaccinations that will kill evolved humanity, already preparing to blame the deed on the somewhat daft Mohinder, once more using political manipulation in order to bring about a eutopian future: ‘I’ll say you made a mistake. A fatal error. At first, the world will mourn. They’ll be united in grief. And then they’ll just be united’ (S01E20). In a speech at ‘ground zero’ in New York – openly mirroring the imagery of 9/11 memorial ceremonies and the rhetoric of justification for the war on terror – Nathan/Sylar declares utopia to have come into existence:

We’ve won battles the world over. Not only against those that would do us harm, but against poverty, reclaiming the environment [...] Our hope has always been that a great peace is on the horizon, that one day wounds would be healed and salvation could be found. I’m here to tell you that that day is today. I’m proud to announce that we have developed a treatment, a method to reverse the genetic code [...] Cities and families can be reunited. And we can finally live without fear. We’ve been vigilant. We have been uncompromising – and our efforts have paid off. The nightmare is over. The world is saved. (S01E20)

The show, especially in ‘Five Years Gone,’ openly flaunts the manipulation of events to favor a specific political outcome. Utopian possibility is invoked time and again as institutional structures and organizations try to control and shape reality: ‘The show thus presents science, politics and the family as social institutions designed to regulate citizens, either through benign protection or total social control – one person’s utopia is another’s dystopia’ (Jowett 120). But what it also reveals is the impossibility of institutionally managing the outcome, of securing a certain utopian ideal through hegemonic structures. By forming loose and shifting alliances based on perceived consequences and an

inherent morality of the choices given, individual characters become prominent players in the events. The cooperative effort of individuals – lacking the proper tools and abilities to address the issues alone – makes it possible that one person's actions might change the world, while fostering what Slavoj Žižek refers to as the 'emerging emancipatory subjectivity' of a new, diverse, and radically different form of 'communist culture' (*Living* xii).

In liquid modernity, safety, security, and stability have become elusive as former institutional 'agencies of collective purposive action [...] are clearly inadequate' (Bauman, *Liquid Modernity* viii) to deal with globalized risks and constant changes. The solving of problems (of even the big issues) is undeniably the burden of the individual, suffering any and all of the consequences involved – and sharing in this burden usually does not 'sum up into a "common cause" [...] The sole advantage the company of other sufferers may bring is to reassure each one that fighting the troubles alone is what all the others do daily – so reinvigorating the flagging resolve to go on doing just that: fighting alone' (Bauman, *Individualized Society* 48). At the beginning of *Heroes*, Specials do just that – they fight alone – but by gradually and successively revealing the interconnectedness, the show affirms its eutopian ideal,

that people can become extraordinary and work together for the common good. A hymn to humanity's potential was posited, creating a saga in which the ability to fly or heal are only as important as the ends they serve. Villains may epitomize the worst of humanity, yet our heroes shone a beacon of hope[.] (Short 164)

In this, the show reveals a utopianism that is concurrent with Bauman's, in that it posits a change towards a new form of social space in which the individualization of society (each of 'us' is 'special') is embraced, as it cannot be undone, while at the same time generating a strong incentive for 'co-operation and solidarity' (*Liquid Modernity* 90) (in order to bring together a group of disparate heroes to address the big issues): 'Although their powers make them "special" (this is often reiterated), they are not unique. Because their powers are not unlimited, the heroes often must work together, combining different abilities to overcome obstacles' (Aichele). For Žižek, this 'alternative community of freaks' thus forms a 'new collective' (in a Marxist sense), based exactly on their status as outcasts, due to their posthuman ability as much as their unwillingness or inability to fit into liquid modern society: 'Each of these handicapped, misfit individuals is incapable of functioning on his or her own, but together they add up to a complete being' (Žižek, *Living*

376). Their subjectivity remains intact – each member is necessary and valuable especially for his or her ‘freakish and “individualistic” [...] peculiarities’ (Žižek, *Living* 377). Their posthuman status is the necessary condition for them to form a new collective outside of existent society. Preventing the explosion and foiling the Company’s plans can, in the end, only be accomplished with continuous and combined efforts of those outcasts. The refusal of any one individual to participate could have led to the dystopian future (see Monroe 159). Creating a eutopian future is thus a never-ending process of continually making the right choices. Importantly, the collective of posthumans in *Heroes* is presented as making those choices not just for its own benefit, but ‘on the basis of a moral duty to guide and protect Homo Sapiens’ (Žižek, *Living* 377).

What the show emphasizes is that in liquid modern times, when problems and big issues are relegated to the shoulders of the individual, every decision becomes part of a larger network of interconnected moments that define the shape of our future. Being confronted with the posthuman condition thus elevates humanity to a global force itself – as expressed in the Anthropocene. The show naturalizes this phenomenon on the level of the individual (literally creating superpowered humans) and stresses the global reach of single-handed actions and decisions: ‘All these supernatural powers materially and psychically elevate Marshall McLuhan’s conception of the global village to a whole new level, hyperbolically heightening human connections’ (Chan 148). As Professor Charles Xavier (Patrick Stewart) aptly puts it in *X-Men: The Last Stand* (dir. Brett Ratner, US, 2006): ‘When an individual acquires great power, the use or misuse of that power is everything. Will it be used for the greater good? Or will it be used for personal or for destructive ends?’ In *Heroes* (as in the X-Men film series), the moral decision of acting for the ‘greater good’ is stressed as the superhero’s mission; how a Special (or mutant) uses their power is what determines them becoming a hero or a villain, and it is also what, in the end, determines the path to utopia. As David Simmons argues, *Heroes* is thus a superhero narrative of its time, complicating concepts of stability and security, but at the same time emphasizing the need for individual acts of heroism: ‘This more psychologically realistic reading of the superhero speaks to a contemporary era in which notions of heroism are being questioned yet remain relevant, at least on an ideological level’ (2). How individuals deal with the ethical consequences of posthumanity is thus central in determining the utopian dimension of the future.

9/11 and the Wasted Lives of Posthuman Zombies

The September 11 attacks were a monstrous calling card from a world gone horribly wrong. (Arundhati Roy)

7.1 A New Millennium

'The New Sociological Imagination,' a special issue of the *International Journal of Politics, Culture, and Society*, is a strange creature that only this specific historical moment at the beginning of the twenty-first century could have produced. In it, co-editors Hector Raul Solis-Gadea and Diane E. Davis gathered eight articles on the challenges posed to sociology by the new millennium, written by the most prominent social thinkers, among them Zygmunt Bauman, Ulrich Beck, Pierre Lévy, and Alain Touraine. What makes this project so interesting, though, is the timing of publication: The articles were conceived as a series of talks to be given at the New School for Social Research in New York from November 2000 to May 2001 (see D. Davis, 'Preface' 109). But the book version was not released until spring 2005. Acknowledged in the editors' writing, the 'emotional aftermath of 9/11' (D. Davis, 'Preface' 111) delayed the publication for understandable reasons but also left it in a hybrid position in terms of historical specificity: Written pre-9/11, the essays took a positive view of the new millennium that collided with the pessimistic views of a post-9/11 historical reality evoked by terror and grief. In 2005 the essays appeared nonetheless, accompanied by explications of the shifting realities of the historical moment: What had changed from pre- to post-9/11, and how did this influence sociology?

Under the heading 'Re-Examining the View from the Year 2000,' Diane Davis makes explicit the mission statement of the essays as an examination of 'the fundamental shifts in social practices, cultural discourses, business tactics, legitimization strategies, and national or

social identities that have accompanied intensified changes in technology, global capitalism, and the partial eclipse of the nation-state as the fundamental unit of analysis for understanding and taking political action' ('Speaking' 294). While most of the essays profess a positive and hopeful outlook in their call to find sociological methods engaging the realities of liquid modernity, globalized capitalism, and a hypermediated world, Diane Davis points out that Zygmunt Bauman does not share in the slightly more optimistic spirit of the other contributors – his essay is darker, more somber, and questions the effectiveness of sociology to deal with the new and drastically changed world. From the post-9/11 view, his essay seems profoundly more attuned to the massive sociological changes in the realities of the new millennium. Davis argues that before 2001 Bauman was alone in his writing to 'openly flag these changes as cause for serious disquiet or fundamental alarm' ('Speaking' 294), making his the most prominent voice of current sociological criticism.

Similar to the other essays in the issue, Bauman tracks some of the problems of contemporary sociology to the emergence of network society, as conceptualized by Manuel Castells, and its global realization in the last decade or two (see Solis-Gadea 118; Stalder 1). Indeed, one of Bauman's key criticisms in the essay is that a classical sociology is viewed to be ill-equipped to deal with the challenges that liquid modernity presents. He argues that it might be precisely the metaphor of 'society,' which conveys 'images of closeness, proximity, togetherness and mutual engagement,' that is threatened by '[l]iving in a network, moving through the network, shifting from one network to another and back with growing speed and facility' (Bauman, 'Chasing' 134). Instead of a solid and stable community, the network as metaphor represents movement, detachment, decentralization, speed, and flexibility – or liquidity. Bauman's prophetic critique of society in liquid modernity is focused on the destabilizing of the public sphere that goes hand in hand with a growing feeling of impotence and the incapability of individually addressing new challenges presented on a global, networked scale – a problem that he sees as 'the greatest challenge that confronts sociology at the threshold of the twenty-first century' ('Chasing' 141).

A few months later the terrorist attacks on New York 'won the stature of a globally legible signifier' (*Society* 87), thus proving Bauman's argument of a globalized society and the crossing of a threshold. The event, giving 'flesh to the heretofore abstract idea of global interdependence and the wholeness of the globe,' received its significance as a '*symbolic end of the era of space*' (*Society* 87). 9/11 is symbolic in the sense that, as Bauman argues, it symbolized long ongoing changes in the social make-up of our liquid modern world: the developments of

globalization, leading to individual life politics becoming increasingly uncertain, insecure, and unsafe. The one change best symbolized in 9/11, though, is the end of the connection between power and territory, represented in the nation state and its political alliances:

The events of 11 September made it obvious that no one, however resourceful, distant and aloof, can any longer cut themselves off from the rest of the world [...] Places no longer protect, however strongly they are armed and fortified. Strength and weakness, threat and security have now become, essentially, *extraterritorial* (and diffuse) *issues that evade territorial* (and focused) *solutions*. (*Society* 88)

Bauman sees 9/11 as the symbolic end of the era of space, which culminated in the Cold War and the territorial stand-off of supranational alliances, and which ended with the elimination of the Berlin Wall (*Society* 88, 12).

Philip Wegner argues along the same line of reasoning when he calls the ‘toppling of the World Trade Center [...] a form of second death, an incident that repeats an earlier “fall”, that of the Berlin Wall in November 1989’ (24). Drawing on Badiou, Lacan, and Žižek, Wegner describes the fall of the Berlin Wall as ‘a true Event: unexpected and unplanned for, an encounter with a traumatic Real’ (24), which led to the end of the Cold War but could not be realized in its symbolic magnitude. The fall of the Twin Towers, on the other hand, according to Wegner, repeats this first fall, destroying the symbolic order of the Cold War completely. Before 2001, the Cold War, though over, still lingered in symbolic revenant form until its second death. 9/11 is then the ultimate symbolic act marking the end of the historic period that is the Cold War and establishing – in George Bush Sr.’s words – a ‘new world order’ and a new period of global(ized) history (Wegner 25).

This new period, after the fall of the Berlin Wall, is characterized, Fredric Jameson comments shortly after 9/11, by the never before seen accumulation of money in the hands of private individuals so wealthy that they become elevated beyond the status of ‘normal’ citizen and enjoy a power level equal to nation states, including the control of paramilitary forces (‘Dialectics’ 302). One of the highly mobile and elevated global elite is Osama bin Laden, who effectively and in a ‘textbook example of dialectical reversal’ used his wealth to strike ‘symbolically at one of the rare centers of globalized finance capitalism’ (Jameson, ‘Dialectics’ 301, 303). The attack is aimed at the globalized power of US-dominated but in effect multinational corporations and the proliferation of consumer society via cultural imperialism. In the end, though, Slavoj Žižek argues,

both globalization and bin Laden's terror against it are just two sides of the same coin: 'are not "international terrorist organizations" the obscene double of the big multinational corporations – the ultimate rhizomatic machine, omnipresent, albeit with no clear territorial base?' (*Welcome* 38). In Žižek's rhetoric, terrorism is the global capitalist embodiment of fundamentalism (*Welcome* 38) made possible by the networks of a globalized liquid modernity, interdependent between nodes: '[One might] link globalization (7-11) and terrorism (9/11) together, stressing that they share in common both the logic of networking and an emphasis on mobility; that is, the "network society" and "terror networks" mirror each other in a mobile network space' (Diken and Laustsen 89–90). This, of course, clearly echoes Bauman's criticism in his pre-9/11 essay on sociology and the new millennium.

7.2 Zombie Fiction

As Arundhati Roy so aptly puts it in the quote opening this chapter, September 11, 2001, is a 'monstrous calling card' announcing the arrival of a different world order. And as with other calling cards, it prompted the called-upon to ponder the new arrival and its intentions. Western societies, especially the US, asked themselves: How did it come this far? How does one deal with this? It is then no wonder that the cultural imagination of the years following 9/11 is rich in critique of the social realities that led to the attacks and/or followed them, as well as rich in negotiations of the feelings of despair, apocalypse, and helplessness caused by this new variant of terrorism – both in the form of violent attacks and in the form of bioterrorism via diseases and viruses (prompted, for example, by the anthrax attacks immediately following 9/11). These topics have in recent years proven fertile ground for a cultural analysis of post-9/11 America, especially in regard to popular culture (Birkenstein, Randell, and Froula; Quay and Damico; Schopp and Hill; Melnick; Takacs) and its depiction of US society. As Kyle Bishop aptly argues:

The terrorist attacks of September 11, 2001, caused perhaps the largest wave of paranoia for Americans since the McCarthy era. Since the beginning of the war on terror, American popular culture has been colored by the fear of possible terrorist attacks and the grim realization that people are not as safe and secure as they might have once thought. ('Explaining the Zombie' 17)

Interestingly, one genre of film and television that easily lends itself to negotiating terrorism, paranoia, apocalypse, and crisis was one that for all intents and purposes had been forgotten by mainstream media for at least ten years and that was revived at the beginning of the new millennium with impeccable, even if coincidental, timing: the zombie narrative. Whereas the 1980s saw the popularity of the zombie movie peak, the genre virtually ‘ground to a halt in the 1990s’ (Dendle, ‘Zombie Movies’ 178; *Encyclopedia* 3). In terms of production, Glenn Kay argues, ‘big screen horror releases – zombie releases, in particular – slowed to a trickle. By the mid-1990s fewer new zombie movies were being released than at any point since the late 1940s; the subgenre had completely stalled’ (183).¹ But by the 2000s, the genre would prove apt to address the American social and political landscape so drastically changed by 9/11. As Elizabeth McAlister points out, ‘the American zombie is almost always a sign and a symptom of an apocalyptic undoing of the social order’ (474) and thus ideally suited to be used as a cultural cypher for an ever-adaptive barrage of social anxieties and fears.

Historically, the zombie was introduced into Western culture via early Hollywood film in its depiction of Haitian voodoo practices and the creation of slave labor (in films such as Victor Halperin’s *White Zombie*, US, 1932), but has been more influentially recast as the cannibalistic ‘living dead’ via George A. Romero’s films from *Night of the Living Dead* (US, 1968) onwards. A full presentation of the historical shifts and changes in zombie imagery and its cultural significance cannot be given at this point,² but there have been numerous critical analyses linking the zombie to slave labor, colonialism, capitalism, consumerism, dehumanization, xenophobia, ecocriticism, social crisis, and lately viral networks such as media, disease, and globalization (Dendle, *Encyclopedia* 5). Margo Collins and Elson Bond, for example, declare that contemporary ‘depictions of zombies illustrate spreading anxiety over both

¹ Lists of film releases (e.g. http://en.wikipedia.org/wiki/List_of_zombie_films) support this reading: Wikipedia lists 60 titles during the 1980s and only 30 during the 1990s, and more than half of these came before 1993. Instead, the zombie narrative saw a strong increase in zombie video games produced in the 1990s (see Kay 184; Pruett).

² For an overview of contemporary zombie scholarship, see the anthologies by Christie and Lauro; Fürst, Krautkrämer, and Wiemer; McIntosh and Leverette; Boluk and Lenz; as well as Dendle’s *Encyclopedia*; Lauro and Embry; Bishop, ‘Critical Investigation’; Green. Two important classical readings of zombie fiction can be found in Wood 101–07 and Shaviro 83–105.

social atomization and the loss of individual identity' and thus that 'zombies come to function as monstrous placeholders for potentially dangerous human interactions in an anomic society' (187).

7.2.1 The Zombie Renaissance

The latest revival of zombie films, the zombie's most common medial form, significantly overlaps with the symbolic threshold of 9/11, taking its cue from this event, reflecting in its imagery

the worst-case fears of an apprehensive media culture, entertaining the same anxieties about world events, in this case, a fear of terrorism and epidemic in the zombie form. Various zombie films came to be seen as a medium for western culture's 'crisis mentality,' a kind of vernacular expressing the concerns of a culture waiting for the next terrorist attack, the next outbreak of violence or the next pandemic. (Birch-Bayley 137)

Most interestingly for my analysis here, the key to understanding the renewed interest in the zombie film in the new millennium lies in its interconnection with liquid modern society and the biopunk genre. As stated before, the surge of new films began coincidentally right after 9/11, and taking into account the long planning and production period of films, one must thus conclude that their inception occurred before, and was not a result of, the terrorist attacks. In fact, the two films to spark the 'zombie renaissance' (to use Bishop's term) were decidedly produced before 9/11: Paul W.S. Anderson's *Resident Evil* (UK/Germany/France, 2002)³ was already in post-production by the time of the attacks and had to eliminate its subtitle 'Ground Zero' due to the historic events (Dendle, *Encyclopedia* 14, note 23). And Danny Boyle's *28 Days*

³ The film is based on Capcom's immensely successful *Resident Evil* video game series (the first game was originally released in Japan as *Biohazard* in 1996), which most prominently established the survival horror subgenre (alongside *Silent Hill* and *Alone in the Dark*; see Pruetz). The film series owes inspiration to the games in the form of characters, theme, and style (especially in terms of cinematography and editing; see 'Playing Dead'), but is essentially developed as a separate franchise. The independently produced film (by Bernd Eichinger's company Constantin Film, with a moderate budget of \$33 million) has become the seed of a highly profitable, high-gloss Hollywood franchise, spawning four sequels so far (a fifth is scheduled for 2016) and opening a diverging storyline from the game franchise.

Later (UK, 2002)⁴ was in the final days of filming in September 2001, with most of its inspiration deriving rather from the recent foot-and-mouth disease outbreak in Britain (Bishop, 'Explaining the Zombie' 23; Dendle, *Encyclopedia* 8). Its strongest scene (most reminiscent of 9/11 imagery) – the protagonist stumbling through a deserted London, finding a wall of posters with people looking for their lost ones – was inspired by an earthquake in China and not, as is commonly assumed, by the attack on the Twin Towers (Bishop, 'Explaining the Zombie' 22–23; Boyle and Garland), and Boyle even considered removing the scene from the movie, but in the end decided to keep it (Charity 73). Other works that expedited this 'renaissance' (i.e. mainstream popular success) include Zack Snyder's remake of the Romero classic *Dawn of the Dead* (US, 2004), Simon Pegg's satiric *Shaun of the Dead* (dir. Edgar Wright, UK, 2004), and Frank Darabont's television series *The Walking Dead* (US, 2010–), based on Robert Kirkman's series of graphic novels.

Nonetheless, both films that initiated the renaissance, *Resident Evil* and *28 Days Later*, reflect a renewed interest in the zombie as cultural cypher, in this case ideally conveying the changing social landscape of the 2000s, the liquid modern realities and especially ideas of globalization, viral networks, and posthumanism. Both films (as well as the sequels that followed in each franchise) are informed by a reimagination of the zombie apocalypse as caused by genetically engineered viral outbreak, unleashed due to corporate experiments with highly contagious viruses. Their innovative take on the zombie allows for liquid modern anxieties (as expressed by Bauman before 9/11) to meld with an uncertain posthuman condition, in order to produce critical dystopian imaginations of biopunk futures. The post-9/11 realities of globalized terror, continuous crisis, and the impotence of social institutions all find a recognizable correlation in the zombie genre's conventions and tropes. As Bishop argues, the structural elements of zombie films have not changed radically – zombie films before 9/11 are not that much different from films after 9/11. It is rather that the films' depictions of a breakdown of social institutions, the devastation of infrastructure, and the post-apocalyptic landscape in general are closer to the lived reality of 9/11 and thus have a much greater impact on today's audience: 'Initially,

⁴ Boyle produced the film independently and on a low budget of only \$8 million, shooting mostly with digital video cameras and refraining from larger visual effects. The film was highly successful and was followed by the 2007 sequel, also an independent production, *28 Weeks Later* (dir. Juan Carlos Fresnadillo, UK/Spain). A third installment, *28 Months Later*, was discussed but has not (yet) been realized.

zombie movies shocked audiences with their unfamiliar images; today, they are all the more shocking because of their familiarity' ('Explaining the Zombie' 24).

Nonetheless, there are noticeable shifts of emphasis in the genre's conventions that can be attributed to the changed realities of the twenty-first century, specifically to 9/11 and its aftermath regarding the global social order. I find these shifts, for example, evident in the film's biopunk representations of a posthuman existence. Whereas most zombies of the twentieth century were what Kevin Boon has termed either 'zombie drones' (the Haitian zombie) or 'zombie ghouls' (Romero's creation), many new millennial zombies such as those discussed here fall into the category of the 'bio zombie' (Boon, 'Zombie as Other' 57–58), who turn into zombies through some biological agent (virus, bacteria, disease, chemical) and are thus a variant of biopunk's representation of genetics as potentially reality-changing scientific progress.

Steffen Hantke notes a similar paradigm change in the representation of the zombie around 2002, most apparent in the 'Acceleration of the Undead' (a feature discussed further below), and analyzes this change in terms of capitalist modes of production and consumption ('From Fordist Plodders to Neoliberal Go-Getters') that are based in the same societal shifts as discussed by Bauman as liquid modernity. Hantke sees a speeding up of horror characters (vampires, werewolves, zombies) as characteristic of the changed realities of contemporary life since the 1990s and 'the neoliberal demand for the individual's constant vigilance and hyper-alertness.' He attributes these changes on the one hand to production aspects such as action-oriented franchises and digital special effects, and on the other to political changes in the leadership of the US. But, and Hantke emphasizes this caveat, paradigm changes occur over a long period of time, have a complex causality, and allow for 'internal differentiation [...] and the emergence of [...] competing morphologies.' Many ideological factors played into the changed themes and conventions of the zombie film, some originating before 2000 (such as neoliberal politics, liquid modern society, and biogenetic manipulation), while others, such as the radical implications of 9/11 for global politics, might have accelerated the changes – or at least one morphology of zombie cinema.

The *Resident Evil* franchise, with its now five films, seems ideally suited as a model of these changed themes and conventions, as the series' production time spans the last 12 years and significantly bridges pre- and post-9/11 sensitivities. A similar argument can be made for *28 Days Later* (pre-9/11) and its sequel *28 Weeks Later* (post-9/11), while of course other recent zombie fictions have taken up biopunk-specific elements

and incorporated them – and I will acknowledge some in my analysis. It is important to point out that zombie films can be differentiated into films for mainstream and for cult audiences (see Hantke, note 11). The analysis here is focused on mainstream films (based on box-office success, not production cost) and acknowledges that counter-examples of the tendencies discussed can be found in films after 2000 that are released for a specialized, cult-based audience community. Hantke terms this as a ‘deliberate and self-conscious opposition as a holdout’ to the new paradigm and a self-conscious generic decision. Similarly, some films from before 2000 incorporate aspects of my discussion here – either as avant-garde for the larger paradigm shift or simply as singular expressions of generic experimentation. My argument is simply that these aspects take until after 2000 to manifest in high-profile, successful, mainstream representation of the zombie and that the events of 9/11 accelerated this manifestation.

At the heart of the *Resident Evil* films⁵ are the machinations of the capitalist globalized entity Umbrella Corporation, which specializes in bioweapon research and which Alice (Milla Jovovich), the series’ heroine and rebellious ex-employee, refers to as ‘the largest and most powerful commercial entity in the world’ (RE5). In *Resident Evil* (RE1), during a break-in at the viral research laboratory called the Hive, a sample of the T-virus, a deadly and highly mutable virus that reanimates dead cells, is released. The Hive’s computer tries to isolate the contagion, trapping and killing everybody inside. When a security team arrives and reopens the Hive, the biohazard – in the form of the reanimated dead – is released and the team, including Alice, has to fight its way out of the Hive for survival. In the logic of the genre, which dictates that ‘the spread of a zombie virus is inevitable and pandemic is ultimately unavoidable’ (Birch-Bayley 144), the series enacts this spreading pattern: *Resident Evil: Apocalypse* (RE2) takes place in Raccoon City, where Umbrella tries to contain the biohazard first via isolation (by limiting access to the city) and then by eradication (a nuclear bomb is dropped on the city), leaving Alice and other survivors to again fight for their escape. With *Resident Evil: Extinction* (RE3) the contagion has spread across the globe, devastating the planet, not just its human population, and limiting survivors to a

⁵ Reference to the films in the following is by number in the format ‘(RE#).’ The film series, which was internationally co-produced in Germany, UK, France, Canada and the USA, consists of *Resident Evil* (RE1; dir. Paul W.S. Anderson, 2002), *Resident Evil: Apocalypse* (RE2; dir. Alexander Witt, 2004), *Resident Evil: Extinction* (RE3; dir. Russell Mulcahy, 2007), *Resident Evil: Afterlife* (RE4; dir. Paul W.S. Anderson, 2010), and *Resident Evil: Retribution* (RE5; dir. Paul W.S. Anderson, 2012).

life on the road, continuously fighting off the undead and scrounging for scraps of the former civilization. A broadcast from the aptly named Arcadia, an isolated town in Alaska, promises relief from this life, and the remaining humans set out to Arcadia in a helicopter. In *Resident Evil: Afterlife* (RE4), Alice arrives late in Arcadia, to find it abandoned and her friends missing. In her search for the others she arrives in Los Angeles and finds shelter in a prison, which is then attacked by the undead, leaving Alice and another survivor troupe to flee towards a tanker ship in the Pacific, claiming to grant refuge. Unfortunately, the ship is controlled by Umbrella, which uses it for experimentation on humans. In *Resident Evil: Retribution* (RE5), Alice is captured by Umbrella and brought to an underwater testing ground, which the corporation uses to stage massive human experiments in viral weaponry. Alice is rescued by a team of other survivors, all of whom then once more need to escape the facility and its hordes of undead.

28 Days Later and *28 Weeks Later* follow a similar 'zombie movie spreading pattern,' but significantly postpone the 'pandemic stage' to the epilogue of *28 Weeks* and the planned but not (yet) realized third film in the series. *28 Days* begins with bike courier, Jim (Cillian Murphy), awakening from a coma some weeks after the release of the experimental 'rage virus' (from a research facility through accident), which seems to have turned humans all over Britain into 'infected.' The infected are driven by rage to violently attack and either kill or infect the surviving humans. Jim – with a group of other survivors – needs to escape the civilization of London in order to survive, heading for a military outpost up north. In the end, the crazed and power-hungry military commander turns out to be even more dangerous than the infected and Jim, as well as two others, survive only in full isolation from any other groups. The film allows for a somewhat positive ending when the survivors are being rescued by military forces.

28 Weeks Later begins with the resettlement of Britain under the military protection of US troops and a strict quarantine zone, roughly six months after the events of the first film. Following the logic of zombie narratives, the quarantine is breached and the military leaders find themselves unable to keep the outbreak under control. The uninfected inhabitants of the zone need to fight not only the contagion but also the ruthless attempts of the US military to control, contain, or eliminate the infection. Containment fails and in the end the virus is seen spreading to the European mainland (i.e. Paris), thus promising a third film, with the action taking place '28 months later.'

7.2.2 Terror from the Familiar ... or the Other?

Many of the typical structural elements of classical zombie fiction are intact in biopunk zombie films. First and foremost, there is what Peter Dendle calls the 'depersonalization' (*Encyclopedia* 6) of the zombie, an 'absence of some metaphysical quality of their essential selves' (Boon, 'And the Dead' 7), a loss of something that defined their humanity before the change: 'Usually this entails a loss of volition [...] The person is no longer a person in either an existential or metaphysical sense' (Boon, 'And the Dead' 7). This is most drastically shown in what Lauro terms 'the terror from the familiar [...] made unexpectedly different' (232). In each film – as a staple of the zombie genre – a member of the group gets infected with the contagion but either is permitted to stay with the group or hides their condition until the change is effected. Motivation for remaining with the group is usually some human emotional bond, a feeling of responsibility or familiarity. When the film enacts the transition into zombie status as a violent change and an irreversible crossing of a threshold, there is a sudden and noticeable loss of humanity and the contrast of the two states (human/zombie), the loss of volition, and the depersonalization are highlighted.

The familiar turning into a threat, which the zombie film places in the center of human conflict for the remaining survivors, finds a strong equivalent in the emotional turmoil following the terrorist attacks of 9/11. What makes the 9/11 terrorists so threatening, Diken and Laustsen argue, is that they did not emerge from any marginalized group of society; they were not the other but rather lived as neighbors and guests in suburban US society (90). Fear and terror emerge from the possibility of becoming a victim at any time because anyone can be a terrorist – a deeper uncertainty cannot be felt. Terrorism, similar to its double, globalization, makes use of liquid modernity's breaking down of territorial nation states, political institutions, and social norms. Both rely on the new networks of mobility, speed, and flexibility. Furthermore, insecurity, unsafety, and uncertainty are at the heart of both terrorism and globalization. Before globalization, terrorists (e.g. the IRA, ETA) had a more localized (territorial, national) and very specific political agenda (retreat of the British from Northern Ireland, a separation of the Basque Country from Spain) and used smaller-scale attacks preferably targeting political adversaries (e.g. police, military, politicians – for example the attack on Margaret Thatcher in October 1984 at the Grand Hotel in Brighton). Which is not to say that there are not, of course, many civilian casualties in the 'old' form of terrorism (IRA/ETA) as well, either as collateral damage in efforts to strike strategic

(military, police) targets, or as part of an escalation of violence against the civilian collaboration in the later stages of the conflicts. Nonetheless, Al-Qaeda promotes a terror that is, in comparison, much more 'blind and diffuse. It operates stochastically and seldom demands something explicit from an identifiable adversary' (Diken and Laustsen 91). New terror is 'invisible, off-scene/obscene, and viral' (Diken and Laustsen 91) – there is no coordinated effort towards a clearly articulated political aim, no territorial aspect to the attacks, and no unifying strategy or goal, except to promote as much fear as possible.

But the zombie as metaphorical projection of fears of the other in the familiar is not quite enough to represent the new form terrorism had taken with 9/11. Globalized, viral terror comes with the unexpected and the incalculable as its inherent traits, giving no indication of any common elements that could be singled out and predicted. Movement, speed, and flexibility are the essential features of this threat, and it thus seems almost prophetic that *28 Days Later* should reimagine the zombie as 'infected' – not quite dead, but zombies nonetheless, adhering to Boon's category of the bio zombie as the infected lose their volition by means of a virus. Technically, the infected of *28 Days Later* are simultaneously 'bio zombies' and 'psychological zombies' (Boon, 'Zombie as Other' 58) in origin, as 'the root of the virus is psychological,' as Boyle claims, even though this is hardly acknowledged in the film, where it 'manifests itself in the most appalling physical sickness' (Harrison 74). Moreover, the transmission of the virus is somatic (biting or the spitting of blood), and thus the essential dynamics of the infected and the undead in zombie movies are mostly the same.

The key change that *28 Days Later* introduced into the zombie genre is that the infected were not the "walking" dead,' as Max Brooks satirically commented, who tended 'to move at a slouch or limp,' 'incapable of running' (13). Instead, the infected move at almost superhuman speed, as nothing but rage (as the virus is aptly named) is motivating their actions. There have been smaller B-movie productions in the 1980s (e.g. *Return of the Living Dead*, 1985) that provide predecessors to the infected, but in terms of impact for the genre *28 Days Later* is a game-changer. Here, human bodies become the macro-biological manifestation of the ultra-aggressive virus, viciously replicating themselves via instantaneously infectious bites and the vomiting of massive amounts of infected blood. Whereas classic zombie films presented the contagion as a slow-acting disease with an incubation period of hours, if not days, resulting in similarly slow-acting zombies, the infected of *28 Days Later* are as fast-acting as their contagion is – once bitten, it takes mere seconds to turn into an agile moving infected. In this shift lies the

posthuman potential to read the 'fast zombie' as culturally divergent from the 'slow zombie,' and it seems indicative of the need for a new metaphorical understanding that many films after 9/11 took the infected as model for their representation of any and all zombies.

The *Resident Evil* series is very enlightening in this regard, as the first film – produced before 2001 – is true to the original games and their inspiration by the Romero films, in that the reanimated dead of T-virus origin are slow and grotesquely moving. For RE1, director Paul W.S. Anderson felt the need to adhere to the 'rules of the games,' which meant ultimately adhering to those rules established by the Romero films, the most important of which is, 'you can't have fast moving zombies' ('Playing Dead'),⁶ as the classical zombie in its slow, relentless, and inevitable approach represents our fears of death:

Zombies are our destiny writ large. Slow and steady in their approach, weak, clumsy, often absurd, the zombie relentlessly closes in, unstoppable, intractable. However (and herein lies the sublime artfulness of the slow zombie), their ineptitude actually makes them avoidable, at least for a while. If you're careful, if you keep your wits about you, you can stave them off, even outstrip them – much as we strive to outstrip death. (Pegg)

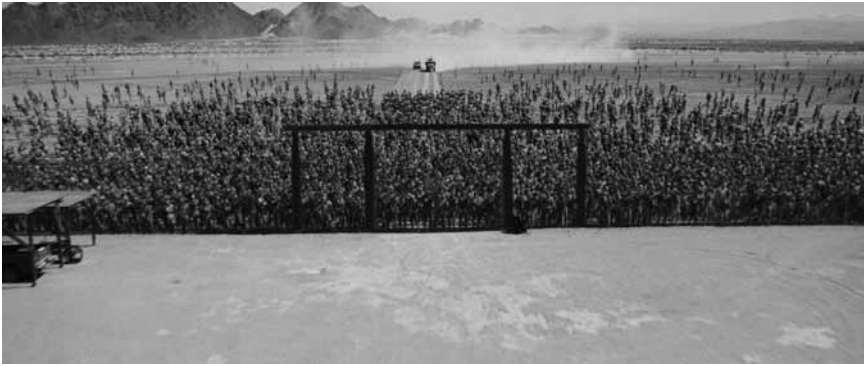
Simon Pegg's argument might bear a kernel of truth for a liberal humanist subject born into the relative security and stability of the 1960s and 1970s American or European white middle class of Romero's zombies (from which he extrapolates). But this is, of course, too reductionist, as death in liquid modern times has grown uncontrollably faster, more incalculable, and indeterminate. Pegg's subject is situated in the safety of still intact public institutions and a personal financial stability (e.g. a steady job, real estate, insurance, and the luxuries of consumer society), benefiting from stable baby-boomer economics and strong state-driven and well-organized institutions (welfare, healthcare, job programs, infrastructure, police and military protection) and resulting in a massively growing life expectancy (due to technological, medical, and economic progress in the post-WWII years). But these securities are dissolving as the middle class is losing its privileged position in liquid modernity. At the beginning of the twenty-first century, job

⁶ The importance of these rules to zombie fan culture cannot be overstated, as the internet discussion following Zack Snyder's *Dawn of the Dead* (2004), which reimagined Romero's classic film with fast-moving zombies, shows (see Levin; Hulsey; Pegg; Dendle, *Encyclopedia* 6).

security, financial safety, and personal healthcare are under attack by dehumanized institutions and corporate interests (through privatization of state institutions and neoliberal policy as well as judicature) – the middle class consequently becomes much more precariously situated (further discussed below). In addition, the modern form of terrorism (9/11, the London Underground bombings), viral pandemics (HIV, SARS, H1N1), and corporate profit-oriented strategies leading to human-made and natural ecological disasters (Deepwater Horizon, Fukushima, Hurricane Katrina) prove more than anything that death – destiny writ large – cannot be avoided by careful planning, by living ‘right’ and calculating risks. It should be noted here that the privileged middle class still is by far less affected by those global risks than the underprivileged, as they remain relatively financially secured and geographically mobile. Nonetheless, a growing threat potential is noticeable: Pandemics, terrorism, and disasters are only avoidable to a certain degree – 9/11 hit the heart of white-collar America; infectious diseases can potentially affect anyone. Security is thus a relative term. Instead, living in liquid modernity is defined by exactly the opposite, as Bauman argues: by having to face ‘by far the most awesome and fearsome dangers [...] precisely those that are *impossible*, or excruciatingly *difficult*, to anticipate: the *unpredicted*, and in all likelihood *unpredictable* ones’ (*Liquid Fear* 11).

Beyond the most obvious allegorical meaning (death), slow and fast zombies also reveal, as Peter Dendle argues, ‘competing underlying constructs of self’ in that they represent specific concepts of the human: Slow zombies reference an understanding of ‘humanity resid[ing] in the sum total of mental and emotional states’ (*Encyclopedia* 6). In an essentially humanist understanding, what makes ‘us’ human are ‘our’ personal feelings and desires – and all that is gone from the zombie, making it merely an animated body, a depersonalized ‘drone, an automaton, a thing’ (Dendle, *Encyclopedia* 6) without the emotional components such as desire for a specific action or satisfaction from achieving it. Any memory and activity found in the zombie is instinctual and functions purely as critique – Romero’s zombies return to the mall not as free-willed humans, but as automated consumers, repeating actions from before, ‘remain[ing] in trance’ (Hantke) without real emotional attachment to anything. As such, slow zombies are ideal metaphoric representations of a ‘flattening of affect and the quenching of spirit and creativity’ (Hantke) as feared to be produced by overconsumption, media use, or political conformism.

Fast zombies on the other hand are not characterized by a ‘loss of passion,’ instead rather representing a deep ‘loss of control’ (Hantke) and



Slow zombies gather around the impenetrable Umbrella compound to form a 'wall of zombies'
(screenshot: *Resident Evil: Extinction*, © Sony, 2007).

a surrender to animal nature beyond the human. Instead of mindless automatons, the new, fast zombies function as metaphor for the 'animal instinct' (Hantke), revealing a human nature that is more visceral, driven by self-preservation and thus self-interest. For Hantke, this allegorizes the 'neoliberal agenda, insisting on individualism, risk, and universal predation' – the war-like state of 'kill or be killed' present in liquid modernity. Consequently, the fast zombie strips away any and all of the human masks of socialization and reveals, in a very posthuman gesture (think 'becoming-animal'), the predatory side of humanity.

Thus, with the sequels to the original *Resident Evil* a re-appropriation of the zombie sets in, which evolves the slow-moving creature in terms of agility, abilities, drives, and on-screen presentation to the requirements of the new social and cultural realities and to the new understanding of a posthuman self-construction. In RE2 zombies needed to be 'more aggressive and more dangerous' ('Game Over'), as director Alexander Witt says. They were conceptualized by the film's choreographers Sharon Moore and Derek Aasland as 'liquid zombie[s]' ('Game Over') in terms of their relentless forward motion: unstoppable, flowing around any kind of resistance, and then rushing in on the final attack. RE3, for the first time, offered a completely new breed of zombie that was created by Umbrella's experiments with Alice's DNA reintroduced into the undead. This mutated form of zombie is what producer Paul W.S. Anderson refers to as 'super-undead: the undead that can be fast, that is super-strong, that is animal, smart, cunning – a really fearsome foe' ('Beyond Raccoon City'). Slow zombies are still present but figure either as a single close encounter or in large groups as a barrier, or 'wall of zombies.' The

'super-undead' become the real threat of the film. From this point on, the slow-moving zombies of RE are 'phased out' in favor of the infected of *28 Days Later* and become all but non-existent as a threat. The zombie evolution is taken one step further with RE4, in which the original concept of the undead ('people brought back by the virus') is being replaced by the concept of the infected ('people mutated by the virus'), as make-up artist Paul Jones explains in 'New Blood: The Undead of Afterlife.' The new form of zombie (referred to as 'burrowing zombie' or 'mandible zombie') is mostly characterized by its genetic mutation: It is faster and stronger than humans and can extend its mouth into a huge maw with four sharp-toothed mandibles that function as sensors and grasping tools at the same time. These zombies do not shamble up to the prison gates, but instead are intelligent and cunning enough to dig their way through tunnels into the sewer system connected to the prison and attack their prey from cover. Lastly, in RE5 the zombie ultimately evolves into a fully conscious posthuman agent that due to the Las Plagas parasite is capable of retaining full control over its motor functions and the ability to use tools and machinery. Las Plagas zombies are thus able to drive cars and motorcycles, fire weapons, and coordinate a military-style attack (see 'Drop (Un) Dead').

As Hantke notes, in accordance with this 'acceleration' the zombie changes not just in terms of speed, but in all aspects of its visual representation. Where slow zombies were best captured in rather static long shots, establishing a depth perception that would allow the viewer an orientation point to realize the slow and steady approach of the zombie, fast zombies are shot preferring fast-paced, hard cuts, favoring medium and close-up shots, and unusual, jarring angles. In films such as *28 Days Later* the zombie acceleration is even more emphasized by the use of handheld cameras, unsteady point of view, grainy and unfocused shots, and rapid camera movement. This fast and impact-oriented editing directly transports audiences into the conflict and provides a visceral experience of the zombie threat, thus rather addressing mainstream action audiences interested in the physical fight, instead of cult horror audiences savoring the psychological threat posed by the zombie.

Further, as Robin Wood argues, large groups of slow zombies are best described as being governed by a sort of 'herd' mentality: '[They] never communicate, or even notice each other, except in terms of an automatic "herd" instinct, following the leader to the next food supply' (298). The phrase is imprecise, though, as slow zombies simply follow specific sensory inputs – such as the smell of blood, movement, noise – but no one zombie leads the herd (aside from being the first to notice the food). Important to note here is that slow zombies might gather in

'herds' but remain separate in their actions – each following its own instinct for food. This accounts for the zombies' relative inability to infiltrate human habitats or get past simple barricades. Typical scenes thus include small trickles of zombies gathering around enclaves to form larger groups. Visually, most films present this amassing of zombies in scenes of 'herds' pressed against mesh wire fences or windowpanes unable to get past. Metaphorically speaking, slow zombies are thus solid, massive, and separate entities held in place by material boundaries (see the discussion on 'territoriality' further below).

Fast zombies, on the other hand, are not stopped by barriers and find ways to move around, under, over, and through any material boundary. As Colin Tait argues, the 'herd' becomes a 'swarm' (taking his cue from Hardt and Negri's *Multitude* and their description of the 'network attack' as '*a multitude of mindless assailants, unknown, uncertain, unseen and unexpected*' [91]) in that 'they possess the ability to look for openings, utilize crude skills, and eventually overwhelm via their inherently cooperative nature' (Tait 67). Utilizing a collective intelligence, the swarm becomes a single entity and, not caring for its individual components, urges onwards towards its goal. Visually, most films enact this variant of zombie morphology in terms of fluidity, in which the metaphor of the 'wall' becomes the metaphor of the 'wave.' Singular drops are lost, arrested in their motion, but the wave itself is unstoppable, moving by replacing the front particles with new ones from the back. In terms of its visual impact, this is most radically expressed in the film *World War Z* (dir. Marc Forster, US/UK, 2013), which enacts zombies as a wave washing over every obstacle placed in its way – zombies literally rushing over each other to slop over a 60-foot wall or smashing into houses and cars, before the rest of the wave changes direction to circumvent the obstacle.

Returning to the evolution of zombies in the *Resident Evil* series, I want to argue that the fast zombie ultimately represents a becoming-posthuman in terms of the new social reality of liquid modernity. The zombie is an ideal negotiation of the life/death, subject/object, human/other boundaries – and in its irreconcilability at the level of such dialectic categories, as Lauro and Embry argue, it embodies the posthuman: 'the only way to truly get posthuman is to become antisubject' (87). Already inherent in its liminal status, its embodiment in life and death, 'the zombie serves as an apparent deconstruction of our every ontology' (Leverette 187) – thus inhabiting a critical posthumanist subject position, which 'exists in its collectivity (and in its multiplicity and its hybridity)' (Lauro and Embry 106). Dendle argues that this multiplicity and hybridity can already be found in the human body

and that it is externalized in the fast zombie: 'Our body itself is only a loose collective of tissue held together by circumstance and self-interest rather than sentimentality or affection' (*Encyclopedia* 6).

This multiple/hybrid position becomes even more apparent through the zombie's 'liquefaction,' in its conception first through its movement as individual (RE2), and as group (RE4): no more staggering, arms 'outstretched towards the victim, as if begging for something' (Hulsey), needing to catch its victims unprepared or unaware (see Pegg) to initiate the ontological dissolution of categories. Instead, the zombie becomes an unpredictable and much more flexible 'swarm organism' (in its visual impact discussed above), acting as one entity, 'the only imaginable specter that could really be posthuman' – transcending the life/death boundary by holding it 'irrevocably in tension' (Lauro and Embry 88, 94). Finally, the dialectic between competing categories is completely eradicated in the last three films (RE3–5), when experimentation and mutation create several new species of posthumanity, all ultimately existing in the 'the lacuna between life and death' (Lauro and Embry 94).

In RE3, Alice's blood is used to counteract the effects of the T-virus in the super-undead, restoring certain aspects of life, such as cognitive functions and memory. RE4 on the other hand offers 'mandible zombies' that have mutated from a human ontology, having been infected with the T-virus before death and thus retaining their reasoning powers, while at the same time exhibiting an enhanced resemblance to animals in that they develop maws with fangs and feelers. The Las Plagas in RE5 then are conceptually the most unstable subjects, as the film does not clearly determine their origin: virus, parasite, human, dead – these creatures incorporate all ontologies, thus hybridizing and multiplying them.

Epidemic, virus, and contagion – this is the central biopunk terminology that motivates the shift from slow to fast zombie, that enables 'us' to think further and more radically beyond the humanist subject position and that very closely resembles discourses after 9/11. Diken and Laustsen argue that the new terror after 9/11 is defined by its virality. Due to the globalized network nature of liquid modern society, the most effective method of destruction is viral: Its goal is to remain undetected and spread using the original network pathways (or even creating new ones): 'A virus destroys the network from within, causing implosion. Viral terror breaks the public rules, offers no explanation or negotiation' (Diken and Laustsen 95). That is why Žižek calls this form of terror 'uncanny' and 'paranoiac': 'the spectre of an "immaterial" war where the attack is invisible – viruses, poisons which can be

anywhere or nowhere. On the level of visible material reality, nothing happens, no big explosions; yet the known universe starts to collapse, life disintegrates' (*Welcome* 37).

Biopunk zombie films like *28 Days Later* (as the initial 'fast' zombie fiction) and the *Resident Evil* series embrace viral outbreak as the key metaphor for terror in liquid modern times and use it to fully break down the humanist subject position and all the safety it provides:

The virus is itself at the very threshold between animate and inanimate, between organic life and chemistry. Little more than a simple strip of genetic material, the virus is unthinking and unmotivated. In the sense that it preserves and replicates its DNA, a virus is arguably the purest form of life. (Dendle, *Encyclopedia* 6–7)

The invaded host body – infused with pure life (*zoe*) – represents thus a critical posthuman subjectivity: *becoming-virus*. From this subject position, the films enact the fast zombie as a metaphor of the breaking down of both the individual and social body, to present them 'as being vulnerable to invasion on account of our increasingly globalized, networked and communally organized selves' (Sundaram 136).

As a consequence, biopunk zombie films need to address Lauro's 'terror from the familiar' from a different perspective. If any social body can be invaded by disease and its cells turned into threats through viral terror tactics, then, as Deborah Christie argues for the vampire–zombie hybrids of *I Am Legend*, 'the body, post-death, has become a liability that neither society nor the individual can afford to treat sentimentally. Logically, the body is no longer a symbolic representation of the life that was once housed there, and instead represents a highly contagious source of infection' ('Dead New World' 72–73). After 9/11 the zombie becomes an apt metaphor for the 'domestic terrorists within one's own private and public borders' (Muntean and Payne 246–47) – without forewarning and fully unexpectedly, the private turns threatening. Risk management of global threats (terrorism, pandemics) becomes the individual's responsibility and personal connections cannot reasonably help in stabilizing or securing against those threats, as one realizes the 'frailty of human bonds' (as the subtitle of Bauman's *Liquid Love* suggests) and that 'liquid modern life is a life of undying suspicion and unrelenting vigilance' (Bauman, *Liquid Fear* 47), as even the closest of human bonds might be broken in an instant. All of this has been part of zombie fiction before 9/11, but with the advent of the fast zombie and its biopunk metaphor of 'viral contagion,' the emotional conflict of killing a loved one, the struggle of severing the human bond with

the former familiar, has been replaced by an unwavering conviction of the need for swift action. Where before, the bitten had time to ponder their demise, think about how and when they wanted to die, and say goodbye to their loved ones – thus fueling the internal struggle within the social body regarding when to excise the disease – the viral terror of fast zombies ‘must be killed at once – and often brutally’ (Bishop, ‘Dead Man Still Walking: Explaining’ 23), as the infection cannot be allowed to spread under any circumstances. In liquid modernity, faced with viral terror and in order to survive, one needs to be able to cut any relation with speed and decisiveness. Biopunk zombie films heighten this radical change in the make-up of interhuman relations by determining the human becoming-zombie not as a slow progression that can be foreseen, but, as discussed before, as unavoidable and immediate. The biopunk zombie is biology become politics – in the form of a radical action of preemption.

7.2.3 Frontier-land and the Breakdown of Social Order

The politics of globalized, undetectable, viral terror find their cultural representation in biopunk zombie movies first and foremost in the question of how to deal with anything that is seen as a potential threat against the social body. The viral contagion, just like viral terror, is undetectable, turns the familiar into the monstrous within seconds, and is destructive to any social order. One way of dealing with the insecurity of society and the unperceivable threat levels of viral terror is by employing ‘preemptive politics of security’ in order to organize any and all public space for risk assessment, controlling ‘eventualities’ (Diken and Laustsen 97) rather than events and finding a reaction to actions that have not taken place yet.

This ‘ideology of preemption’ (Muntean and Payne 247) is most impressively demonstrated in *28 Days Later*: In one scene, protagonist Jim – ignorant of the changes of the infected world – is rescued by Selena (Naomi Harris) and Mark (Noah Huntley), who have thus far survived together and formed a social bond. Some time after the rescue and due to Jim’s ignorance, Mark gets injured (and potentially infected) in an attack. Selena immediately strikes him down with her machete, eliminating any risk for her and ignoring her former familiar bond with Mark. The scene is violent and bloody. Mark notices the gash in his arm, realizes his predicament, and looks from his arm to Selena, asking her to ‘wait, wait!’ Selena does not hesitate but swings her machete at Mark. In terms of cinematography, the film enacts no difference between killing Mark and killing the infected before – the

cuts are frantic, the camera is shaky and unfocused, concentrating on the blood spattering across the wall and the rapid, violent hacking. After it is done, Selena pants heavily and turns to Jim, throwing him a rag with the words 'wipe that off' – thus emphasizing that even the appearance of a breach can cost him his life. Remarkably, all of this happens before Mark's contamination is established and he crosses the human/infected threshold and actually becomes a threat. Anna Froula claims this preemptive strike foreshadows 'the logic of 9/11, the response to the threat must be as or more barbaric than the threat itself' (199). Nick Muntean and Matthew Payne argue that with this barbaric response, Selena (and thus all enforcers of the 'ideology of preemption') ultimately forestalls any alternative to or 'potential way out of the apocalyptic crisis' (247). It is exactly this same logic that dominates the 'War on Terror' and thus lends itself to a political reading of post-9/11 zombie films, as zombie terror and Islamic terror become conflated. Bishop explains: 'The transmission of the zombie infection is a symbolic form of radical brainwashing. Because anyone can become infected (i.e., conditioned) at any time, everyone is a potential threat; thus, paranoia becomes almost as important as survival' ('Dead Man Still Walking: Explaining' 24). This is eerily reflective of the Bush administration's foreign policy, as stated by national security advisor Stephen Hadley: 'If necessary [...] we do not rule out the use of force before attacks occur, even if uncertainty remains as to the time and place of the enemy's attack' (cited in Muntean and Payne 247).

Following this logic, the attacked US reacted to viral terror by investing its political rhetoric in strengthening the territorial 'differentiation of "inside" (friends) and "outside" (enemies)' (Diken and Laustsen 92) in regard to national politics, which allows political institutions to rephrase uncontrollable global insecurity into much more easily controlled personal safety in terms of homeland security – the implementation of large-scale checks of flight passengers and cargo containers is the most obvious attempt at this (Diken and Laustsen 93; Bauman, *Society* 89). That national security, that is, territorial domination, does not work after the 'end of the era of space,' but is a futile attempt at whitewashing the government's inability to handle the viral threat, is again symbolically explored by the biopunk zombie fictions. In *28 Weeks Later*, the Isle of Dogs in central London is used as a quarantine zone, heavily fortified, under surveillance and control of the US military. But all territorial control measures – the snipers, the medical examinations, the armed guards, and the ever-present CCTV cameras – cannot stop the infection from resurfacing once a new form of infected is found: The biological unpredictability of the contagion, in this case a woman that

is infected and a carrier of the disease, but not showing any symptoms, is not manageable by the military.⁷

Again the biopunk metaphor of infected as terrorists is highly enlightening: The inside/outside or us/them differentiation breaks down when the contagion is 'dormant' or mutating into unknown form and the identification of the other becomes impossible – just as with the friendly suburban foreign students-cum-terrorists of 9/11. Terror is invisible and off-scene, not found where it is expected and thus not manageable. In *28 Weeks Later*, when the outbreak occurs and the citizens of the quarantine zone run into the streets in panic, the military machinery reacts with extreme preemptive logic: Within minutes the order to kill only the infected is rescinded and everyone becomes a potential target. When this radical attempt at controlling the infected fails too, an airstrike with firebombs is supposed to contain the infection for good. The undecidability of targets dissolves any categorization of us versus them within seconds and confuses the snipers as well as the military leaders watching via remote cameras – the viewers are drawn into the same confusion as shaky point-of-view shots through the sniper's scope and close-ups of the snipers shooting blend with shots of panicked people running through the streets. The film presents infected and civilians running for their lives as completely indistinguishable – in the ideology of preemption anyone (infected, civilian, 'anyone but me') becomes a potential threat and the extermination of all threats takes priority.

Similar scenes of territorial fortification and their inability to adapt to new threats are found in RE2, RE4, and George A. Romero's *Land of the Dead* (US, 2005). In RE2, the Umbrella Corporation is as inept in containing the T-virus in Raccoon City as the US military is in *28 Weeks Later*, giving the live-ammunition order and firing preemptively on the civilian population in the evacuation attempt when the potential threat has become too great and sending in a nuclear strike in an effort to eradicate the virus – which of course fails and leads to the global spread of the virus in RE3. In RE4, the survivors have fortified a prison, in itself a representation of the old, territorial discipline society, and taken refuge where once the undesirables of a society were confined. But again, the massive walls and territorial holdings cannot cope with the oncoming threat of exterritorial, viral, protean terror.

⁷ Non-zombie outbreak films, such as Wolfgang Peterson's *Outbreak* (US, 1995) or Steven Soderbergh's *Contagion* (US, 2011), enact similar scenarios but are more positive in their resolution, allowing for national and international institutions (military, governmental, medical) to regain control.

The globalized world order after 9/11 and especially the logic of a 'War on Terror' is defined by what Bauman calls 'the character of frontierland' (*Society* 90), where an instability of alliances, a flux of the conflicts fought, and the constant reassessment of goals are central. The exterritoriality of globalization is naturalized and given form in the zombie films, where space becomes contested, no matter how fortified it is. Bauman suggests that the 'inaccessibility of the global roots of insecurity as long as dealing with them is attempted from inside a locally confined territory, and using only locally available means, has long caused a "safety overload": a shifting of insecurity-prompted concerns and worries to the action-field of safety' (*Society* 89). The individual may not be able to solve viral terror (or the zombie apocalypse), but they can at least fortify their home and keep the threat outside – a strategy doomed to fail as horror films have pointed out repeatedly. No matter if the walls are breached via liquid adaptation (as in *World War Z*), through brute force (as in *Pacific Rim* [dir. Guillermo del Toro, US, 2013]) or through inner corruption (as in *The Purge* [dir. James DeMonaco, US, 2013]), they are inevitably breached. Biopunk zombie films similarly explicate the futility of the territorial fortification by flaunting the adaptive nature of globalized and networked threats: In RE4, the zombie threat becomes viral, invisible, and highly flexible. The safety of the prison is literally undermined by the mutated 'mandible zombies' by using the existing network infrastructure – they burrow into the prison by using the sewage and water pipe system.

A similar inability to foresee the unforeseeable and to expect the unexpected is demonstrated by Romero's most overtly political film, *Land of the Dead*. In the film, the inner city of Pittsburgh has been fortified – very similar to the Isle of Dogs from *28 Weeks Later* – and cut off from the zombie onslaught. This has been easily accomplished because the safe zone is peninsular and the water barrier effectively stops 'normal' zombies. The remaining unsafe side of the zone is equipped with armed guards, electrified fences, and all-round surveillance. The film then explores the inability of the established social order inside the zone – reminiscent of old world capitalism and military imperialism – to cope with a change in the abandoned outside world. The zombies outside mutate, change in terms of cognition, and become better organized. By following a zombie leader, using tools and weapons, and simply walking under the water, they are able to infiltrate the city and destroy the system from the inside – the fortification ironically trapping everybody in the city with the zombies.

As demonstrated in these examples, the power of the military (or military-like organizations) based in territorial sovereignty is severely

challenged by the biopunk zombie film, especially because they cannot foresee the viral, mutable nature of the threat. But more so: No social institution, no structural element of the old, solid modernity is depicted as capable of dealing with the realities of globalization and liquid modernity. As Nicole Birch-Bayley suggests:

These films very often consisted of societies and populations that proved ill equipped to cope with the overwhelming spread of violence and disease; the human crisis became directly linked to authentic global concerns, such as wars on terrorism, political revolutions, inadequate governments, weapons of mass destruction, viral epidemics or even pandemics, which continue to be referenced in the contemporary media. (138)

Arriving in mainstream media with post-9/11 zombie films is a strong flaunting of this inability of the old structures and systems to deal with the ensuing chaos after any form of globalized crisis. The institutional inability had been present in zombie films before, in fact it had been present in many horror or science fiction scenarios, but has through the terror attacks been more clearly focused on global causation and brought to the fore as systemic in network society. Zombie films strongly showcase the realization that 'the 9/11 attacks exposed the vulnerabilities of global infrastructure and security, or the fragility of civilization itself,' mostly leaving audiences with 'a general sense that in a time of crisis, people will not be able to depend on authorities for help' (Dendle, *Encyclopedia* 9).

It is then no wonder that zombie films demonstrate the fast and complete destruction of any institutions or structures that are connected to any current social order: Government, police, military, medical systems, and the church all become obsolete and dysfunctional, as do media and capitalist ventures. Images of decrepit cities, abandoned highways, overrun military outposts, looted shops, and corrupted symbols of social order (like churches, schools) abound in most zombie films: 'we have seen chaos metastasize across the planet, and the message is clear: no one is in charge of the world any longer. Nearly every zombie film contains the obligatory scenes of similar disorder as the authorities looked to for protection themselves fall victim to the chaos' (Zani and Meaux 114). As such, the zombie film naturalizes and speeds up a process that Bauman argues is inherent in the social make-up of liquid modernity: the dissolution of social mores and systems.

7.2.4 Empire, Sovereignty, and *Homo Sacer*

But biopunk zombie films go beyond a simple representation of societal inabilities to cope with global crisis and apocalypse. The films also comment on and shift the zombies' representation of sovereignty. Inherent within liquid modern society, but most apparent after 9/11 and its political climate shift, sovereignty needs to be seen in its connection to what Hardt and Negri refer to as Empire: 'Along with the global market and global circuits of production has emerged a global order, a new logic and structure of rule – in short, a new form of sovereignty. Empire is the political subject that effectively regulates these global exchanges, the sovereign power that governs the world' (*Empire* xi). Replacing the nation states in their claim for sovereignty, Hardt and Negri argue, new globalized structures emerge that operate fluidly, flexibly, and without territorial boundaries, but still under a unifying logic of capitalism. Instead of the territorial extension of state sovereignty via imperialism, Empire rules via mobile global elites, the dissolution of space through speed, and an unfettered exterritoriality, just as Bauman claims for liquid modernity.⁸ Hardt and Negri underline the difference: 'In contrast to imperialism, Empire establishes no territorial center of power and does not rely on fixed boundaries or barriers. It is a *decentered* and *deterritorializing* apparatus of rule that progressively incorporates the entire global realm within its open, expanding frontiers' (*Empire* xii–xiii).

And because Empire is not imperialism (in terms of territorial claims and fixation of borders), the 'global capitalist network' exerts a form of sovereignty over the globalized world that 'goes nomadic, assuming a nonlinear, rhizomatic character' (Diken and Laustsen 93), Hardt and Negri argue, and is best described by Foucault's terms of 'biopolitics' and 'biopower':

Biopower is a form of power that regulates social life from its interior, following it, interpreting it, absorbing it, and rearticulating it [...] The highest function of this power is to invest life through and through, and its primary task is to administer life. Biopower thus refers to a situation in which what is directly at stake in power is the production and reproduction of life itself. (23–24)

⁸ Here it might be useful to recall Žižek's argument of the 'obscene double': that globalized capitalism and globalized, viral terror are closely related in terms of their strategies and power dynamics, and that Osama bin Laden is part of the global elite of liquid modernity.

Instead of the sovereignty that incarcerates, disciplines, and punishes its citizenry (*disciplinary societies*) by organizing itself around tightly surveyed enclosures, biopolitics emerge with a shift towards *societies of control*, which exert power via flexible ‘*modulation*, like a self-deforming cast that will continuously change from one moment to the other, or like a sieve whose mesh will transmute from point to point’ (Deleuze 4; see Foucault, *Discipline*). Political control over life has become the measure of sovereignty, as Sherryl Vint argues: ‘Under biopolitics, life itself becomes the object of political governance, and political governance becomes the practice of steering the biological life of individuals and species’ (‘Introduction’ 161).

Foucault argues in his lectures on biopolitics that sovereignty defines itself through the power to kill, ‘the right to take life or let live,’ and that this right has been complemented through biopower with ‘the power to “make” live and “let” die’ (‘*Society*’ 241), which Vint explains as the right to shape the governed according to sovereign notions of what is healthy, good, or right (‘Introduction’ 162). Biopolitics is thus the practice of excising unhealthy, bad, or wrong specimens from the governed social body, by deciding which life is worth living and which is expendable. It is this excised body that Giorgio Agamben describes with his concept of *homo sacer*, ‘who *may be killed and yet not sacrificed*’ – the ‘bare life’ (8) of man that is outside of law and the social body, defined within only by exclusion from it. In (liquid) modern times, groups of expendable lives are declared *homo sacer* by a biopolitical sovereign in order to assure their lawful exclusion, and even extermination, from the social body, as Anthony Downey writes:

Lives lived on the margins of social, political, cultural, economic and geographical borders are lives half lived. Denied access to legal, economic and political redress, these lives exist in a limbo-like state that is largely preoccupied with acquiring and sustaining the essentials of life. The refugee, the political prisoner, the disappeared, the victim of torture, the dispossessed – all have been excluded, to different degrees, from the fraternity of the social sphere, appeal to the safety net of the nation-state and recourse to international law. They have been outlawed, so to speak, placed beyond recourse to law and yet still in a precarious relationship to law itself. (109)

The conceptual closeness of *homo sacer*, bare life (*zoe*) existing outside of law and society and always already dead but still threatening existing order, to the figure of the zombie has been pointed out by several scholars (S. Cohen; Leverette; Stratton; Sutherland; Zechner), but it also seems

reminiscent of Bauman's category of 'Wasted Lives': 'declared redundant' and denied the 'assurance of *social* survival,' no longer functioning within and excised from liquid modern society as 'flawed, incomplete, unfulfilled' (*Wasted Lives* 13–14). Zombies are representatives of human waste, as Steven Shaviro suggests: 'They live off the detritus of industrial society, and are perhaps an expression of its ecological waste' (84–85).

In zombie films, the assertion of sovereign power is exemplified by declaring a permanent 'state of exception,' in which 'it is impossible to distinguish transgression of the law from execution of the law, such that what violates a rule and what conforms to it coincide without any remainder' (Agamben 57). In zombie narrative, acts of violence and transgression are thus suspended outside the law and not punishable – basically, any action is justified: 'Abandoned, the *Homo Sacer* is considered already dead: "whoever is banned from his city on pain of death must be considered as dead," [...] and therefore, can be killed with impunity: killing the already dead is not murder' (S. Cohen, citing Agamben 105). Simchi Cohen argues that the zombie/human relation of zombie film discourse can be read as the *homo sacer*/sovereign relation in that both positions are outside of law, both are in the permanent state of exception, and both find themselves converging with the other (humans becoming zombies, zombies taking on more human qualities).

For Sherryl Vint, recent biopunk zombie films are one example of science fiction's discussion of 'the thanato-politics of a biopolitical order that deems lives not worth living, and thus inhabited by a kind of living death' ('Introduction' 167). The distinction between human socially bound life, in the form of *bios*, and bare life, in the form of *zoe*, is explicitly negotiated by the zombie metaphor to showcase 'the fragile quality of this distinction, how easily one can switch categories when the state of exception operates permanently' (Vint, 'Introduction' 168). Human lives, in the sense of biocapital, become commodities that need to be managed, their economic value determined through their biology, in the sense of a posthuman being-animal or being-machine. Biopower 'refers not only to government of the living, but also to multiple practices of dying' (Braidotti 9). Biopolitics turns into necropolitics, as Achille Mbembe terms sovereignty, 'whose central project is not the struggle for [individual] autonomy but *the generalized instrumentalization of human existence and the material destruction of human bodies and populations*' (14). Necropolitics has 'the power and the capacity to dictate who may live and who must die' (Mbembe 11), enhanced in scope by the 'intense technological mediation' of the 'inhuman(e) moments' (Braidotti 9) of the posthuman predicament.

What is emphasized by biopunk zombie films, then, is the ease and

speed with which the transition from *bios* to *zoe* occurs, as discussed above, and the necropolitical dimension of managing the zombies and what they represent. Stratton argues that current zombie films enact and comment on the 'relationship between zombies and displaced people, most obviously refugees, asylum-seekers and illegal immigrants' (265), that the zombie comes to signify Western fears of being overrun by these *homo sacer* of liquid modernity. A film that naturalizes this fear and in terms of visual urgency is most drastic in depicting the 'wave' of zombies drowning out Western society is the abovementioned *World War Z*. Furthermore, ever since the terrorist attacks of 9/11, 'refugees have been branded as a sinister transnational threat to national security – even though none of the 11 September terrorists were actually refugees or asylum seekers' (Stephen Castles, cited in Bauman, *Wasted Lives* 54). Bauman calls these displaced peoples human waste and 'surplus population' (*Wasted Lives* 39), a category that Vint sees reflected in biopunk zombie films, which 'might be understood as a kind of monstrous surplus of biocapital, a crisis of overproduction (of life) that becomes monstrous in the image of living dead bodies' ('Introduction' 168). Liquid modern fears of this growing mass of displaced wasted humans, those already dead-in-life, 'inadvertently produce a massive culture of death and destruction, our image of viable life continually modulated as the market demands' (Vint, 'Introduction' 170).

The *Resident Evil* series embodies this interconnection between globalized capitalism and thanato-technological progress like no other. The Umbrella Corporation manufactures bioweaponry and in a steeply progressive trajectory (over the course of five films) demonstrates its willingness to manage both living and dying to maximize their economic surplus. They use every chance to field-test and monitor the effectiveness of their weaponized T-virus, as demonstrated for example with the Nemesis project in RE2. They even claim necropolitical sovereignty over their biohazard material, that is, the zombies: In RE3, scientist Dr. Isaacs (Ian Glen) uses zombies like lab animals, picked out from the mass in front of the facility by use of an industrial crane, in order to enhance his 'domestication project,' which is supposed to turn the threat of the zombies into slave labor. George A. Romero realized a similar theme in *Day of the Dead* (US, 1985), when Dr. Logan (Richard Liberty) tries to 'civilize' the zombie Bub (Sherman Howard). The contrast between the two is motivation: Logan argues for co-existence as necessary for human survival, whereas Isaacs is driven by greed. In RE4, the corporation sends out false signals luring survivors to pick-up locations, where they are sedated and placed into stasis for viral experimentation. And in RE5, Umbrella keeps clones of '50 base models' of humans stocked in an

underwater testing ground especially built to showcase the effectiveness of viral weaponry. By running scenarios with thousands of humans, the corporation studies viral outbreaks and containment, as well as the best methods of exterminating the biohazard.

Visually, the films highlight the industrial use of and necropolitical control over human life by the Umbrella Corporation by dehumanizing the subject and reducing it to mere body – sometimes not even alive. In the opening scene of RE3, Alice wakes in the shower of the mansion (the exact opening scene from RE1), but it rapidly becomes clear that she is not in the mansion, but rather in an Umbrella facility with traps set to test her genetic memory and her survival skills. She finds a door that leads her to the laser tunnel (from RE1's Hive), escapes it (barely) through a ventilation shaft, and drops into Raccoon City's hospital (from RE2). There she survives a blade slicing into the hallway, before unwittingly triggering a mine that kills her. Dr. Isaacs appears, filmed from a low angle (fusing the viewer with Alice's position on the floor), and says, 'Take a sample of her blood ... and get rid of that' (indicating the camera position). The use of 'that' dehumanizes Alice (and the viewer), indicating the value given to human life by Isaacs and the corporation. Two technicians take the corpse out of the facility (without any body bag or cover) and throw her in a ditch. The camera follows Alice's body and slowly in a dolly out (filmed with a crane above the ditch) reveals not only one body, but a row of possibly hundreds of Alices, all dressed exactly the same in the iconic red dress of the first movie. The ditch is a mosaic of red dresses, black boots, blonde hair and torn flesh. The camera movement dollies over the ditch, slowly picking up speed, and moving upwards to show the amount of clones that have been experimented on and finally killed in the testing grounds. In Umbrella's corporate necropower, the human body is mere bio-matter, a piece in the experimental set-up of the laboratories.

Umbrella thus demonstrate necropolitical sovereignty on all levels: They 'make life' (the clones), 'take life' (the captured survivors), and 'let die' (their employees and test subjects). Their economic agenda, selling their weaponry, takes precedence over any morality involved in the technologically enhanced destruction of whole populations – in its extreme, the 'let die' aspect of their biopower includes 99 percent of the world's population, even the earth itself: *Resident Evil* is one of very few zombie fictions to, for example, imagine the contagion having an effect on animals (if only in limited examples of dogs and crows) and the environment (RE3 narrates the effect of the virus on the earth as leaving 'barren wastelands'). Bearing in mind that the films



The result of necropower: dead Alices in the ditch
(screenshot: *Resident Evil: Extinction*, © Sony, 2007).

are not prime examples of coherent and logical storytelling and are unlikely consciously developing an overall story arc about necropolitical biopower, they nonetheless negotiate contemporary cultural anxieties and reveal a preoccupation with and an escalation of necropolitical tactics.

Further, the films explore necropolitical power also in their connection to terrorism and globalization – a connection that Muntean and Payne see evident in the liminal position of the zombie,

because it makes manifest and unavoidable all of the unsavory elements required for the perpetuation of the Western way of life. This critical symbolic function of zombies is strikingly similar to what many commentators saw as both the literal and symbolic message of the September 11 attacks – that America's global financial and political hegemony had only been attainable through the subjugation and abjection of distant lands and peoples (243)

The two elements of Žižek's 'obscene double' – terrorism and multinational capitalism – find themselves interlocked in a struggle with one another, while at the same time working hand in hand, in thwarting any and all attempts to bring the conflict under an 'equitable, universally binding and democratically controlled global order' (Bauman, *Society* 93), because the resulting uncertainty of power structures and jurisdiction is beneficial to both sides.

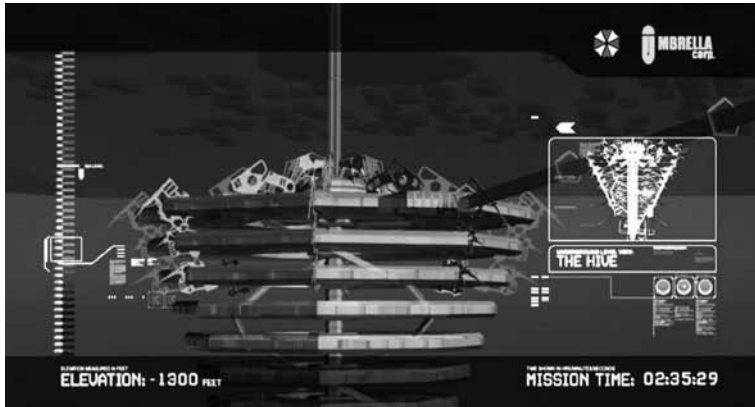
The point of difference between the two groups lies in their access to globalized mobility and exterritoriality. Whereas the global elite (the representatives of Empire, who are waging war on terror) is mobile, unfettered, and exterritorial, the 'global underdog,' countries from which terrorists recruit their human capital out of the human waste

left by globalization and liquid modernity, is constrained and impotent 'to arrest or even slow down the mobility of the power elite' (Bauman, *Society* 100).⁹ The terrorists thus wish to 'demonstrate the incompleteness of their own immobilization and so prove the vulnerability of the elite despite its superior mobility' (Bauman, *Society* 101). In appropriating the network as a form, terror is able to follow the flow of liquid modern movements of capital and uses the same strategies that global corporations employ: 'Terrorism has no country. It's transnational [...] At the first sign of trouble, terrorists can pull up stakes and move their "factories" from country to country in search of a better deal. Just like the multinationals' (Roy).

At the opposite side of the conflict, Empire aims to 'restate and reinforce the immobilization of their adversary' by linguistically shifting terrorism to 'rogue states' – making the enemy territorial – and 'reducing the task of fighting terrorism to the incarceration of the targeted terrorists as physical, spatial bodies' (Bauman, *Society* 101). Terrorists adopt exterritorial and networked strategies in order to harm the globalized elites while Empire uses the 'spectral entity' and non-territoriality of terrorism 'as an empty signifier' (Diken and Laustsen 94–95) to justify war – but in the end both groups, in Bauman's terms, are still only expressions of 'the revenge of nomadism over the principle of territoriality and settlement' (*Liquid Modernity* 13).

Recent biopunk zombie films visualize this nomadic, non-territorial conflict especially aptly in demonstrating a posthuman necropolitics, as characterized by Mbembe as this 'specific terror formation I have called necropower' (27). One of the key features of this is a fragmentation of territoriality into 'isolated cells,' which then are interconnected via 'over- and underpasses' taking into account the 'three-dimensional boundaries across sovereign bulks' (28). This is reminiscent of the military-installed quarantine zones of *28 Weeks Later* or *Land of the Dead*, but also, of course, of the strongholds that Umbrella keeps in the apocalyptic world after the T-virus devastation: the Hive in RE1 and RE2; in RE3 the underground facility in the Nevada desert and the other corporate enclaves around the world; in RE4 the Tokyo headquarters as well as the tanker ship in the Pacific; in RE5 the underwater testing ground

⁹ Ironically, the facilitation of this fight, once again in connection to Žižek's 'obscene double,' is only possible by financiers from the self-same global elite, such as Osama bin Laden and Arabian sheiks. Whereas the mass of Al-Qaeda members might be 'underdogs,' their actions nonetheless are financed and led by similarly global players as those this form of terror is fighting.



The underground maze of the Hive
(screenshot: *Resident Evil*, © Sony, 2002).

in Kamchatka. Mobility in and between these territorial enclaves is ensured by their three-dimensional design. Underground tunnels, for example, connect the Hive with Raccoon City. Such tunnels extend for miles down and outward from any Umbrella facility. But even though their underground character may offer a strategic advantage in the conflict with the zombies, it also nonetheless effectively immobilizes the globalized elite in the enclaves.

The *Resident Evil* films make extensive use of these three-dimensional territorial enclaves by drawing attention to their origin in video games, by positioning characters in computer-generated maps, in their abstraction reminiscent of architecture or 3D-modelling programs. The scenes usually depict characters (highlighted on the virtual map in glowing red against the bluish black of the model) and locate them in the vast underground complexes. By blending real-life footage of the characters smoothly into CGI frame models inserted into the 3D map, the scenes highlight not only the human dependence on technology, but also the insignificance of life for corporate technoscience. As these enclaves are highly technologized spaces, fully automated, monitored, and controlled by artificial computer intelligences, human life is revealed to be under the control of necropower, seen merely as a disruption in the smooth workings of the industrial-military corporation. As the films flaunt the size and extent of the enclaves through the 3D maps, they also allow viewers to draw conclusions about the relative position of the characters within the maze-like structures that entrap them, mostly deep underground with literally thousands of zombies, as for example in RE1, where all employees of the Hive have turned into zombies.

To counteract this underground immobilization, the films grant the globalizing force (Umbrella in *Resident Evil* and the military in *28 Days/Weeks*) airspace dominance, signaling non-territoriality as well as a privilege of mobility. Whenever the enclaves are threatened and the conflict emerges in that territorial cell, Empire simply uses its technological superiority and, literally, its 'upward' mobility. Mbembe argues that 'the airspace [is] transformed into conflict zones [...] [and] the symbolics of the *top* (who is on top) is reiterated. Occupation of the skies therefore acquires a critical importance, since most of the policing is done from the air' (29). Airspace dominance can, on the one hand, mean freedom from the conflict, as in *28 Days Later*, where the sighting of a commercial airliner overhead evokes hope of normalcy outside the infected UK and the arrival of a military fighter plane at the end signals a rescue from the zombie infection; or in RE3 and RE4, where a helicopter and a small private plane allow the survivors the mobility to move away from conflicted areas. But on the other hand, in most cases the airspace is a space of thanato-technological domination and the expression of necropower. *28 Weeks Later* spatially divides top from bottom by having high-up positioned snipers shoot at the ground-level or by having fighter jets firebomb the city. In all of the *Resident Evil* films, Umbrella uses fighter planes and military helicopters both for mobility (rescuing their assets) and as practices of dying.

The practices of dying and thanato-technological advantages become similarly obvious when considering the opposite side of mobility: The globalized elite, in its enclaves and with airspace dominance, is depicted as continuously besieged by the posthuman waste of zombies, by the displaced and sacrificed. The masses of wasted lives/living dead that threaten both the global elite and those human survivors caught in the middle (i.e. 'real' or 'normal' humanity, not as mobile as the elite and thus always prone to easily shift in category and become part of the human waste) seem to become larger in number. Vint understands these narratives of 'abject posthumanism' as a literalization of racism in Foucault's biopolitical sense, as 'humanity becomes split between surviving "real" humans and infected, dangerous posthumans.' She also argues that 'the new living dead' as racist category is not new, but has been extended to include more and more people that used to be 'protected from such damage by the discourse of liberal humanism and its state institutions' ('Abject Posthumanism' 139).

In RE1 these wasted lives consist of a couple of hundred employees altogether, mostly scientists and office workers; in RE2 the mass extends to all citizens in the urban environment, but most scenes involve less than a hundred at a time; in RE3 already thousands, if not tens of

thousands, lay siege to the Nevada facility, trying to lay claim to the place; in RE4 their numbers have grown to several hundred thousand in front of the prison, and the film is only able to visualize this with sweeping aerial shots. Interestingly, the film is the first to be shot with 3D technology and stages the siege of the prison by having Alice arrive in a private propeller plane – thus allowing for wide flyovers revealing the extent of the zombie hordes. In RE5, then, the final shot is a zoom out from the White House besieged by possibly millions of zombies, held back only by massive walls and enormous military firepower (such as tanks, rocket launchers, and flamethrowers).

In most biopunk films, one can observe an escalation of the practices of dying that corresponds to the growing numbers of living dead laying siege to the last remaining outposts of humanity. But as Max Brooks has remarked: ‘Conventional warfare is useless against these creatures, as is conventional thought. The science of ending life, developed and perfected since the beginning of our existence, cannot protect us from an enemy that has no “life” to end’ (xiii). Consequently, the films enact not only individual human death and serialized posthuman destruction of zombies (through guns, blades, or blunt force), but also the utter physical destruction of large amounts of posthuman bodies in a multitude of ways. The obvious weapons are military gunships and fighter planes dropping bombs, as discussed above, but in addition the films celebrate a creativity in terms of incongruous use of everyday objects, especially vehicles, as weapons: In *28 Weeks Later* the chopper pilot needs to clear a landing area and uses his rotor blades to mow through the approaching infected, decapitating and tearing limb from limb several dozens of bodies in the process. A similar scene can be found in RE4 when the plane takes off, dives, and then scrapes through hundreds of zombies with its propeller, leaving a trail of blood in the faceless masses. The weaponized convoy of RE3 would be another example: In one scene the tanker truck plows through thousands of zombies, then flips and crushes many more, only to be blown into bits and pieces as the remaining crowd of zombies converge on the driver’s cabin.

7.3 A Posthuman Society

As I have shown, the post-9/11 zombie film renaissance picks up on liquid modern anxieties, especially in its connection of terrorism and globalization, and negotiates these by reimagining the zombie in terms of biological disaster – as viral, infectious, and contagious. In appropriating

the zombie as a metaphor within this biopunk context, films such as the *Resident Evil* series or the *28 Days* franchise make available a cultural negotiation of post-9/11 politics, globalization, and their underlying logic of abjection and negation of human and non-human others alike. The films thus reject a humanist notion of subjectivity and evoke the destruction of current social order by offering a posthumanist fiction that is 'anticatharsis, antiresolution' (Lauro and Embry 94) in that it neither restores the old order nor replaces it with a recognizable new one.

In the zombie the humanist subject thus sees itself evanesce, literally being eaten up by a new form of sociality so radically different that few are able and willing to acknowledge it. As Deborah Christie argues, the zombie film thus represents not just the 'end of the human' but also the beginning of an alternative, radical, and posthuman subject:

We tend to view zombie narratives as apocalyptic because we believe that we are watching either the slow breakdown or the catastrophic destruction of human society, and we generally regard that as a negative event. But because we most closely identify with the dwindling number of living human subjects, we often miss the larger implications that what we are really witnessing in a zombie narrative is a form of violent, transformative renewal. ('And the Dead' 61–62)

What drives this radical assumption is a critical posthumanist subjectivity, which not only decenters privileged human subjectivity (by engaging in the formation of a new posthuman zombie subjectivity) but also dethrones all humanist 'values and aspirations' (Wolfe, *What Is Posthumanism?* xvi) as superior models of thought by giving privilege to instinctual, animalistic, and *zoe*-centered understandings of life. Zombies already act as replacement for contemporary society in Romero's work, who himself states in an interview that zombies can be seen 'as a revolution, a new society coming in and devouring the old' (cited in Curnutte).

Simchi Cohen argues in reference to the Romero films that the genre provides a 'political subtext that divides the humans into factions: black versus white, male versus female, military versus science, rich versus poor' in its representation of the permanent state of exception and the enactment of sovereignty. The genre thus delivers prominent critique of the dichotomies inherent in the humanist subject position and the racism that underlies all biopolitical sovereignty. As such, zombie films function as dystopian (even anti-utopian) visions of apocalypse about the loss of humanist values and mores, and in their focus on the human

survivors' viewpoint thus deeply resound with exactly those values and mores. Leaving aside a humanist view and fixation on human survivors, though, the films indeed reveal the posthuman possibility of replacing the human altogether, in the form of zombie society. Further, these films naturalize Agamben's theses that the political and biological bodies have become one, that biopolitical life is bare life (*zoe*), and that the permanent state of exception is a political reality: 'we are all virtually *homines sacri*' (Agamben 115; see 181–82). But hidden in this dystopian vision there is also a strangely utopian hope about the posthuman – about *homo sacer* as subject – that 'this exceptional figure augurs a "coming community" that is based not on rights as such but the suspension of rights' (Downey 110). For the zombies, it becomes clear especially in the biopunk zombie films, are the representations of a 'mystically conjured, apocalyptically disconnected Utopia of the abrupt becoming-subject of bare life' (Robnik 92, translation mine):

The zombies [...] are a homogenous mass: black and white, male and female, military and science, rich and poor. They all hobble together after the same goal: flesh. And they are killed indiscriminately [...] As the movies progress, the zombies become more and more homogenous, rotting, and grotesque, and the viewer grows less and less able to distinguish a black zombie from a white one, a male from a female, an army sergeant from a doctor, a millionaire from a beggar. (S. Cohen)

To further emphasize the blurring of the human/zombie distinctions and the subject positions of the films, the post-9/11 zombie films concentrate on speed, mobility, and flexibility of the zombie – character traits favored in liquid modernity – and feature a newly found 'intensity of the zombies' (Bloom) that announces them as the new protagonists:

By accelerating the rhythm of scenes between the living and the dead, the characters have no real time to reveal their ideologies and are instead downgraded to purely impulse-based reaction. This shift in the structure of zombie horror signaled a departure from social satire to visceral intensity, with the zombies themselves taking the limelight from the humans who resist them. Because of the zombies' physiological improvements, the threat of human individualism receded under the increased threat now posed by the undead. (Bloom)

By granting the posthuman more room in the films and allowing

zombies to evolve, adapt, and mutate, biopunk zombie fictions radically interrogate the Anthropocene, human dominance, and human subjectivity. The zombie negates any humanist notion of individuality and superiority, and thus promises 'the destruction of a corrupt system without imagining a replacement' (Lauro and Embry 96). Instead of reading biopunk zombie films as dystopian and apocalyptic, I thus understand them as critical posthumanist interventions, in which the biological infection is reimagined as providing a *zoe*-centered subjectivity and 'functions as an agent of transformation – a catalyst for change rather than a vehicle for regeneration' (Rogers 129). In biopunk zombie films, the human – in its humanist, privileged notion – has thus become legend, as Robert Neville has in Richard Matheson's novel: a superseded model, unfit for the new reality and the new form of society. If 'we are all virtually *homines sacri*,' as Agamben muses, meaning that 'we' have all become zombies, then biopunk zombie fictions allow 'us' to witness a new posthuman position and the realization that 'Society has evolved beyond humanity, mutating to accommodate a new life-form that both is and is not identifiably human, which proves most clearly that it is our definition and even prioritization of humanity that has been flawed from the outset' (Christie, 'Dead New World' 68).

Conclusion

Will pigs be able to fly one day? [...] Anyone who will try to make pigs fly [...] will have to get our consent. (Zurr and Catts, 'Big Pigs')

When the Two10 gallery in London (an art venue operated by independent British charity Wellcome Trust, an organization mostly interested in biomedical research) commissioned art for the 'Working Drafts' exhibition in 2000 that was supposed to address the cultural impact of genetics (inspired by the announcement of the first working draft of the Human Genome Project), they were thrilled when seven artists submitted their 'subtle' and 'harmonic' pieces, whose 'overall effect is benignly futuristic' (Jones). This future envisioned by the exhibit, as curator Denna Jones argues, is supposedly vibrant with utopian potential: 'I think this is in keeping with future applications for the genome: its potential is vast and for each of us there may be one "interpretation" that holds significance for our future.'

What the official curatorial statement does not mention is that critical proposals, such as that offered by the Tissue Culture & Art Project (TC&A), initiated by Oron Catts and Ionat Zurr, were rejected in a vetting process because, as the artists later announced, 'the advisory group felt that our project presented an unrealistic reflection of the public's opinion of the Genome' (Zurr and Catts, 'Big Pigs'). Their proposal for *Wings detached*, the tissue-cultural generation of three sets of wings from pigs' stem cells, is offered as 'an exercise in putting things in perspective,' claiming that the original impossibility of the claim 'pigs might fly,' leading to its cultural use as connoting unrealistic fantasy, is today made possible via genetics and the art object would be a way to 'gauge how people will react to the fulfilment of other fantastic claims' (Zurr and Catts, 'Big Pigs'), that is, those made by genomics. By satirizing

the wish-fulfillment strategies of biotechnology (in creating miniature wings) and adding to their proposal the claim to file a patent on the wings in order 'to "initiate and control" the pig wings "market"' (Zurr and Catts, 'Big Pigs') (leading to the above-quoted pronouncement of intellectual copyright), the artists demonstrate the subversive potential of art to interrogate corporate strategies in shaping the technoscientific discourse on biology.

Zurr and Catts are very outspoken about a phenomenon they refer to as 'Genohype, [...] the discourse of exaggerated claims and overstatements concerning DNA and the Human Genome Project' ('Big Pigs') and which they find to be essential to general discourse on biology. In this, they point out a tendency already diagnosed by Dorothy Nelkin and Susan Lindee in 1995 in their discussion of 'the DNA mystique' – that the gene has become a cultural icon, that DNA has become 'a powerful, magical, and even sacred entity' (3) evoked in public popular discourse. In their preface to the second edition of the book in 2004, Nelkin and Lindee suggest the discursive tendencies of the 1990s have solidified in ever-present realities – DNA has become a powerful tool with immense potential in public discourse, from politics to economics, from academia to art: 'DNA is political territory, and mapping the genome was both a scientific and an economic breakthrough' (xii). It is here that the misrepresentation of genetics is forcefully created to coincide with economic interests of biotech firms and a neoliberal and transhumanist eutopian agenda.

Most importantly, Zurr and Catts argue, all biological research gets conflated with genetics just as much as all bio-art gets conflated with genetic or transgenic art. As Zurr and Catts repeatedly point out, their work is based in tissue culture and not genetics, and the 'engagement with life' can take place on other levels than the genetic: 'the cellular, the tissue, or the organ level' ('Ethics' 128). The conflation of all biological research as genetics oversimplifies the reality of work in biotechnology by reducing it to the culturally known iconic marker, but also streamlines the highly complex and hermetic work for possible investors, 'following a path of least resistance by applying established narratives' ('Ethics' 126) of DNA as code, and biotech as fundamentally the same as cybertech. For biotech to succeed economically, PR advisory firm Burston-Marsteller warned, 'rational debate' and scientific facts would not bring the desired result; instead 'bioindustries should proliferate "symbols eliciting hope, satisfaction, caring and self-esteem"' (Stevens 53). In staging shows (such as the 'Working Drafts' exhibition) and commissioning art, biotech companies and their lobbyists began 'to create the visual and discursive languages they desire' (Stevens 53) and

to disseminate them through media outlets and into popular culture and discourse, thus shaping public opinion.

Genohype does not just convey the message that all biology is genetics, but further simplifies and reduces the complex scientific discoveries involved into catch-phrases that can be exploited by liquid modern, neoliberal realities: “‘We are our DNA’ is one of these simplistic and misleading rhetorical statements’ (Zurr and Catts, ‘Ethics’ 126), as is the assertion that DNA is a code, which can be used to ‘unlock’ the mysteries of life. In this rhetoric, one can identify the HGP’s original utopian metaphysical promise ‘to reveal the genetic blueprint that tells us who we are’ (Fox Keller 4), but it also hints at more concrete transhumanist promises such as those made by the American Museum of Natural History, when they announced their ‘Genomic Revolution’ exhibit: ‘By the year 2020 it is highly possible that the average human life span will be increased by 50 percent; gene therapy will make most common surgery of today obsolete; and we will be able to genetically enhance our capacity for memory’ (cited in Stevens 45). In remaining with the simplistic equation of DNA as code, curing a disease should be as simple as finding the defective line of code and replacing or deleting it. At heart, genohype allows for the ultimate utopian promise – that with technological progress (in genetic engineering) that last chaotic aspect of biological life can be conquered: ‘After all, we are still granted a certain sense of control when dealing with a body that is neatly and logically codified according to its DNA pair bases, rather than when we are confronted by the messy and irrationally behaving visceral body’ (Zurr and Catts, ‘Big Pigs’).

Reality, as opposed to this rhetorical strategy, is not as neat and optimistic. Gene therapy, the cash cow of neoliberal biotech companies, has so far produced only failures and not a single success: ‘while there are several hundred ongoing experiments, not a single one has proven that human gene therapy can offer permanent relief without side effects’ (Stevens 47). And where originally the HGP was supposed to provide a ‘Rosetta Stone’ to unlock the vast genetic potential, molecular geneticist William Gelbart now speaks of his profession as being ‘functional illiterates’ (cited in Fox Keller 6), resulting in the need to change tactics in genetic research: The new phase now necessary is ‘*functional* genomics rather than structural genomics’ (Fox Keller 7) in order to determine the intricacies of how genetic information expresses a certain biological meaning. Evelyn Fox Keller argues, ‘Contrary to all expectations, instead of lending support to the familiar notions of genetic determinism that have acquired so powerful grip [sic] on the popular imagination, these successes [of the HGP] pose critical challenges to such notions’ (5).

The notion that original claims for the HGP (and much of the rhetoric driving genohype) are fantasies of transhumanist and neoliberal making is thus made the butt of the joke proposed by TC&A's *Wings Detached*. The wings themselves are characterized as 'the good, the bad, and the extinct,' referencing the evaluation of genetic traits and the inherent possibility of 'genetic-based eugenics' (Zurr and Catts, 'Big Pigs'). By shaping the wings in reference to bird, bat, and lizard (pterosaur), the artists reference the mythological values attached to specific genotypes and the risk involved in such evaluation: The wings become strong symbols for angelic goodness/purity, demonic badness/impurity, and scientific/evolutionary extinction. Interestingly, Zurr and Catts also point out how the human fared in terms of this mythologizing of biology and the artificial creation of wings: 'But it might help us to remember that the implicit humane/angelic continuum also carries the curse of the mythic Icarus, who burnt his wings trying to fly too close to the sun' ('Big Pigs'). The utopian promise of Daedalus's invention turned dystopian and cost the 'over-achieving' son his life – this critique is just as much part of the metaphorical dimension of this art project as is the proverbial flying pig. In the end, with the miniscule dimensions (4cm by 2cm) and the inappropriate presentation of the wings (in jewelry boxes), it becomes depressingly clear to viewers that the 'Pig Wings embody the promise and the disappointment, which underlies the rhetoric and hype of scientific discoveries and implications' ('Big Pigs').

In terms of its sociological position, genohype can be placed firmly within the strategies of liquid modernity as described by Bauman. By claiming that each individual is locked into the code of DNA, responsibility (in the sense of changing one's DNA) is also found only in the individual. The hunter's utopia thus is the search for options to eliminate weaknesses in one's own DNA and to improve one's fitness. Neoliberal conceptions of DNA as patented source material for solutions to life choices and the marketing of 'cures' for flaws in the individual genome all fall squarely within both conceptions of liquid modern realities and genohype conceptions of technoscience. Life, in its genetic essentialist form of DNA, becomes a marketable commodity. In addition, all of this strongly co-relates with the views presented not by critical posthumanism but by transhumanism. Evolving humanity by eliminating the bugs in its code, transcending biological determinism by altering the building blocks – all of this is part of the transhumanist agenda and one possible option to improve upon the currently flawed material embodiment of the human.

The cultural artifacts of biopunk presented in this study thus all prove to be interventions into and critiques of this form of genohype

(though not always equally successful). Leaving aside the fact that ‘any attempt to critique the power of genomics in fact reiterates its power through those gestures of deconstruction’ (O’Riordan 73), these artifacts oppose genohype by self-consciously navigating perspectives informed by critical posthumanism, a critique of liquid modern realities, and an awareness of the science-fictional dimensions of possibility and consequence. They are cultural discursive interventions that provoke and educate viewers/readers/players by presenting dystopian visions of the posthuman and relating them back to contemporary social and political realities – signaling both a warning about the future and a call to recognize possible actions.

In a way, biopunk artists such as those presented here may already have experimented with and aligned their work to an alternative conception of the life sciences that Zurr and Catts propose as the critical solution to genohype and the transhumanist notion of genetic determinism and reductionism. Their proposal is to shift the paradigmatic metaphor in thinking about life from DNA to cell, from data and informational technology to community and sociology. The organization of life is thus dependent on three interdependent factors, ‘genes, organism, and the environment’ (Zurr and Catts, ‘Ethics’ 136):

these relationships [organism and its environment] are not simply a matter of information processing, but of informatic-based understandings of biological life that is inseparable from the material, meaning-making process of the organism: Biology must therefore first consider the living as a meaningful being. ... To live is to spread out; it is to organize a milieu starting from a central reference point that cannot itself be referred to without losing its original meaning. (Canguilhem, cited in Zurr and Catts, ‘Ethics’ 136, bracketed material in the original)

Information held by the gene might express itself differently in different organisms and be massively influenced by the environment. In using the cell as the basis of biological life, community and interrelation are stressed, while retaining individually operating units: ‘[C]ell theory allows autonomy to parts which can operate, evolve, and mutate independently and in direct relation to their surrounding’ (Zurr and Catts, ‘Ethics’ 138). This, of course, is strongly reminiscent of the critical posthumanist position of a *zoe*-centric, hybrid, and interrelated subjectivity as proposed by Braidotti.

This leads us back to Bauman’s sociology and his twofold interrogation of liquid modernity that has been discussed throughout the previous

chapters. Bauman's work can be grouped under two different aspects: (1) analyzing the 'meta-level' (Tester 162) of globalization, its functions, and social consequences, the relations that cells find with and to each other, the global environmental influences. And (2) analyzing the 'life-political level' (Tester 162), the individual life choices, the personal consequences, the cells themselves, the autonomous parts, and their operations.

Literary biopunk, as exemplified by Paolo Bacigalupi and Margaret Atwood, allows for the most far-reaching extrapolations of the social consequences of genetic engineering; furthermore, it provides the broadest and most 'meta' level of abstraction. It is thus little wonder that both depicted literary worlds open up questions of future hybridized societies. Importantly, both portray the creation of posthuman, genetically engineered entities and in it reveal the chaotic force of *zoe*, the messiness of biology claimed by Zurr and Catts. The environmental influences on and the embodied reality of the genetic information prove too strong an interference for transhumanist or neoliberal utopias to come into existence. The genetically coded creatures (both human and non-human animals) prove too adaptable for commodification and in the end run amok, disclosing the precariousness of alleged biological categories and the fallibility of humanist notions of exceptionalism.

Instead these literary extrapolations of the liquid modern consumption of life debunk the myth of human superiority and the genetic determinism of genotype by flaunting epigenetic and environmental factors in the development of organisms. The focus on the social and communal aspects of the consequences of technoscientific developments finds its outlet in the long and thoughtful story arcs of science fiction literature. Both Atwood and Bacigalupi use this medium to provide an outlook onto future generations and the changes brought about by the technoscientific progress of genetics in liquid modernity. By explicating the needs and concerns of a consumer society that led to the creation of genetically engineered beings, the commodification of life, and the global capitalist drives towards new marketable products, both authors focus their attention first on the science-fictional dimension of possibility that current genotype trends open up and thus reveal more the reflection of a dystopian present than a dystopian future. In a second step, though, both authors explore these trends further and engage in an extrapolation of a future posthuman society, shifting their focus onto the science-fictional dimension of consequence. Here, both seem confident that a paradigmatic change will lead towards a eutopian moment, in which a critical posthuman subjectivity has become a possibility. Whereas Bacigalupi is more pessimistic about whether the human will survive, instead projecting a conflict between two competing species and simply

conjuring up the image of a posthuman entity that is better equipped for the changed realities of this new future, Atwood remains hopeful that human and non-human will merge into a hybrid, interconnected, and protean form of society, embracing the other perspective and adding to our understanding of 'what counts as the basic frame of reference for the human' (Braidotti 40).

Similarly, the biopunk zombie films discussed in chapter 7 offer a globalized view of liquid modernity by extrapolating contemporary trends of exterritoriality, of capitalist sovereignty in the form of Empire and the ensuing global conflicts of terrorism. Here, the focus of the writers involved (Paul W.S. Anderson for the *Resident Evil* series and Danny Boyle and Alex Garland for the *28 Days* franchise) is clearly on the science-fictional dimension of consequence, extrapolating the genetic engineering of *zoe* (in the form of viruses and bacteria) for posthuman thanato-technological warfare. In allegorizing the global spread of exterritorial Empire and terrorism as a genetically engineered zombie plague, the massive ramifications of social inequality and the precariousness of human lives is enacted as a literal fight for survival against the necropolitical machinations of the capitalist system. All those falling prey to necropolitical control become wasted lives in Bauman's sense as redundant parts of society – in the visual metaphor of the films, they die and return without social productivity as zombies.

In terms of the genohype, the genetic code of the manufactured plague is shown to be highly mutable and adaptive, thus rejecting any fantasies of necropolitical control over the patented DNA and the selective manipulation of genetic traits for profit. Instead, zombies function similar to cancer in cell theory: No matter what the original purpose or make-up of the cell, once the mutation sets in, the cell is converted and taken over. Ironically, the view of a future human demise as dystopian is subverted in the films by the critical posthumanist reading of zombie subjectivity. From a *zoe*-centric viewpoint, human society and its influence in the form of the Anthropocene has proven far more destructive to life on earth than the zombies will be. In effect, the cancer is not just better equipped to live but also less disruptive to other life. The zombie consequently represents (from a human perspective) an incomprehensible utopian moment that imagines a time after the Anthropocene, a future without the human in it. The open-ended structure of the zombie film narrative, its 'anticatharsis' (91) of not allowing the human survivors to reclaim normalcy, as Lauro and Embry argued, further enhances this posthumanist reading in that no enclave, no human habitat is ever safe from the threat of zombification. The cancer might be remittent but can never be cured. In its serial

structure, the zombie film franchise and its allegorization of globalization forces are thus ideally geared to represent the continuous need for vigilance and outspoken warning that Bauman sees as the purpose of sociology (see *Liquid Modernity* 216).

At the other end of the spectrum of Bauman's thoughts on liquid modernity is its growing influence over the private sphere and the reforming of systemic risks and communal responsibilities as issues to be dealt with by the individual via their life choices. This 'life-political level' of liquid modernity, for example, strongly influences current notions of family and parenthood, according to Bauman, in that these are similarly subject to commodification and no longer provide the institutional stability they might have presented before. Independent filmmaker Vincenzo Natali is thus able to focus on the personal life choices of procreation in his film *Splice* by using the genotype notion of programmable life, DNA as coded information that can be copied and pasted to create a hybrid entity with specific traits selected by reading the blueprint. In concentrating on the science-fictional dimension of consequence (what it means to create life), rather than the dimension of possibility (how that life is created genetically), the film strongly emphasizes liquid modern anxieties about commitment and fixity. The film thus intimately negotiates the consequences of the commodification of life, using the posthuman genetically created splice to showcase the unpredictability and monstrosity of *zoe*. Further, *Splice* engages in a lively debate about genetic determinism by calling into question perceived notions of identifying specific genetic traits and revealing instead the interconnection of gene, organism, and environment.

Visually, the film favors a highly personal narrative viewpoint (focused on the life choices of the two scientists) that relates the individual consequences of liquid modernity to the viewer, rather than foregrounding the larger social groups of survivors depicted in the zombie films. Further, the concentration on interpersonal relations and psychological anxieties instead of the mainstream depiction of action places *Splice* in a different register of filmic language altogether. The film portrays its posthuman entity not as gory and horrific creature (the zombie) but rather as mysterious alien life form, shocking and fascinating at once, monstrous in its categorial uncertainty between human and non-human. The dystopian imagination of the film is not a vision of humanity being replaced by the posthuman, but a struggle with the monstrous as already present in and part of the human.

In *Splice*, the other becomes a monstrous reflector of human identity construction through the interplay of both nature (DNA) and nurture (environment), highlighting the uncertainty in this distinction. In

contrast, the video game *BioShock* fully engages in speculations of genotype and the deterministic notion of readable and adaptable DNA – allowing for genetic manipulation of the self. The game focuses on personal life choices in hypercapitalist consumer society, but rather than stressing the potential of the posthuman other to be exploited (as *Splice* or the biopunk zombie films did), *BioShock* concentrates on the transhumanist notion of individual transcendence and self-advancement. In the world of Rapture, the individual is faced with the need to constantly adapt to new environmental challenges, forcing a continuous motion of becoming-posthuman in the transhumanist sense of being able to buy the commodity of a new and personalized set of DNA. But the game subverts this utopian ideal of exchangeable genetic identities by revealing the mutability and uncontrollability of the new DNA, leading to the destruction of the human base DNA and the loss of all distinguishing marks – in effect turning utopia into dystopia and conflating all posthumans into a faceless mass of enemies driven by their desire to further consume identities and regain individuality.

Moreover, the game flaunts the desire to consume and conform to the social mores of a hypercapitalist society in that it integrates the player into complicity with the moral values conveyed in the game via metalepsis. As a medium that foregrounds interactivity and the agency of the player in choosing the path of the game, the mechanics of *BioShock* highlight the illusionary nature of any player autonomy and the *de facto* exclusion of the interactor from the authorship of the game. As an allegory for consumer society, this mechanic thus reveals the fallacy of a belief in the individual as determined by DNA and thus empowered by technoscience and the commodification of life. There is no freedom of choice to act to their own benefit, but only the systemic need to continuously counteract the insecurities and indeterminacies of liquid modernity.

As I have thus shown, Bauman's compass for liquid modernity is present on both the globalized meta-level and the life-political level of individual life choices. Biopunk cultural artifacts explicitly foreground the science-fictional dimensions of liquid modernity by using concepts of genetic engineering and biotechnology. Bauman's sociological thought thus reverberates in these biopunk dystopias, emphasizing the need for education in contemporary times, sounding a warning call that globalized risks and individual life choices are two sides of the same liquefaction of social mores and values. But as my discussion of the TV series *Heroes* has shown, the two interrogations of liquid modernity are able to meet. Posthumanity here functions as a catalyst that allows us, humanity, to evolve and eradicate globalized risks – not via the

dissolving institutions and social structures of solid modernity but in newly founded communities of individuals. And whereas the newly established community of posthumanity might resemble Zurr and Catts's cell theory of autonomous parts that interact and grow with and through their environment, at the heart of this series is the deeply genetically deterministic and genotype-inspired notion of the potential for heroism springing from the genetic ability to evolve into posthumanity.

As I have said, not all examples of biopunk are equally successful at resisting genotype and the transhumanist notion of human individualistic transcendence, and *Heroes* is definitely fraught with problems in that regard. Nonetheless, it still submits the idea of communal, cooperative, and interrelated subjectivity as a basis for addressing the social and political problems of liquid modernity as central. In this, the examined cultural artifacts of biopunk science fiction are united. All of them posit a utopian potential for a different future by revealing a critical posthumanist notion of subjectivity as key. This potential might not include us, or include only a radically altered version of us, but it is existent. In extrapolating the dystopian present of liquid modernity and disclosing the diminishing dimension of science-fictionality in terms of the possibilities of technoscience, especially genetic engineering, biopunk dystopias function thus as education and warning. They are a cultural intervention into the sociological dimension, in that they are 'aimed at disclosing the possibility of living together differently' (Bauman, *Liquid Modernity* 215). And this possibility includes not just the human, but also the inhuman, non-human, and posthuman, in all their *zoe*-centric, hybrid, and interconnected subjectivity.

Works Cited

- 28 Days Later*. 2002. Dir. Danny Boyle. Blu-ray. Twentieth Century Fox, 2010.
- 28 Weeks Later*. 2007. Dir. Juan Carlos Fresnadillo. Blu-ray. Twentieth Century Fox, 2010.
- '2k Games: BioShock.' *2k*. Web. Accessed March 17, 2014. <<https://www.2k.com/games/bioshock>>.
- Aarseth, Espen J. *Cybertext: Perspectives on Ergodic Literature*. Baltimore: Johns Hopkins UP, 1997.
- Agamben, Giorgio. *Homo Sacer: Sovereign Power and Bare Life*. 1995. Trans. Daniel Heller-Roazen. Stanford: Stanford UP, 1998.
- Aichele, George. 'The Posthumanity of "the Son of Man": Heroes as Postmodern Apocalypse.' *Journal of Religion and Popular Culture* 23.3 (2011). HTML version via Academic OneFile. Web. Accessed May 20, 2014. n. pag.
- Aldiss, Brian W. *Billion Year Spree: The True History of Science Fiction*. Garden City: Doubleday, 1973.
- Aldred, Jessica, and Brian Greenspan. 'A Man Chooses, a Slave Obeys: *Bioshock* and the Dystopian Logic of Convergence.' *Games & Culture* 6.5 (2011): 479–96.
- Althusser, Louis. 'Marxism and Humanism.' *Posthumanism*. Ed. Neil Badmington. Basingstoke: Palgrave, 2000. 30–33.
- Ames, Melissa. 'The Fear of the Future and the Pain of the Past: The Quest to Cheat Time in *Heroes*, *Flash Forward*, and *Fringe*.' *Time in Television Narrative: Exploring Temporality in Twenty-First-Century Programming*. Ed. Melissa Ames. Jackson: U of Mississippi P, 2012. 110–24.
- Appleton, Sarah A. 'Corp(Se)ocracy: Marketing Death in Margaret Atwood's *Oryx and Crake* and *The Year of the Flood*.' *LATCH: A Journal for the Study of the Literary Artifact in Theory, Culture, or History* 4 (2011): 63–73.
- Aridzanjan, Hakob. "'Play, Would You Kindly": *Bioshock's*, *Portal's* and *The Stanley Parable's* Deconstruction of Player Freedom in Video Games.' Unpublished student term paper. Hamburg: University of Hamburg, 2013.
- Atwood, Margaret. *MaddAddam*. Toronto: McClelland, 2013.
- . 'My Life in Science Fiction.' *Cynos* 22.2 (2005): 155–76.
- . *Oryx and Crake*. 2003. New York: Anchor, 2004.
- . *The Year of the Flood*. Toronto: McClelland, 2009.

- Baccolini, Rafaella, and Tom Moylan, eds. *Dark Horizons: Science Fiction and the Dystopian Imagination*. New York: Routledge, 2003.
- Bacigalupi, Paolo. *Pump Six and Other Stories*. San Francisco: Night Shade, 2008.
- . *The Windup Girl*. San Francisco: Night Shade, 2009.
- Badmington, Neil. *Alien Chic: Posthumanism and the Other Within*. London: Routledge, 2004.
- . 'Introduction: Posthuman Conditions.' *Subject Matters: A Journal of Communications and the Self* 3/4 (2003): ix–xii.
- , ed. *Posthumanism*. Basingstoke: Palgrave, 2000.
- . 'Theorizing Posthumanism.' *Cultural Critique* 53 (2003): 10–27.
- Bakhtin, Mikhail. *Rabelais and his World*. Trans. Helene Iswolsky. Cambridge: MIT UP, 1968.
- Barnet, Belinda. 'Technical Machines and Evolution.' *CTheory*. March 16, 2004. Web. Accessed April 15, 2014. <<http://www.ctheory.net/articles.aspx?id=414>>.
- Barr, Marleen S. 'Fantastic Language/Political Reporting: The Postcolonial SF Illocutionary Force Is with Us.' *Collisions of Reality: Establishing Research on the Fantastic in Europe*. Ed. Lars Schmeink and Astrid Böger. Berlin: De Gruyter, 2012. 67–84.
- Barthes, Roland. 'The Great Family of Man.' *Posthumanism*. Ed. Neil Badmington. Basingstoke: Palgrave, 2000. 11–13.
- Bauman, Zygmunt. *44 Letters from the Liquid Modern World*. Cambridge: Polity, 2011.
- . 'Chasing Elusive Society.' *International Journal of Politics, Culture, and Society* 18.3/4 (2005): 123–41.
- . *Collateral Damage: Social Inequalities in a Global Age*. Cambridge: Polity, 2011.
- . *Culture in a Liquid Modern World*. Trans. Lydia Bauman. London: Polity, 2010.
- . 'The Fate of Humanity in the Post-Trinitarian World.' *Journal of Human Rights* 1.3 (2002): 283–303.
- . *Globalization: The Human Consequences*. London: Polity, 1998.
- . *The Individualized Society*. London: Polity, 2001.
- . *In Search of Politics*. London: Polity, 1999.
- . *Intimations of Postmodernity*. London: Routledge, 1992.
- . *Liquid Modernity*. 2000. 2nd edition with new foreword. Cambridge: Polity, 2012.
- . *Liquid Love: On the Frailty of Human Bonds*. Cambridge: Polity, 2003.
- . *Liquid Fear*. Cambridge: Polity, 2006.
- . *Liquid Times: Living in an Age of Uncertainty*. London: Polity, 2007.
- . *Living on Borrowed Time: Conversations with Citlali Roviroso-Madrazo*. Cambridge: Polity, 2010.
- . *Mortality, Immortality and Other Life Strategies*. Cambridge: Polity, 1992.
- . 'Reconnaissance Wars of the Planetary Frontierland.' *Theory, Culture & Society* 19.4 (2002): 81–90.
- . *Socialism: The Active Utopia*. London: Allen & Unwin, 1976.
- . *Society Under Siege*. Cambridge: Polity, 2002.

- . 'Wars of the Globalization Era.' *European Journal of Social Theory* 4.1 (2001): 11–28.
- . *Wasted Lives: Modernity and Its Outcasts*. Cambridge: Polity, 2004.
- Bauman, Zygmunt, and Keith Tester. *Conversations with Zygmunt Bauman*. Cambridge: Polity, 2001.
- Bear, Greg. *Blood Music*. 1985. London: Gollancz, 2001.
- Beck, Ulrich. *Risk Society: Towards a New Modernity*. Trans. Mark Ritter. London: Sage, 1992.
- . 'Zombie Categories: Interview with Ulrich Beck.' Interview by Jonathan Rutherford. Beck and Beck-Gernsheim 202–13.
- Beck, Ulrich, and Elisabeth Beck-Gernsheim. *Individualization: Institutionalized Individualism and Its Social and Political Consequences*. London: Sage, 2002.
- Beck-Gernsheim, Elisabeth. 'Health and Responsibility in the Age of Genetic Technology.' Beck and Beck-Gernsheim 139–50.
- 'Behind the Scenes.' Featurette. *Splice*. Dir. Vincenzo Natali. Blu-ray. Universum, 2010.
- Berghaller, Hannes. 'Housebreaking the Human Animal: Humanism and the Problem of Sustainability in Margaret Atwood's *Oryx and Crake* and *The Year of the Flood*.' *English Studies: A Journal of English Language and Literature* 91.7 (2010): 728–43.
- 'Beyond Raccoon City: Unearthing Resident Evil Extinction.' Featurette. *Resident Evil: Extinction*. 2007. Dir. Russell Mulcahy. Blu-ray. Sony, 2012.
- BioShock*. Creator Ken Levine. Irrational Games, 2k Games, 2007.
- BioShock Wiki*. Web. Accessed March 20, 2014. <http://bioshock.wikia.com/wiki/BioShock_Wiki>.
- Birch-Bayley, Nicole. 'Terror in Horror Genres: The Global Media and the Millennial Zombie.' *Journal of Popular Culture* 45.6 (2012): 1137–51.
- Birkenstein, Jeff, Karen Randell, and Anna Froula, eds. *Reframing 9/11: Film, Popular Culture and the 'War on Terror'*. New York: Continuum, 2010.
- Bishop, Kyle. 'Dead Man Still Walking: A Critical Investigation into the Rise and Fall ... and Rise of Zombie Cinema.' Dissertation. University of Arizona, 2009. Web. Accessed January 6, 2013. <http://arizona.openrepository.com/arizona/.../11/azu_etd_10498_sip1_m.pdf>.
- . 'Dead Man Still Walking: Explaining the Zombie Renaissance.' *Journal of Popular Film and Television* 37.1 (2010): 16–25.
- Blavatsky, Helena P. *The Secret Doctrine: The Synthesis of Science, Religion, and Philosophy*. Vol. 2: *Anthropogenesis*. London: Theosophical, 1888.
- Bloom, Michael. 'Reanimating the Living Dead: Uncovering the Zombie Archetype in the Works of George A. Romero.' *Off-Screen* 13.4 (2009). Web. Accessed January 19, 2014. <http://www.offscreen.com/index.php/pages/essays/reanimating_the_living_dead>.
- 'The Body: From Baby Hatcheries to Xeroxing Human Beings'. *Time*. Special section: 'The New Genetics.' April 19, 1971.
- Bogost, Ian. *Persuasive Games: The Expressive Power of Videogames*. Cambridge: MIT Press, 2007.
- Boluk, Stephanie, and Wylie Lenz, eds. *Generation Zombie: Essays on the Living Dead in Modern Culture*. Jefferson: McFarland, 2011.

- Booker, M. Keith. 'Introduction: The Turn to Dystopia in Modern Literature.' *Dystopian Literature: A Theory and Research Guide*. Westport: Greenwood, 1994. 1–9.
- Boon, Kevin. 'And the Dead Shall Rise.' Christie and Lauro 5–8.
- . 'The Zombie as Other: Mortality and the Monstrous in the Post-Nuclear Age.' Christie and Lauro 50–60.
- Bordwell, David. 'Superheroes for Sale.' *Minding Movies: Observations on the Art, Craft, and Business of Filmmaking*. Ed. David Bordwell and Kristin Thompson. Chicago: U of Chicago P, 2011. 21–33.
- Bosco, Mark S.J. 'The Apocalyptic Imagination in *Oryx and Crake*.' *Margaret Atwood: The Robber Bride, The Blind Assassin, Oryx and Crake*. Ed. J. Brooks Bouson. London: Continuum, 2010. 155–71.
- Bostrom, Nick. 'What Is Transhumanism?' 1998. *NickBostrom.com*. Web. Accessed November 15, 2013. <<http://www.nickbostrom.com/old/transhumanism.html>>.
- Botta, Giuseppina. 'Faustian Dreams and Apocalypse in Margaret Atwood's *Oryx and Crake*.' *Local Natures, Global Responsibilities: Ecocritical Perspectives on the New English Literatures*. Ed. Laurenz Volkmann et al. Amsterdam: Rodopi, 2010. 243–55.
- Bould, Mark. 'Cyberpunk.' *A Companion to Science Fiction*. Ed. David Seed. Malden: Blackwell, 2005. 217–31.
- Bould, Mark, and Sherryl Vint. *The Routledge Concise History of Science Fiction*. New York: Routledge, 2011.
- Bourgonjon, Jeroen, Kris Rutten, Ronald Soetaert, and Martin Valcke. 'From Counter-Strike to Counter-Statement: Using Burke's Pentad as a Tool for Analysing Video Games.' *Digital Creativity* 22.2 (2011): 91–102.
- Bouson, J. Brooks. "'It's Game Over Forever": Atwood's Satiric Vision of a Bioengineered Posthuman Future in *Oryx and Crake*.' *Journal of Commonwealth Literature* 39.3 (2004): 139–56.
- Boyle, Danny, and Alex Garland. 'Audio Commentary.' *28 Days Later*. 2002. Dir. Danny Boyle. Blu-ray. Twentieth Century Fox, 2010.
- Braidotti, Rosi. *The Posthuman*. London: Polity, 2013.
- Bray, Hiawatha. 'Bioshock Lets Users Take on Fanaticism Through Fantasy.' Review. *Boston Globe*. August 27, 2007.
- Brooks, Max. *The Zombie Survival Guide: Complete Protection from the Living Dead*. New York: Broadway, 2003.
- Brydon, Diana. 'Atwood's Global Ethic: The Open Eye, the Blinded Eye.' *Margaret Atwood: The Open Eye*. Ed. John Moss and Tobi Kozakewich. Ottawa: U of Ottawa P, 2006. 447–58.
- Buchanan, Robert Williams. *The Book of Orm: A Prelude to the Epic*. London: Strahan, 1870.
- Butler, Andrew M. *Cyberpunk*. Harpenden: Pocket Essentials, 2000.
- Caeners, Torsten. "'You're Broken. I Can Fix You": Negotiating Concepts of U.S. Ideology.' Simmons 130–43.
- Callus, Ivan, and Stefan Herbrechter. 'What's Wrong with Posthumanism?' *Rhizomes* 7 (2003). Web. Accessed October 2, 2010. <<http://www.rhizomes.net/issue7/callus.htm>>.

- Calvert, Bronwen. "‘I’m Different ... Special’: The Body of the Superhero." Simmons 19–29.
- Campbell, Joseph. *The Hero with a Thousand Faces*. 1949. Novato: New World, 2008.
- Canavan, Gerry. 'Hope, but Not for Us: Ecological Science Fiction and the End of the World in Margaret Atwood's *Oryx and Crake* and *The Year of the Flood*.' *Lit: Literature Interpretation Theory* 23.2 (2012): 138–59.
- Captain. 'Splice, Neuromancer and High Rise: The Twisted Future of Vincenzo Natali.' *SFTV*. August 18, 2010. Web. Accessed December 12, 2013. <<http://www.sftv.com.au/news/2010/08/splice-neuromancer-and-high-rise-the-twisted-future-of-vincenzo-natali/>>.
- Case, Eleanor, and Maggie McDonald. 'Life After Man.' Interview with Margaret Atwood. *New Scientist*. May 3, 2003: 40–43.
- Chan, Kenneth. 'Heroes' Internationalism: Toward a Cosmopolitical Ethics in Mainstream American Television.' Simmons 144–55.
- 'Changing Your Genes.' *The Economist*. April 25, 1992: 11–12. Academic OneFile. Web. March 13, 2014.
- Charity, Tom. 'All the Rage'. 2002. *Danny Boyle: Interviews*. Ed. Brent Dunham. Jackson: U of Mississippi P, 2010. 70–73.
- Christie, Deborah. 'And the Dead Shall Walk.' Christie and Lauro 61–65.
- . 'A Dead New World: Richard Matheson and the Modern Zombie.' Christie and Lauro 67–80.
- Christie, Deborah, and Sarah Juliet Lauro, eds. *Better Off Dead: The Evolution of the Zombie as Post-Human*. New York: Fordham UP, 2011.
- Churchwell, Sarah. 'Living in the End Times.' *New Statesman* 142.5172 (2013): 42–43.
- Claeys, Gregory, ed. *The Cambridge Companion to Utopian Literature*. Cambridge: Cambridge UP, 2010.
- . 'The Origins of Dystopia: Wells, Huxley and Orwell.' Claeys, *Companion* 107–31.
- Clute, John. 'Fantastika in the World Storm: A Talk.' Prague. September 20, 2007. Web. Accessed July 14, 2011. <<http://www.johnclute.co.uk/word/?p=15>>.
- Cohen, Jeffrey Jerome, ed. *Monster Theory: Reading Culture*. Minneapolis: U of Minnesota Press, 1996.
- Cohen, Simchi. 'The Already Dead and the Dying. The Zombie as Homo Sacer: Sovereign Power, Bare Life, and George A. Romero's "Dead" Tetralogy.' *Jura Gentium Cinema: Cinema and Globalization*. Web. Accessed January 20, 2014. <<http://www.jgcinema.com/single.php?sl=zombie-as-homo-sacer-romero>>.
- Cole, Amanda. 'In Retrospect: Writing and Reading *Oryx and Crake*.' *Philament* 6 (2005).
- Collins, Margo, and Elson Bond. "‘Off the Page and into Your Brains!': New Millennium Zombies and the Scourge of Hopeful Apocalypses.' Christie and Lauro 187–204.
- Coogan, Peter. *Superhero: The Secret Origin of a Genre*. Austin: MonkeyBrain, 2006.

- Cooke, Grayson. 'Technics and the Human at Zero-Hour: Margaret Atwood's *Oryx and Crake*.' *Studies in Canadian Literature/Etudes en Litterature Canadienne* 31.2 (2006): 105–25.
- Csicsery-Ronay, Istvan, Jr. 'Cyberpunk and Neuromanticism.' *Storming the Reality Studio: A Casebook of Cyberpunk and Postmodern Fiction*. Ed. Larry McCaffery. Durham: Duke UP, 1991. 183–93.
- . 'Marxist Theory and Science Fiction.' *The Cambridge Companion to Science Fiction*. Ed. Edward James and Farah Mendlesohn. Cambridge: Cambridge UP, 2003. 113–24.
- . 'Postmodernism's SF/SF's Postmodernism.' *Science Fiction Studies* 18.3 (1991): 305–08.
- . *The Seven Beauties of Science Fiction*. Middleton: Wesleyan UP, 2008.
- Curnutte, Rick. 'There's No Magic: A Conversation with George A. Romero.' *The Film Journal* 10 (2004). Web. Accessed January 18, 2014. <<http://www.thefilmjournal.com/issue10/romero.html>>.
- Davey, Franck. 'Class and Power in Margaret Atwood's Suburbs and Edge Cities.' *Etudes Canadiennes/Canadian Studies: Revue Interdisciplinaire des Etudes Canadiennes en France* 60 (2006): 97–108.
- Davies, Tony. *Humanism*. London: Routledge, 1997.
- Davis, Diane. 'Preface and Acknowledgements.' *International Journal of Politics, Culture, and Society* 18.3/4 (2005): 109–12.
- . 'Speaking to the Silences: Do We Need a Sociology for the Post-9-11 World?' *International Journal of Politics, Culture, and Society* 18.3/4 (2005): 293–311.
- Davis, Mark. 'Bauman's Compass: Navigating the Current Interregnum.' *Acta Sociologica* 54.2 (2011): 183–94.
- Davis Rogan, Alcena Madeline. 'Utopian Studies.' *The Routledge Companion to Science Fiction*. Ed. Mark Bould et al. London: Routledge, 2009. 308–16.
- Dawson, Ashley. 'Biohazard: The Catastrophic Temporality of Green Capitalism.' *Social Text* 31.1 (114) (2013): 63–81.
- Deleuze, Gilles. 'Postscript on the Societies of Control.' *October* 59, winter (1992): 3–7.
- Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. 1980. Trans. Brian Massumi. Minneapolis: U of Minnesota P, 1987.
- Dendle, Peter. *The Zombie Movie Encyclopedia Volume 2: 2000–2010*. Jefferson: McFarland, 2012.
- . 'Zombie Movies and the "Millennial Generation."' Christie and Lauro 175–86.
- Deresiewicz, William. 'Honey and Salt.' *The Nation* 289.9 (2009): 25–32.
- Derrida, Jacques. 'The Animal That Therefore I Am (More to Follow).' *Critical Inquiry* 28.2 (2002): 369–418.
- Di Filippo, Paul. 'Ribofunk: The Manifesto.' *Streettech.com*. 1996. Web. Accessed October 2, 2010. <<http://www.streettech.com/bcp/BCPtext/Manifestos/Ribofunk.html>>.
- Diken, Bülent, and Carsten Bagge Laustsen. '7-11, 9/11, and Postpolitics.' *Alternatives: Global, Local, Political* 29.1 (2004): 89–113.

- DiMarco, Danette. 'Paradise Lost, Paradise Regained: Homo Faber and the Makings of a New Beginning in *Oryx and Crake*.' *Papers on Language and Literature: A Journal for Scholars and Critics of Language and Literature* 41.2 (2005): 170–95.
- Dinello, Daniel. *Technophobia: Science Fiction Visions of Posthuman Technology*. Austin: U of Texas P, 2005.
- Downey, Anthony. 'Zones of Indistinction: Giorgio Agamben's "Bare Life" and the Politics of Aesthetics.' *Third Text* 23.2 (2009): 109–25.
- 'Drop (Un) Dead: The Creatures of Retribution.' Featurette. *Resident Evil: Retribution*. 2012. Dir. Paul W.S. Anderson. Blu-ray. Sony, 2013.
- Dunlap, Allison. 'Eco-Dystopia: Reproduction and Destruction in Margaret Atwood's *Oryx and Crake*.' *Journal of Ecocriticism* 5.1 (2013).
- Dunning, Stephen. 'Margaret Atwood's *Oryx and Crake*: The Terror of the Therapeutic.' *Canadian Literature* 186 (2005): 86–101.
- Dvorak, Marta. 'Margaret Atwood's Humor.' *The Cambridge Companion to Margaret Atwood*. Ed. Coral Ann Howells. Cambridge: Cambridge UP, 2006. 114–29.
- Dyson, Freeman. 'Daedalus After Seventy Years.' *Haldane's Daedalus Revisited*. Ed. Krishna R. Dronamraju. Oxford: Oxford UP, 1995. 55–63.
- Fingerroth, Danny. *Superman on the Couch: What Superheroes Really Tell Us About Ourselves and Our Society*. New York: Continuum, 2004.
- Fitting, Peter. 'Utopia, Dystopia and Science Fiction.' Claeys, *Companion* 135–53.
- Foster, Thomas. *The Souls of Cyberfolk: Posthumanism as Vernacular Theory*. Minneapolis: U of Minnesota P, 2005.
- Foucault, Michel. *Discipline and Punish: The Birth of the Prison*. Harmondsworth: Penguin, 1982.
- . *The Order of Things: An Archaeology of the Human Sciences*. New York: Pantheon, 1973.
- . 'Society Must Be Defended': *Lectures at the Collège de France, 1975–76*. Picador: New York, 2003.
- Fox Keller, Evelyn. *The Century of the Gene*. Cambridge: Harvard UP, 2000.
- Frasca, Gonzalo. 'Simulation Versus Narrative: Introduction to Ludology.' *The Video Game Theory Reader*. Ed. Mark J.P. Wolf and Bernard Perron. New York: Routledge, 2003. 221–36.
- Freedman, Carl. 'Hail Mary: On the Author of "Frankenstein" and the Origins of Science Fiction.' *Science Fiction Studies* 29.2 (2002): 253–64.
- Frelik, Pawel. 'Cyberpunk (1980s–1990s)'. Video lecture. *A Virtual Introduction to Science Fiction*. Ed. Lars Schmeink. September 1, 2012. Web. Accessed October 10, 2016. <http://virtual-sf.com/?page_id=328>.
- Froula, Anna. 'Prolepsis and the "War on Terror": Zombie Pathology and the Culture of Fear in *28 Days Later*...' Birkenstein, Randell, and Froula 195–208.
- Fukuyama, Francis. *Our Posthuman Future: Consequences of the Biotechnology Revolution*. New York: Picador, 2002.
- Fürst, Michael, Florian Krautkrämer, and Serjoscha Wiemer, eds. *Untot: Zombie, Film, Theorie*. Munich: Belleville, 2011.

- Galbreath, Marcy. 'Genomic Bodies: Un-Natural Selection, Extinction, and the Posthuman in Atwood's *Oryx and Crake*.' Conference paper. 'Zoontotechnics (Animality/Technicity).' Cardiff. May 12–14, 2010. Web. Accessed April 5, 2014. <https://www.academia.edu/238034/Genomic_Bodies_Un-Natural_Selection_Extinction_and_the_Posthuman_in_Atwoods_Oryx_and_Crake>.
- Galloway, Alexander. *Gaming: Essays on Algorithmic Culture*. Minneapolis: U of Minnesota P, 2006.
- 'Game Over: Resident Evil Reanimated.' Featurette. *Resident Evil: Apocalypse*. 2004. Dir. Alexander Witt. Blu-ray. Sony, 2012.
- 'The Gene-Hack Men.' *Rolling Stone*. April 2002. 893 (2002): 80.
- Gibson, William. *Neuromancer*. 1984. New York: Ace, 1997.
- Giddens, Anthony. *Modernity and Self-Identity: Self and Society in the Late Modern Age*. Stanford: Stanford UP, 1991.
- Graham, Elaine. 'Post/Human Conditions.' *Theology & Sexuality* 10.2 (2004): 10–32.
- . *Representations of the Post/Human: Monsters, Aliens and Others in Popular Culture*. Manchester: Manchester UP, 2002.
- Gray, Chris Hables. *Cyborg Citizen: Politics in the Posthuman Age*. New York: Routledge, 2001.
- Green, Alan Edward, Jr. 'The Post-9/11 Aesthetic: Repositioning the Zombie Film in the Horror Genre.' Dissertation. University of South Florida, 2013. Web. Accessed January 6, 2013. <<http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=5995&context=etd>>.
- Gunn, James. 'Introduction.' *The Road to Science Fiction. Vol. 1: From Gilgamesh to Wells*. Ed. James Gunn. Lanham: Scarecrow, 2002. vii–xviii.
- Habermas, Jürgen. *Die Zukunft der menschlichen Natur: Auf dem Weg zu einer liberalen Eugenik?* Frankfurt/M.: Suhrkamp, 2001.
- Hageman, Andrew. 'The Challenge of Imagining Ecological Futures: Paolo Bacigalupi's *The Windup Girl*.' *Science Fiction Studies* 39.2 (2012): 283–303.
- Halberstam, Judith, and Ira Livingston, eds. *Posthuman Bodies*. Indiana: Indiana UP, 1995.
- Haldane, John Burdon Sanderson. 'Daedalus or Science and the Future.' *Haldane's Daedalus Revisited*. Ed. Krishna R. Dronamraju. Oxford: Oxford UP, 1995. 23–51.
- Hall, Susan L. 'The Last Laugh: A Critique of the Object Economy in Margaret Atwood's *Oryx and Crake*.' *Contemporary Women's Writing* 4.3 (2010): 179–96.
- Halliwell, Martin. 'Awaiting the Perfect Storm.' *Waltzing Again: New and Selected Conversations with Margaret Atwood*. Ed. Earl G. Ingersoll. Princeton: Ontario Review, 2006. 253–64.
- Hantke, Steffen. 'On the Acceleration of the Undead: Paradigm Change in the American Zombie Film.' *Jura Gentium Cinema*. Web. Accessed June 12, 2014. <<http://www.jgcinema.com/single.php?sl=Horror-Fear-Capitalism-Market>>.
- Haraway, Donna J. *The Companion Species Manifesto: Dogs, People, and Significant Otherness*. Chicago: Prickly Paradigm, 2003.
- . 'A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the

- Late Twentieth Century.' *Simians, Cyborgs, and Women – The Reinvention of Nature*. New York: Routledge, 1991 (1986). 149–81.
- . *Modest_Witness@Second_Millennium.FemaleMan@_Meets_OncoMouse™: Feminism and Technoscience*. New York: Routledge, 1997.
- . *When Species Meet*. Minneapolis: U of Minnesota P, 2008.
- Hardt, Michael, and Antonio Negri. *Empire*. Cambridge: Harvard UP, 2000.
- . *Multitude: War and Democracy in the Age of Empire*. London: Hamilton, 2005.
- Harrison, Genevieve. 'Danny Boyle: A Death Less Ordinary.' *Danny Boyle: Interviews*. Ed. Brent Dunham. Jackson: U of Mississippi P, 2010. 74–77.
- Hartwell, David G., and Kathryn Cramer. 'Introduction: How Shit Became Shinola: Definition and Redefinition of Space Opera.' *The Space Opera Renaissance*. New York: Tor, 2006.
- Harvey, David. *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change*. Oxford: Blackwell, 1989.
- Hassan, Ihab. 'Prometheus as Performer: Toward a Posthumanist Culture?' *Performance in Postmodern Culture*. Ed. Michel Benamou and Charles Caramello. Madison: Coda, 1977. 201–20.
- Hassapopoulou, Marina. 'Spoiling Heroes, Enhancing Our Viewing Pleasure: NBC's *Heroes* and the Re-Shaping of the Televisual Landscape.' *Writing and the Digital Generation: Essays on New Media Rhetoric*. Ed. Heather Urbanski. Jefferson: McFarland, 2010. 45–57.
- Hatch, Ronald B. 'Margaret Atwood, the Land, and the Ecology.' *Margaret Atwood: Works and Impact*. Ed. Reingard M. Nischik. Rochester: Camden, 2000. 180–201.
- Hayles, N. Katherine. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. Chicago: U of Chicago P, 1999.
- Heller, Arno, Walter Hölbing, and Waldemar Zacharasiewicz, eds. *Utopian Thought in American Literature: Untersuchungen zur literarischen Utopie und Dystopie in den USA*. Tübingen: Narr, 1988.
- Hengen, Shannon. 'Moral/Environmental Debt in *Payback* and *Oryx and Crake*.' *Margaret Atwood: The Robber Bride, The Blind Assassin, Oryx and Crake*. Ed. J. Brooks Bouson. London: Continuum, 2010. 129–40.
- Herbe, Sarah. *Characters in New British Hard Science Fiction, with a Focus on Genetic Engineering in Paul McAuley, Alastair Reynolds and Brian Stableford*. Heidelberg: Winter, 2012.
- Herbrechter, Stefan. *Posthumanism: A Critical Analysis*. London: Bloomsbury, 2013.
- Heroes: The Complete Collection*. 2006–10. Blu-ray. Universal Pictures, 2011.
- Heroes. Graphic Novels*. Issues #1–173. Web. Accessed June 9, 2010. Unavailable. <<http://www.nbc.com/heroes/novels>>. #1–157, archived at *Talarino*. Web. May 20, 2014. <<http://talarino.com/heroes/>>.
- Heroeswiki.com*. Web. Accessed May 19, 2014. <http://heroeswiki.com/Main_Page>.
- Hilton, Laura. "'Niki's Not Here Right Now": Fragmented Identity in NBC's *Heroes*.' *Simmons* 78–89.
- Hirsch, David A. Hedrich. 'Liberty, Equality, Monstrosity: Revolutionizing the Family in Mary Shelley's *Frankenstein*.' *J. Cohen* 115–40.

- Hocking, Clint. 'Ludonarrative Dissonance in Bioshock.' *Click Nothing*. October 7, 2007. Web. Accessed October 15, 2013. <http://clicknothing.typepad.com/click_nothing/2007/10/ludonarrative-d.html>.
- Hoogheem, Andrew. 'Secular Apocalypses: Darwinian Criticism and Atwoodian Floods.' *Mosaic: A Journal for the Interdisciplinary Study of Literature* 45.2 (2012): 55–71.
- Hourigan, Benjamin. 'A Slave Obeys, a Player Chooses.' *The Institute of Public Affairs Review: A Quarterly Review of Politics and Public Affairs* 61.1 (2009): 20.
- Hulsey, Tim. 'Dawn of the Dead and Ressentiment.' *MyStupidDog*. Blog. March 18, 2004. Web. Accessed January 15, 2014. <http://mystupiddog.blogspot.de/2004_03_14_mystupiddog_archive.html>.
- 'Human Genome Project'. *National Institutes of Health*. Web. Accessed December 12, 2015. <<https://report.nih.gov/nihfactsheets/ViewFactSheet.aspx?csid=45>>.
- Hume, Kathryn. 'Diffused Satire in Contemporary American Fiction.' *Modern Philology* 105.2 (2007): 300–25.
- Hunter, Allan K. 'Evolution, Revolution and Frankenstein's Creature.' *Frankenstein's Science: Experimentation and Discovery in Romantic Culture, 1780–1830*. Ed. Christa Knellworth and Jane Goodall. Aldershot: Ashgate, 2008. 133–49.
- Hustis, Harriet. 'Responsible Creativity and the "Modernity" of Mary Shelley's Prometheus.' *Studies in English Literature, 1500–1900* 43.4 (2003): 845–58.
- Ingersoll, Earl G. 'Survival in Margaret Atwood's Novel *Oryx and Crake*.' *Extrapolation: A Journal of Science Fiction and Fantasy* 45.2 (2004): 162–75.
- Jacobsen, Michael Hviid. 'Bauman on Utopia: Welcome to the Hunting Zone.' *The Sociology of Zygmunt Bauman: Challenges and Critique*. Ed. Michael Hviid Jacobsen and Poul Poder. Aldershot: Ashgate, 2008. 209–30.
- . 'Liquid Modern "Utopia": Zygmunt Bauman on the Transformation of Utopia.' Jacobsen and Tester 69–96.
- Jacobsen, Michael Hviid, and Keith Tester, eds. *Utopia: Social Theory and the Future*. Farnham: Ashgate, 2012.
- Jacoby, Russell. *The End of Utopia: Politics and Culture in an Age of Apathy*. New York: Perseus, 1999.
- . *Picture Imperfect: Utopian Thought for an Anti-Utopian Age*. New York: Columbia UP, 2005.
- Jameson, Fredric. 'The Dialectics of Disaster.' *South Atlantic Quarterly* 101.2 (2002): 297–304.
- . *Postmodernism or, The Cultural Logic of Late Capitalism*. Durham: Duke UP, 1991.
- . 'Then You Are Them.' *London Review of Books* 31.17 (2009): 7–8. Print.
- Jaroff, Leon. 'The Gene Hunt.' *Time*. March 20, 1989.
- Jones, Denna. "'Working Drafts": Art of the Genome.' Wellcome Trust. November 14, 2001. Web. Accessed June 20, 2014. <http://genome.wellcome.ac.uk/doc_WTD021029.html>.
- Jowett, Lorna. 'Heroes, Control and Regulation.' Simmons 119–29.
- Juul, Jesper. *Half-Real: Video Games Between Real Rules and Fictional Worlds*. Cambridge: MIT Press, 2005.

- Kac, Eduardo. 'Life Transformation – Art Mutation.' *Signs of Life: Bio Art and Beyond*. Cambridge: MIT Press, 2007. 163–84.
- Katz, Sylvan. 'Forum: Roses Are Black, Violets Are Green: The Emergence of Amateur Genetic Engineers.' *New Scientist* 125.1698 (1990): 66.
- Kay, Glenn. *Zombie Movies: The Ultimate Guide*. Chicago: Chicago Review, 2008.
- Kennedy, Sean. "A Man Chooses; a Slave Obeys" – Player Identity and Manipulation in Video Game Narrative.' Conference paper. 'The Philosophy of Computer Games.' Athens. April 6–9, 2011. Web. Accessed March 15, 2014. <<http://gameconference2011.files.wordpress.com/2010/10/a-man-chooses.pdf>>.
- Kessel, John. 'Cyberpunk.' *The New Encyclopedia of Science Fiction*. Ed. James Gunn. New York: Viking, 1988. 116–18.
- Kluger, Jeffrey. 'Will We Follow the Sheep?' *Time*. March 10, 1997.
- Krzywinska, Tanya. 'Hands on Horror.' *ScreenPlay: Cinema/Videogames/Interfaces*. Ed. Geoff King and Tanya Krzywinska. London: Wallflower, 2002. 206–25.
- . 'Zombies in Gamespace: Form, Context, and Meaning in Zombie-Based Video Games.' *McIntosh and Leverette* 153–68.
- Ku, Chung-Hao. 'Of Monster and Man: Transgenics and Transgression in Margaret Atwood's *Oryx and Crake*.' *Concentric: Literary and Cultural Studies* 32.1 (2006): 107–33.
- Kumar, Krishan. *Utopia and Anti-Utopia in Modern Times*. Oxford: Blackwell, 1987.
- Kushner, David. 'Behind the Scenes with *Heroes* Creator Tim Kring and "Hiro," Masi Oka.' *Wired*. April 23, 2007. Web. Accessed May 10, 2014. <<http://archive.wired.com/entertainment/hollywood/news/2007/04/magkring>>.
- Lake, Christina Bieber. *Prophets of the Posthuman: American Fiction, Biotechnology, and the Ethics of Personhood*. Notre Dame: U of Notre Dame P, 2013.
- Land of the Dead*. 2005. Dir. George A. Romero. Blu-ray. Universal, 2009.
- Lash, Scott. 'Individualization in a Non-Linear Mode.' Beck and Beck-Gernsheim vii–xiii.
- Latham, Rob. "A Rare State of Ferment": SF Controversies from the New Wave to Cyberpunk.' *Murphy and Vint* 29–45.
- Lauro, Sarah Juliet. 'Afterword: Zombie (R)Evolution.' *Christie and Lauro* 231–35.
- Lauro, Sarah Juliet, and Karen Embry. 'A Zombie Manifesto: The Nonhuman Condition in the Era of Advanced Capitalism.' *boundary 2* 35.1 (2008): 85–108.
- Lee, Raymond L.M. 'Reinventing Modernity: Reflexive Modernization vs Liquid Modernity vs Multiple Modernities.' *European Journal of Social Theory* 9.3 (2006): 355–68.
- Leverette, Marc. 'The Funk of Forty Thousand Years: Or, How the (Un)Dead Get Their Groove On.' *McIntosh and Leverette* 185–212.
- Levin, Josh. 'Dead Run: How Did Movie Zombies Get So Fast?' *Slate.com*. March 24, 2004. Web. Accessed January 12, 2014. <http://www.slate.com/articles/arts/culturebox/2004/03/dead_run.html>.

- Levina, Marina, and Diem-My T. Bui, eds. *Monster Culture in the 21st Century: A Reader*. London: Bloomsbury, 2013.
- Levitas, Ruth. *The Concept of Utopia*. New York: Allan, 1990.
- 'The Life and Views of Ayn Rand: Capitalism's Martyred Hero'. *The Economist*. October 22, 2009. Web. Accessed February 1, 2011. <<http://www.economist.com/node/14698215>>.
- Luckhurst, Roger. *Science Fiction*. London: Polity, 2005.
- Liotard, Jean-François. *The Inhuman: Reflections on Time*. 1988. Trans. Geoffrey Bennington and Rachel Bowlby. Cambridge: Polity, 2004.
- McAlister, Elizabeth. 'Slaves, Cannibals, and Infected Hyper-Whites: The Race and Religion of Zombies.' *Anthropological Quarterly* 85.2 (2012): 457–86.
- MacCormack, Patricia. 'Perversion: Transgressive Sexuality and Becoming-Monster.' *Third Space: A Journal of Feminist Theory & Culture* 3.2 (2004). Web. Accessed January 2, 2016. <<http://journals.sfu.ca/thirdspace/index.php/journal/article/view/maccormack/174>>.
- McCutcheon, David. 'Kevin Levine Talks BioShock.' *IGN*. August 27, 2007. Web. Accessed January 15, 2010. <<http://uk.xbox360.ign.com/articles/816/816020p1.html>>.
- MacFarlane, Alan. 'Individualism.' *The Social Science Encyclopedia*. Vol. 1. Ed. Adam Kuper and Jessica Kuper. London: Routledge, 2004. 485–86.
- McHale, Brian. *Constructing Postmodernism*. London: Routledge, 1992.
- McIntosh, Shawn, and Marc Leverette, eds. *Zombie Culture: Autopsies of the Living Dead*. Lanham: Scarecrow, 2008.
- McKay, Sinclair. 'Margaret Atwood: The Canadian Novelist Talks to Sinclair McKay About Books and Bees.' *The Telegraph*. August 20, 2009. Web. Accessed April 10, 2014. <<http://www.telegraph.co.uk/culture/books/6061404/Margaret-Atwood.html>>.
- Manovich, Lev. *The Language of New Media*. Cambridge: MIT Press, 2001.
- Martinelli, Sarah Crawford, Bryan Ness, Alvin K. Benson, Paul C. St. Amand, Carl L. Bankston III. 'Genetic Engineering.' *Encyclopedia of Genetics*. Vol. 1. Ed. Bryan D. Ness and Jeffrey A. Knight. Pasadena: Salem P, 2004. 326–54.
- Mbembe, Achille. 'Necropolitics.' Trans. Libby Meintjes. *Public Culture* 15.1 (2003): 11–40.
- Melnick, Jeffrey. *9/11 Culture: America Under Construction*. Malden: Wiley, 2009.
- Monroe, Mary Alice. 'The Heroes Kaleidoscope.' Porter, Lavery, and Robson 151–63.
- Moore, Stephen. "'Atlas Shrugged": From Fiction to Fact in 52 Years.' *Wall Street Journal*. January 9, 2009. Web. Accessed February 1, 2011. <<http://online.wsj.com/article/SB123146363567166677.html>>.
- Moravec, Hans. *Mind Children: The Future of Robot and Human Intelligence*. Cambridge: Harvard UP, 1988.
- Moylan, Tom. *Demand the Impossible: Science Fiction and the Utopian Imagination*. New York: Methuen, 1986.
- . *Scraps of the Untainted Sky: Science Fiction, Utopia, Dystopia*. Boulder: Westview, 2000.

- Mumford, Lewis. *The Story of Utopias*. 1922. New York: Viking, 1962.
- Muntean, Nick, and Matthew Payne. 'Attack of the Livid Dead: Recalibrating Terror in the Post-September 11 Zombie Film.' Schopp and Hill 239–58.
- Murphy, Graham J., and Sherryl Vint, eds. *Beyond Cyberpunk: New Critical Perspectives*. New York: Routledge, 2010.
- Murray, Janet H. *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. Cambridge: MIT Press, 1997.
- Natali, Vincenzo, Antoinette Terry, and Doug Taylor. *Splice*. Script. October 4, 2007. Web. Accessed December 13, 2013. <<http://www.joblo.com/scripts/splice.pdf>>.
- Nayar, Pramod K. *Posthumanism*. Cambridge: Polity, 2014.
- Ndalianis, Angela. 'Comic Book Superheroes: An Introduction.' *The Contemporary Comic Book Superhero*. New York: Routledge, 2009. 3–15.
- . 'Do We Need Another Hero?' *Super/Heroes: From Hercules to Superman*. Ed. Wendy Haslem, Angela Ndalianis, and Chris Mackie. Washington: New Academia, 2007. 2–9.
- Neitzel, Britta. 'Gespielte Geschichten: Struktur- und prozessanalytische Untersuchungen der Narrativität von Videospiele.' Dissertation. Bauhaus-Universität Weimar, 2000. Web. Accessed October 20, 2016. <<https://e-pub.uni-weimar.de/opus4/files/69/Neitzel.pdf>>.
- Nelkin, Dorothy, and Susan Lindee. *The DNA Mystique: The Gene as Cultural Icon*. 1995. Ann Arbor: U of Michigan P, 2004.
- 'New Blood: The Undead of Afterlife.' Featurette. *Resident Evil: Afterlife*. 2010. Dir. Paul W.S. Anderson. Blu-ray. Sony, 2012.
- 'The New Genetics: Man into Superman'. *Time*. Special section: 'The New Genetics.' April 19, 1971.
- Newitz, Annalee. 'Biopunk.' Column. *San Francisco Bay Guardian*. August 8, 2001.
- . 'Genome Liberation.' *Salon.com*. January 26, 2002. Web. Accessed January 15, 2010. <<http://www.salon.com/2002/02/26/biopunk/>>.
- . 'Paolo Bacigalupi Talks About New Directions for Hard Science Fiction.' *io9.com*. September 17, 2009. Web. Accessed February 23, 2014. <<http://io9.com/5361970/paolo-bacigalupi-talks-about-new-directions-for-hard-science-fiction>>.
- Nicholls, Peter. 'Cyberpunk.' *The Encyclopedia of Science Fiction*. Ed. John Clute and Peter Nicholls. New York: St. Martin's Press, 1993. 288–90.
- Nixon, Nicola. 'Cyberpunk: Preparing the Ground for Revolution or Keeping the Boys Satisfied?' *Science Fiction Studies* 19.2 (1992): 219–35.
- Norman, Richard. *On Humanism*. London: Routledge, 2004.
- Noske, Barbara. 'The Animal Question in Anthropology: A Commentary.' *Society & Animals* 1.2 (1993): 185–90.
- O'Riordan, Kate. *The Genome Incorporated: Constructing Biodigital Identity*. Farnham: Ashgate, 2010.
- Osborne, Carol. 'Compassion, Imagination, and Reverence for All Living Things: Margaret Atwood's Spiritual Vision in *The Year of the Flood*.' *Margaret Atwood Studies* 3.2 (2010): 30–42.

- Otto, Eric C. "'The Rain Feels New": Ecotopian Strategies in the Short Fiction of Paolo Bacigalupi.' *Green Planets: Ecology and Science Fiction*. Ed. Gerry Canavan and Kim Stanley Robinson. Middleton: Wesleyan UP, 2014. 179–91.
- Packer, Joseph. 'The Battle for Galt's Gulch: Bioshock as Critique of Objectivism.' *Journal of Gaming & Virtual Worlds* 2.3 (2010): 209–24.
- Parker, Helen N. *Biological Themes in Modern Science Fiction*. 1977. Ann Arbor: UMI Research, 1984.
- Parrinder, Patrick. 'Satanism and Genetics: From *Frankenstein* to J.B.S. Haldane's *Daedalus* and Beyond.' *Discourses and Narrations in the Biosciences*. Ed. Paola Spinozzi and Brian Hurwitz. Göttingen: V&R, 2011.
- Parry, Jovian. 'Oryx and Crake and the New Nostalgia for Meat.' *Society & Animals* 17.3 (2009): 241–56.
- Pastourmatzi, Domna, ed. *Biotechnological and Medical Themes in Science Fiction*. Thessaloniki: University Studio Press, 2002.
- Patterson, Meredith. 'A Biopunk Manifesto.' *Live Journal*. January 30, 2010. Web. Accessed February 8, 2012. <<http://maradydd.livejournal.com/496085.html>>.
- Payne, Marshall. 'An Interview with Paul Di Filippo.' *The Fix*. February 15, 2009. Web. Accessed February 13, 2010 <<http://ttapress.com/fix/interviews/paul-di-filippo/>>.
- Peacock, Steven. 'Going Dark in *Heroes*.' Porter, Lavery, and Robson 141–50.
- Pegg, Simon. 'The Dead and the Quick.' *The Guardian*. November 4, 2008. Web. Accessed December 25, 2015. <<http://www.theguardian.com/media/2008/nov/04/television-simon-pegg-dead-set>>.
- Perry, Douglas. 'The Influence of Literature and Myth in Videogames.' *IGN*. May 17, 2006. Web. Accessed January 15, 2010. <<http://uk.xbox360.ign.com/articles/704/704806p1.html>>.
- 'Playing Dead: *Resident Evil* from Game to Screen.' Featurette. *Resident Evil*. 2002. Dir. Paul W.S. Anderson. Blu-ray. Sony, 2012.
- Plumwood, Val. *Environmental Culture: The Ecological Crisis of Reason*. London: Routledge, 2002.
- Pordzik, Ralph. 'The Posthuman Future of Man: Anthropocentrism and the Other of Technology in Anglo-American Science Fiction.' *Utopian Studies* 23.1 (2012): 142–61.
- Porter, Lynette. 'The Redemption of HRG.' Simmons 7–18.
- . *Tarnished Heroes, Charming Villains, and Modern Monsters: Science Fiction in Shades of Gray on 21st Century Television*. Jefferson: McFarland, 2010.
- Porter, Lynette, David Lavery, and Hillary Robson, eds. *Saving the World: A Guide to Heroes*. Toronto: ECW Press, 2007.
- Prucher, Jeff, ed. *Brave New Words: The Oxford Dictionary of Science Fiction*. Oxford: Oxford UP, 2007.
- Pruett, Chris. 'The Prehistory of Survival Horror.' *Dreamdawn.com*. April 5, 2007. Web. Accessed November 4, 2013. <<http://www.dreamdawn.com/sh/features/prehistoryofhorror.php>>.
- Quay, Sara E. and Amy M. Damico, eds. *September 11 in Popular Culture: A Guide*. Santa Barbara: Greenwood, 2010.

- Rand, Ayn. *Atlas Shrugged*. 1957. London: Penguin, 2007.
- Readings, Bill. 'Pagans, Perverts or Primitives? Experimental Justice in the Empire of Capital.' *Posthumanism*. Ed. Neil Badmington. Basingstoke: Palgrave, 2000. 112–28.
- Rehak, Bob. 'Playing at Being: Psychoanalysis and the Avatar.' *The Video Game Theory Reader*. Ed. Mark J.P. Wolf and Bernard Perron. New York: Routledge, 2003. 103–27.
- Reiss, Michael. 'Biotechnology.' *The Concise Encyclopedia of the Ethics of New Technologies*. Ed. Ruth Chadwick. San Diego: Academic, 2001. 13–26.
- Remo, Chris. 'Ken Levine on Bioshock: The Spoiler Interview.' *ShackNews*. August 30, 2007. Web. Accessed March 8, 2014. <<http://www.shacknews.com/article/48728/ken-Levine-on-bioshock-the>>.
- 'Research Areas.' *Future of Humanity Institute*. University of Oxford. Web. Accessed January 3, 2016. <<https://www.fhi.ox.ac.uk/research/research-areas/>>.
- Resident Evil*. 2002. Dir. Paul W.S. Anderson. Blu-ray. Sony, 2012.
- Resident Evil: Afterlife*. 2010. Dir. Paul W.S. Anderson. Blu-ray. Sony, 2012.
- Resident Evil: Apocalypse*. 2004. Dir. Alexander Witt. Blu-ray. Sony, 2012.
- Resident Evil: Extinction*. 2007. Dir. Russell Mulcahy. Blu-ray. Sony, 2012.
- Resident Evil: Retribution*. 2012. Dir. Paul W.S. Anderson. Blu-ray. Sony, 2013.
- Reynolds, Richard. *Super Heroes: A Modern Mythology*. Jackson: University Press of Mississippi, 1992.
- Rieder, John. 'On Defining Sf, or Not: Genre, Sf, and History.' *Science Fiction Studies* 37.2 (2010): 191–209.
- Roberts, Leslie. 'A History of the Human Genome Project.' *Science*. New series. 291.5507 (2001): 1195–1200.
- Robnik, Drehli. 'Das große Taumeln und die kleine Politik: Konturen einer politischen Ästhetik des neueren Zombiefilms.' *Zeitschrift für Fantastikforschung* 2.1 (2012): 76–97.
- Rogers, Martin. 'Hybridity and Post-Human Anxiety in *28 Days Later*.' McIntosh and Leverette 119–33.
- Romney, Jonathan. '*Splice*, Vincenzo Natali, 104 Mins (15)'. *The Independent*. July 25, 2010. Web. Accessed August 10, 2011. <<http://www.independent.co.uk/arts-entertainment/films/reviews/splice-vincenzo-natali-104-mins-15-2034657.html>>.
- Round, Julia. 'Naturalizing the Fantastic: Comics Archetypes.' Simmons 51–65.
- Roy, Arundhati. 'The Algebra of Infinite Justice.' *The Guardian*. September 29, 2001. Web. Accessed October 28, 2013. <<http://www.theguardian.com/world/2001/sep/29/september11.afghanistan>>.
- Rozelle, Lee. 'Liminal Ecologies in Margaret Atwood's *Oryx and Crake*.' *Canadian Literature* 206 (2010): 61–72.
- Ryan, Marie-Laure. *Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media*. Baltimore: Johns Hopkins UP, 2001.
- Salen, Katie, and Eric Zimmerman. *Rules of Play: Game Design Fundamentals*. Electronic book. Cambridge: MIT Press, 2004.

- Sargent, Lyman Tower. 'The Three Faces of Utopianism Revisited.' *Utopian Studies: Journal of the Society for Utopian Studies* 5.1 (1994): 1–37.
- Schaer, Roland, Gregory Claeys, and Lyman Tower Sargent, eds. *Utopia: The Search for the Ideal Society in the Western World*. New York: New York Public Library, 2000.
- Schmeink, Lars. 'Dystopia, Alternate History and the Posthuman in *Bioshock*.' *COPAS: Current Objectives of Postgraduate American Studies* 10 (2009). Web. Accessed March 13, 2014. <http://www-copas.uni-regensburg.de/articles/issue_10/10_05_text_schmeink.php>.
- . 'Frankenstein's Offspring: Practicing Science and Parenthood in Natali's *Splice*.' *Science Fiction Film & Television* 8.3 (2015): 343–69.
- . 'Mythos und "Madness": Der Wissenschaftler in Shelleys *Frankenstein* und Atwoods *Oryx and Crake*.' *Wahnsinn in der Kunst: Kulturelle Imaginationen vom Mittelalter bis zum 21. Jahrhundert*. Ed. Susanne Rohr and Lars Schmeink. Trier: WVT, 2011. 225–50.
- Schopp, Andrew, and Matthew B. Hill, eds. *The War on Terror and American Popular Culture: September 11 and Beyond*. Madison: Fairleigh Dickinson UP, 2009.
- Schulzke, Marcus. 'Moral Decision Making in *Fallout*.' *Game Studies – The International Journal of Computer Game Research* 9.2 (2009): n. pag.
- Shaviro, Steven. *The Cinematic Body*. Minneapolis: U of Minnesota P, 1993.
- Shelley, Mary. *Frankenstein; or The Modern Prometheus*. Premier Classics. New York: Knopf, 2006.
- Short, Sue. *Cult Telefantasy Series: A Critical Analysis of The Prisoner, Twin Peaks, The X-Files, Buffy the Vampire Slayer, Lost, Heroes, Doctor Who and Star Trek*. Jefferson: McFarland, 2011.
- Sicart, Miguel. *The Ethics of Computer Games*. Cambridge: MIT Press, 2009.
- Silver, Lee M. *Remaking Eden: Cloning and Beyond in a Brave New World*. New York: Avon, 1997.
- Simmons, David, ed. *Investigating Heroes: Essays on Truth, Justice and Quality TV*. Jefferson: McFarland, 2012.
- Sinclair, Brendan. 'Q&A: Diving Deeper into BioShock's Story.' *Gamespot.com*. September 20, 2007. Web. Accessed March 16, 2014. <<http://www.gamespot.com/pc/action/bioshock/news.html?sid=6179423>>.
- Slonczewski, Joan, and Michael Levy. 'Science Fiction and the Life Sciences.' *The Cambridge Companion to Science Fiction*. Ed. Edward James and Farah Mendlesohn. Cambridge: Cambridge UP, 2003. 174–85.
- Sloterdijk, Peter. *Regeln für den Menschenpark*. Frankfurt/M.: Suhrkamp, 1999.
- Smith, Marquard, and Joanne Morra, eds. *The Prosthetic Impulse: From a Posthuman Present to a Biocultural Future*. Cambridge: MIT Press, 2006.
- Sobchack, Vivian. *Screening Space: The American Science Fiction Film*. New York: Ungar, 1993.
- Solis-Gadea, Hector Raul. 'Introduction: The New Sociological Imagination: Facing the Challenges of a New Millennium.' *International Journal of Politics, Culture, and Society* 18.3/4 (2005): 113–22.

- Soper, Kate. *Humanism and Anti-Humanism*. London: Hutchinson, 1986.
- Stableford, Brian. 'Biology.' *The Encyclopedia of Science Fiction*. 2nd edition. Ed. John Clute and Peter Nicholls. New York: St. Martin's, 1993. 122–24.
- Stalder, Felix. *Manuel Castells: The Theory of the Network Society*. Cambridge: Polity, 2008.
- Steffen, Will, Paul J. Crutzen, and John R. McNeill. 'The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?' *Ambio* 36.8 (2007): 614–21.
- Steffen, Will, Jacques Grinevald, Paul Crutzen, and John McNeill. 'The Anthropocene: Conceptual and Historical Perspectives.' *Philosophical Transactions: Mathematical, Physical and Engineering Sciences* 369.1938 (2011): 842–67.
- Stephens, Patrick. 'Review of Bioshock.' *The New Individualist*. Web. Accessed March 8, 2014. <<http://www.atlassociety.org/bioshock-video-game>>.
- Sterling, Bruce. 'Preface.' *Mirrorshades: The Cyberpunk Anthology*. New York: Ace, 1986. ix–xvi.
- . *Schismatrix Plus*. New York: Ace, 1996.
- . 'Slipstream.' *SF Eye* 5 (1989). Web. Accessed November 10, 2013. <http://w2.eff.org/Misc/Publications/Bruce_Sterling/Catscan_columns/catscan.05>.
- Stevens, Jaqueline. 'Biotech Patronage and the Making of Homo DNA.' *Tactical Biopolitics: Art, Activism, and Technoscience*. Ed. Beatriz Da Costa, Kavita Philip, and Joseph Dumit. Cambridge: MIT Press, 2008. 43–61.
- Stiegler, Bernard. *Technics and Time: The Fault of Epimetheus*. 1994. Trans. Richard Beardsworth and George Collins. Stanford: Stanford UP, 1998.
- Storey, Françoise, and Jeff Storey. 'History and Allegory in Margaret Atwood's *Oryx and Crake*.' *Cynos* 22.2 (2005): 129–38.
- Stratton, Jon. 'Zombie Trouble: Zombie Texts, Bare Life and Displaced People.' *European Journal of Cultural Studies* 14.3 (2011): 265–81.
- Strickland, Ben. 'Growing Pains: *Heroes* and the Quest for Identity.' Porter, Lavery, and Robson 85–103.
- Sullivan, Heather. 'Dirt Theory and Material Ecocriticism.' *Interdisciplinary Studies in Literature and Environment* 19.3 (2012): 515–31.
- Sundaram, Neeraja. 'Imagining Bio-Disaster, Reproducing Social Order: Epidemics in Contemporary Hollywood.' *Journal of Creative Communications* 7.1/2 (2012): 135–51.
- Sutherland, Meghan. 'Rigor / Mortis: The Industrial Life of Style in American Zombie Cinema.' *Framework: The Journal of Cinema and Media* 48.1 (2007): 64–78.
- Suvín, Darko. 'On Gibson and Cyberpunk SF.' *Foundation: The Review of Science Fiction* 46 (1989): 40–51.
- Tait, Colin. '(Zombie) Revolution at the Gates: *The Dead*, the "Multitude" and George A. Romero.' *Cinephile* 3.1 (2007): 61–70.
- Takacs, Stacy. *Terrorism TV: Popular Entertainment in Post-9/11 America*. Lawrence: University Press of Kansas, 2012.
- Tavinor, Grant. 'Bioshock and the Art of Rapture.' *Philosophy and Literature* 33.1 (2009): 91–106.

- Taylor, Nik. *Humans, Animals and Society: An Introduction to Human-Animal Studies*. Brooklyn: Lantern, 2013.
- Teachout, Terry. 'The Old Girl, Still Kickin': *Atlas Shrugged*, Ayn Rand's Massive Ideological Novel, Turns 50.' *National Review* 59.21 (2007): 46.
- Tester, Keith. *The Social Thought of Zygmunt Bauman*. New York: Palgrave, 2004.
- Tickell, Crispin. 'Societal Responses to the Anthropocene.' *Philosophical Transactions: Mathematical, Physical and Engineering Sciences* 369.1938 (2011): 926–32.
- Toffoletti, Kim. *Cyborgs and Barbie Dolls: Feminism, Popular Culture and the Posthuman Body*. London: I.B. Tauris, 2007.
- 'The Transhumanist Declaration.' *Humanity+*. 1998. Web. Accessed January 3, 2016. <<http://humanityplus.org/philosophy/transhumanist-declaration/>>.
- Tulloch, Rowan. "'A Man Chooses, a Slave Obeys": Agency, Interactivity and Freedom in Video Gaming.' *Journal of Gaming and Virtual Worlds* 2.1 (2010): 27–38.
- Vanden Bossche, Andrew. 'Analysis: Would You Kindly? Bioshock and Free Will.' *Gamasutra*. August 18, 2009. Web. Accessed March 8, 2014. <http://www.gamasutra.com/php-bin/news_index.php?story=24822>.
- Venter, Craig J. 'DNA, Writing the Software of Life.' *Edge Foundation*. 2009. Web. Accessed February 8, 2014. <http://www.edge.org/q2009/q09_12.html#venter>.
- Vieira, Fátima. 'The Concept of Utopia.' Claeys, *Companion* 3–27.
- Vint, Sherryl. 'Abject Posthumanism: Neoliberalism, Biopolitics and Zombies.' Levina and Bui 133–46.
- . *Bodies of Tomorrow: Technology, Subjectivity, Science Fiction*. Toronto: U of Toronto P, 2007.
- . 'Introduction: Science Fiction and Biopolitics.' *Science Fiction Film and Television* 4.2 (2011): 161–72.
- Vorda, Allan. 'An Interview with Paolo Bacigalupi.' *New York Review of Science Fiction* 23.6 (270) (2011): 16–19.
- Warkentin, Traci. 'Dis/Integrating Animals: Ethical Dimensions of the Genetic Engineering of Animals for Human Consumption.' *AI & Society* 20.1 (2006): 82–102.
- Wegner, Philip. *Life Between Two Deaths, 1989–2001: U.S. Culture in the Long Nineties*. Durham: Duke UP, 2009.
- Weinstock, Jeffrey, ed. *The Ashgate Encyclopedia of Literary and Cinematic Monsters*. Farnham: Ashgate, 2014.
- Weiss, Allen S. 'Ten Theses on Monsters and Monstrosity.' *The Drama Review* 48.1 (2004): 124–25.
- Wilson, Sharon. 'Margaret Atwood and the Fairy Tale: Postmodern Revisioning in Recent Texts.' *Contemporary Fiction and the Fairy Tale*. Ed. Stephen Benson. Detroit: Wayne State UP, 2008. 98–119.
- Wohlsen, Marcus. *Biopunk: DIY Scientists Hack the Software of Life*. New York: Current, 2011.
- Wolfe, Cary C. *Animal Rites: American Culture, the Discourse of Species, and Posthumanist Theory*. Chicago: U of Chicago P, 2003.

- . 'Human, All Too Human: "Animal Studies" and the Humanities.' *PMLA: Publications of the Modern Language Association of America* 124.2 (2009): 564–75.
- . *What Is Posthumanism?* Minneapolis: U of Minnesota P, 2010.
- Wood, Robin. *Hollywood from Vietnam to Reagan ... and Beyond*. New York: Columbia UP, 2003.
- World War Z*. Dir. Marc Forster. Paramount, 2013.
- X-Men: The Last Stand*. *X-Men Trilogy*. 2006. DVD. Twentieth Century Fox, 2009.
- Zani, Steven, and Kevin Meaux. 'Lucio Fulci and the Decaying Definition of Zombie Narratives.' *Christie and Lauro* 98–115.
- Zechner, Anke. 'Willenloses Ewiges Leben: Der Zombie als Figur des Exzesses und der Ausgrenzung.' Fürst, Krautkrämer, and Wiemer 195–210.
- Žižek, Slavoj. *Living in the End Times*. London: Verso, 2010.
- . *Welcome to the Desert of the Real! Five Essays on September 11 and Related Dates*. London: Verso, 2002.
- Zurr, Ionat, and Oron Catts. 'Big Pigs, Small Wings: On Genohype and Artistic Autonomy.' *Culture Machine* 7 (2005): n. pag. Web. Accessed June 20, 2014. <<http://www.culturemachine.net/index.php/cm/article/viewArticle/30/37>>.
- . 'The Ethics of Experiential Engagement with the Manipulation of Life.' *Tactical Biopolitics: Art, Activism, and Technoscience*. Ed. Beatriz Da Costa, Kavita Philip, and Joseph Dumit. Cambridge: MIT Press, 2008. 125–42.

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