Posthumanism: A Critical History.

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Introduction: The Biopolitics of Posthumanism

This chapter provides an historical context for the subsequent conceptual and ethical chapters on posthumanism. It begins by considering that a meaningful discussion about the history of posthumanism first requires distinguishing the concept from a range of related concepts with which its history is intertwined. Thus, one must first recognise that an historical analysis of posthumanism is *not* synonymous with the history of medical enhancements. Indeed, claims pertaining to posthumanism are not even wholly consistent with or connected to discussions about enhancements at all. To this extent, there is no precise posthumanist claim that can be made about the *value* of medical enhancements, though the philosophical work of posthumanism does raise questions about the legitimacy of limiting medical interventions to merely therapeutic applications. By extension, the history of posthumanism is neither synonymous with the history of technology, nor is it found exclusively within philosophical inquiries into technology. Certainly, *technological change* has become a core component of contemporary imaginations about posthumanity. However, I will argue that imaginations about how humanity is transformed by technology are specific, historically contingent manifestations of posthuman ideas. Moreover, these ideas are more deeply rooted in claims about such concepts as becoming, alterity, transgressions of boundaries and the position of humanity in relation to these concepts.

From this interpretation of posthumanism, one can more fully appreciate its growing prominence as a supportive frame for discussions about medical enhancements and, more generally, its appeal as a concept through which a number of contemporary ideas about ethics can be framed. For instance, posthumanism is consistent with perspectives in animal ethics that seek to diminish the meaning and value of claims that species boundaries should have any bearing on our moral commitment to other life forms. This broad understanding also offers insights into how contemporary visions of posthumanism are informed by conversations on cyborgs or automata, which have often involved a reflective stance on humanity's distinct and special place in the world. In this fashion, a crucial premise of posthumanism is its critical stance towards the prominence afforded to humanity in the natural order. In this sense, the 'post' of posthumanism need not imply the absence of humanity or moving beyond it in some biological or evolutionary manner. Rather, the starting point should be an attempt to understand what has been omitted from an anthropocentric worldview, which includes coming to terms with how the Enlightenment centring of humanity has been revealed as inadequate.

Within this essay, I investigate how the concept of posthumanism has been developed, assumed, implied and appropriated in a range of (contemporary) philosophical and cultural contexts. In so doing, I endeavour to do justice to the various analytic and continental traditions that have defined and theorised posthumanism. Specifically, by focusing initially on its recent theorisation, I consider how the history of posthumanism is different from other histories on human nature.[1] I also call into question the meaning of its current revitalisation within philosophy. Of particular importance is how one might

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[1] For additional reading on human nature specifically, see Bailie and Casey (2005).

read the history of philosophy from the perspective of posthumanism and how such an interpretation should inform the specificity of current debates about this term, particularly within bioethics. In so doing, I suggest that the history of posthumanism is partially a history of disagreements about the value of human (medical) metamorphoses, but also an inquiry into the social conditions within which the need for *justifying* self-modification (through technology) has become a necessary and crucial characteristic of contemporary socio-political processes.

Fukuyama's Non-Posthuman Future

First, I begin with an account of various attempts to characterise posthumanism, most notably by Fukuyama (2002). Fukuyama has shaped the concept's recent historical development and might even be attributed the burden of having embedded the concept into common parlance. From his contributions, it will be possible to ask deeper questions about the origin of these ideas. Crucially, his postulations of posthumanity leave a number of critical questions unanswered about what should be meant or implied when invoking this concept. On Fukuyama's view, posthumanists appear to be interested in replacing humans with a new kind of species, though I have suggested – and will go on to argue – this is not at all apparent when one examines the concept in depth. Nevertheless, these posthuman imaginations have manufactured (or have become constitutive of) a fictional history for posthumanism, which has been made meaningful by its repeated presence in media and political discourses. Second, I examine how the concept of posthumanism has been constructed within a range of cultural and critical theories. This analysis lends support to the claim that posthumanity implies something more nuanced than merely moving beyond the human subject. These recent political and cultural stories of posthumanism are subsequently informed by considering the broader history of philosophical ideas that surround posthumanism; the third section of this essay. Here, I consider how visions of posthumanity are evident in a number of literary and philosophical texts, which are also underpinned by unambiguous moral narratives that warn about the transgressing of biological boundaries.

Perhaps the most well-known theorist to have contributed to the rhetoric on posthumanity is Francis Fukuyama whose invocation of posthumanism within his *Our Posthuman Future* (2002) conflates the distinction between transhumanism and posthumanism, as a disguise for a, more specific, interest in emerging cultures of enhancement technology. Yet, the difference between these concepts is crucial, as I will argue. Fukuyama (2002) was published alongside Greg Stock's *Redesigning Humans* (2002), at a time when Fukuyama was a member of the United States President's Council on Bioethics, itself concerned considerably with the prospects of human enhancement (US President's Council on Bioethics, 2003). During this year, the two authors undertook a combative lecture tour, which embodied *the consequences* of posthuman imaginations: the polarisation of the *bioconservative* (Fukuyama) and *technoprogressive* (Stock) perspectives. Fukuyama's analysis of a future where human biotechnological enhancement is rife invokes the concept of posthumanism to frame and define this future. However, the concept of posthumanism is advanced as a negative case: it is the absence of humanism, the transgression of crucial moral boundaries and synonymous with a lack of humanism. From Fukuyama's arguments, one is led to infer that his conceived essence

of humanity – what he calls *Factor X* – is compromised by a permissive, commercial environment within which he envisages medical enhancements would necessarily emerge.

Yet, rather than theorise posthumanism, Fukuyama uses the concept to warn about a future where the ethical distinction between therapy and enhancement has been eroded. Moreover, in his view, there are insurmountable challenges associated with the prospect of becoming posthuman, in part, because this becoming is inextricable from the inevitable commercialisation of life that it will imply. Thus, Fukuyama's posthumanism is an observation from the perspective of political science rather than moral philosophy. It arises out of a concern for political process in a world where, as he envisages, the moral force of human rights becomes diluted by the claims of chimeric, cybernetic or transgenic species, or over disputes about the ownership of DNA. Fukuyama's analysis conflates the language of politics and ethics in a way that often appears as moralising on the subject.[4] Nevertheless, the result of these mixed languages is interesting, since it reveals the relatedness of these differing endeavours: how concepts that arise as theoretical investigations within philosophy are then instrumentalised by the requirements of policy making. Yet, at no point does Fukuyama advance our understanding of posthumanism, since he does not attempt to explain the legitimacy or meaning of his choice to use this term.

Fukuyama's (2002) apocalyptic tone – which began as a re-working of his *End of History* argument – is later reinforced by his article in *Foreign Policy* (2004), where he announces that transhumanism is the 'world's most dangerous idea'. This intervention accentuates the rich confusion over how the concepts of post- and trans- humanism differ, which reinforces my claim that Fukuyama is actually interested in *neither* of them. Rather, he is concerned about medical *enhancements* generally and, specifically, the politics of those (groups) who would argue on their behalf. It is evident that he considers the ethics of biotechnology as inextricable from the broader political economy of scientific research. Indeed, Fukuyama is concerned that a commercial model of biotechnology will overwhelm an ethics based on humanitarian concerns and that this will, in turn, corrupt his *Factor X*, ushering in a posthuman future:

> Human nature shapes and constrains the possible kinds of political regimes, so a technology powerful enough to reshape what we are will have possibly malign consequences for liberal democracy and the nature of politics itself (2002: 7).

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[4] Of course, to separate politics from ethics is a rather misleading exercise, though one must distinguish between ethical debate and its politicisation as a form of discourse. Indeed, I will go on to suggest that the history of posthumanism is characterised by a form of political engagement that is nicely reflected in Nietzsche's work on the *Übermensch*.

For Fukuyama, this prospect of biopolitical transcendence is alarming – and relevant to his more established expertise – because it signals the destabilisation of established political boundaries and processes. Thus, Fukuyama's thesis on posthumanism begins with an analysis of political history and a projection of its future within a permissive, biotechnological world. Further evidence of this is found manifest in Fukuyama and Furger (2007), which begins by drawing attention the political context of the subject where the aforementioned polarisation of moral perspectives has shaped the political terms by which the debate about a posthuman future has developed. The authors note that: 'there are several deeply held alternative views on this issue, over which it is not likely that there will be consensus any time in the near future' (p.45) and their provocative title *Beyond Bioethics*, is further evidence of the perceived limits of ethics within this debate about the future.

In sum, Fukuyama (2002) argues that a fixed, if inarticulate, conceptualisation of the human is crucial to the organisation of society. Yet, his argument is only ever a thesis on the commercial character of emerging biotechnology, rather than the morality of posthumanism (as human enhancement). At most, it re-asserts the fundamental values of humanism, rather than establish why it is that this prospect should be considered a posthumanism future. Characterising posthumanism as the absence of *Factor X* will simply not suffice. Thus, for Fukuyama, the concept of posthumanism is invoked and imagined rather than characterised by his analysis. His use of the word posthumanism is expected to do the work of establishing what is immoral about human enhancement.

Posthumanism as Technological Culture

Other recent posthuman thinkers utilise the concept to characterise a burgeoning technological culture, but in doing so fail to adequately distinguish posthumanism from other concepts. For example, Pepperell (1995/2003) discusses posthumanism as a form of *anti*-humanism, which is re-enlightened by modern science. On his view, posthumanism is characterised by the absence of humanist naïveté:

> Humans have imagined for a long time that the ability to develop and control technology was one of the defining characteristics of our condition, something that assured us of our superiority over other animals and our unique status in the world. Ironically, this sense of superiority and uniqueness is being challenged by the very technologies we are now seeking to create, and it seems the balance of dominance between human and machine is slowly shifting (p.3).

Yet, this plausible notion of posthumanism as 'the end of…that long-held belief in the infallibility of human power and the arrogant belief in our superiority and uniqueness' (p.171) is later diminished when Pepperell (2005) appears comfortable to discuss posthumanism as if it were a temporal, progressive concept – ie. humanity moves from transhumanism to posthumanism – and largely about using technology to achieve even greater productivity or functionality. This move towards something more like transhumanism betrays the particular history of posthumanism.

These two examples of how posthumanism has been positioned within the literature and the public gaze are indicative of the multiple meanings and expectations that are inscribed onto the concept. Fukuyama (2002) uses posthumanism to constitute what people should consider as the immorality of human enhancement. He achieves this by invoking the idea that the posthuman future will imply the redundancy of humanity. In contrast, Pepperell invites a view of posthumanism that involves embracing human enhancement albeit in a way that rejects traditional technological determinism. Other recent visions of posthumanity – such as Stock (2002) – can more easily be characterised as transhuman and much of what I argue here claims that there is both common and distinct ground between these concepts. Crucially, the history of posthumanism should *not* be seen as the same as the history of transhumanism (Bostrom, 2005) and the reason for this is revealed when examining their conceptual trajectory within the literature, as I undertake in this essay. While one might identify that their common emphasis on technology is indicative of their sameness, theorists from each tradition have made quite different value claims associated with the relationship between technology and humanity. Moreover, authors from each tradition arrive at a concern over medical ethics from quite different points of origin. To elaborate further on this, the next section of this chapter examines other visions of posthumanism, which have emerged within critical theory and cultural studies, rather than philosophy or bioethics. Indeed, the literature that has appeared to speak more explicitly to theorising posthumanism has come from studies in English literature, cultural studies, and communications.

Posthumanism in Cultural Theory

Posthuman Bodies

The origins of what might be termed a *cultural posthumanism* are revealed within Halberstam & Livingstone's *Posthuman Bodies* (1995). In this text, one foresees the integration of various cultural studies' discourses within a posthuman movement. The various essays of this book look to a range of cultural texts such as film to advance an understanding of posthumanism.[7] Halberstam and Livingstone (1995) outline that their objective is to address challenges to 'the coherence of the human body'. Moreover, the posthuman discussed within the book refers not to 'some subsequent development state' to humanity, but its 'collapses into *sub-, inter-, trans-, pre-, anti-*' (p.viii). In their view 'posthuman bodies are the causes and effects of postmodern relations of power and pleasure, virtuality and reality, sex and its consequences' (p.3). Moreover, they emphasise that,

> The posthuman does not necessitate the obsolescence of the human; it does not represent an evolution or devolution of the human. Rather it participates in re-distributions of difference and identity (p.10).

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[7] Consider, for example, the genre of 'Body Horror,' which describes the integrity of human subject corrupted and its boundaries breached (Clarke, 2002).

Their approach to posthumanism provides some explanation for why it is necessary to tell the combined histories of philosophical and cultural posthumanism, in order to offer a comprehensive analysis of its past. For, it would appear that there are quite different expectations and imaginations about this imminent condition.

Neil Badmington (2000, 2001, 2003) has also pioneered cultural posthumanism. His work inquires first, into whether posthumanism is antagonistic towards theory and second, argues that it is actually a critical 'working-through of humanist discourses' (2003, p.22). His view bears close resemblance to Elaine Graham's (2002a) posthumanism, which draws on narratives from within literature to study Otherness as it is manifested within culture. Graham's posthumanism is constituted by the 'interplay between the world of scientific, bioethical theorizing and the world of the cultural imagination – myth science fiction, popular culture and religion' (Graham, 2002b, no page). Graham discusses various 'representations' of the post/human, considering aliens, monsters and the Other to wonder how influential these images will become as frames for constituting moral discourses about scientific and technological change. For example, it is widely recognised that the range of metaphors that have been used to describe the technology has limited the progress of research into human genetics. Thus, its public depiction as the 'holy grail' of science allowing humanity to 'Play God' and discover the 'book of life' in a way that is alleged to correspond with Mary Shelley's (1818) representation of 'Dr Frankenstein' all seem to have had a pejorative effect on the development of genetics. Indeed, John Turney argues that the reference to Frankenstein in particular is an unavoidable characteristic of public discourses on science, so entrenched is this narrative. Yet, he also notes that 'Frankenstein, simply, tends to polarise a debate which we urgently need to take forward to a point where other answers, more complex than yes or no, are possible. (1998, p.220). I would argue that posthumanism offers such a discourse, but that, in order for it to be effective, it is necessary to disentangle its philosophical and cultural history.

Cyborg Rights & Wrongs

One of the most celebrated cultural posthumanists is N. Katherine Hayles. Her defining text for this area of inquiry, 'How We Became Posthuman' (1999), discusses the implications of translating bodies into information, a project which occurs at a time when such authors as Hans Moravec discuss the prospects of brain downloads onto computers. Hayles' posthumanism draws from Hassan (1977) who invites the suggestion – rather like Foucault – that the era of Man[8] is approaching some form of end (invariably ideological, biological, or both). Hayles explains how the body's boundaries have been compromised and that our current era is characterised by a desire to erase bodily burdens or, more accurately, to transform the body into information, non-matter. This perspective

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[8] The word 'sic' is not appropriate here, since the implication is both of a gendered claim and a claim about humanity generally.

[12] Turner's (2003) response to the US President's Council on Bioethics is some indication of this discontent with discussions about posthuman futures. Turner argues that such ethical analyses are far beyond what should be a more immediate priority for such a Committee – such as the widespread provision of health care to those who cannot afford it.

draws attention to movements and the development of legal instruments during the latter part of the twentieth century for disability, ethnicity and gender rights, to indicate how narrow definitions of what it means to be human have lost credibility. Thus, where in the past certain modes of being were treated as 'invalid', today, these variations are celebrated. For Hayles, posthumanism is characterised by a (desired) loss of subjectivity that is based on bodies losing their boundaries. To this extent, the origins of Hayles' posthumanism are also visible in Donna Haraway's biopolitics. Haraway's work in fashioning the contemporary use of the term *cyborg* is a crucial component of how posthumanism has developed in the last twenty years. Haraway's cyborg must be read, first, as a feminist project located in a desire to reconstitute the identity politics, particularly as it concerns assumptions about gender norms. Yet, a second reading also involves understanding how her ideas have become central tenets for some posthumanist scholars, as it advances the notion of a post-gender world where being a cyborg is preferable to being a goddess.

While there is little doubt that Haraway's work has been influential in recent expectations of posthumanism, there are numerous reasons to believe that this presents an ambiguous fortune for Haraway. Indeed, Haraway expresses considerable concern that her ideas have been appropriated by a particular vein of posthumanism that expresses biological transgressions as a utopian break with evolution. In a 2006 interview for *Theory, Culture and Society* (Gane & Haraway, 2006), Haraway expresses her disdain for the future-talk of such authors as Hans Moravec whose work embodies a notion of posthumanism that is located in the prospect of radical futures rather than socio-cultural reform. For Haraway, this interpretation of posthumanism is antithetical to the work she had intended for her post-gender, cyborgian world – she is more interested to understand 'how we became posthumanist' (Haraway, in Haraway & Gane, 2006, p.140) rather than 'posthuman'. Moreover, her response has been to challenge this particular form of posthumanism by extending her cyborg work to the broader notion of 'companion species' (Haraway, 2003). This concept similarly interrogates the human, but it differs in terms of the expectations it provokes. Here, Haraway considers how humans live among other, non-human entities, by discussing how pets have become companion species.

In sum, one must consider that Haraway's claims about cyborgs were *not* based on an interest to enhance humanity, but intended to disrupt uniform ideas about what it means to be human and the social and political entitlements this might imply. In this sense, cultural posthumanists are considerably different from philosophical posthumanists. Haraway, Hayles and Pepperell each emphasise the dis-integration of the liberal humanist subject as the core characteristic of posthumanism. Moreover, they all suggest that this change in subjectivity leads humanity towards a situation where it treats seriously claims about the moral status of artificial life.

From Culture to Philosophy

Interpreting cultural posthumanism in this way offers a much broader connection with philosophical work than might otherwise be presumed. For example, the claims about recognising the moral status of artificial lives finds close connections with other non-posthumanist philosophical ideas, such as Rorty's (1989) and Singer's (1981) discussions

about the *expanding circle* of our moral concern moving beyond merely human or biological life. This move towards a non-biologic sense of moral right is also a critical part of the history of posthumanism, but it is crucial to note that it first emerges outside of applied ethical discussions about medical (or simply biological) enhancements (or modifications) of humanity. Indeed, when such proposals have reached the domain of medical ethics, they have provoked sceptical and cynical comments from scholars who consider that such prospects are far beyond the present-day challenges of medicine, which are to alleviate human, suffering.[12]

Admittedly, a great deal of what these authors suggest has nearly no immediate bearing on the ethics of medicine. However, the idea of a non-biologic moral significance has assisted to diminish the, now outmoded, imaginations of the 'hard cyborg' in favour of conceptualising the 'soft' cyborg (Zylinska, 2005). Today, the metaphor of biology as a guiding criterion for conceptualising *any* potentially, radical evolutionary leap, has replaced previous ideas that located in the construction of autonomous machines. Thus, it is more likely that radical transformations will emerge through engineering biology from inside or from the bottom-up, rather than through any independent cybernetic or machinic interface. As Ansell Pearson (1997) notes, 'the machine is construed as a deficient form of life' (p.5), which limits its capacity to mirror nature's complexity.

Nevertheless, removing the body from subjectivity gives way to futuristic ideas about the legitimacy of such prospects as downloading brains and imagining a world where the moral concern of humanity extends to automata. Indeed, Hayles even draws on notable cyber-theorists (and transhumanists) such as Marvin Minsky (1985), Hans Moravec (1988) and even Alan Turing (1950) to develop her thesis. These theoretical manoeuvres help to explain how the philosophical and cultural are interwoven within the history of posthumanism. For while philosophers have rejoiced at the prospect of understanding what it *doesn't* mean to be human by seeking to simulate it, cultural critics have often drawn attention to how literature has shaped our evaluation of this aspiration. A helpful example can be found in the legacy of Alan Turing's 'Imitation Game', which proposes a test to establish when we might conclude that machines should be treated as thinking beings. The game involves three participants. In its original form, an interrogator is in a separate room from a man and a woman and must converse with them via a text-based computer interface, aspiring to determine which is the man and which is the woman. Turing extends this premise by asking what it would mean if either the man or the woman is replaced by a computer. He suggests that, if the interrogator cannot distinguish – with any significant difference of success– between the computer imitator and the man/woman, then this would be sufficient to conclude that the machine is thinking. While Turing made no further advance on whether this implies a moral obligation towards such a machine, intimations of this are prevalent within a range of science fiction stories. Moreover, these implications have been given currency in a range of documentary forms. For instance, the now infamous chess contest in 1997 between World Grand Master Garry Kasparov and IBM's Deep Blue computer was immortalised in the documentary *Game Over* (2003). During this movie (and contest) – where the human lost to the machine – one is confronted with the demise of the human and the tragedy that this implies. This is embodied in the moment where, at the close of the

contest, the IBM team and Kasparov enter the stage where the tournament was set and the crowd expresses its disapproval of the result by failing to celebrate the IBM programmers.

From Hubris to Humility

In so far as these philosophers are concerned about the importance of *information*, there is slippage between developments in the philosophy of artificial intelligence and its cultural manifestations, both in terms of how one might theorise the distinction between nature and nurture and how we operationalise the political position of humanity.[13] Yet, their common ground emerges more from recent approaches to artificial intelligence, which draws on the kind of biological metaphors that I have suggested as characteristic of the shift from cybernetic to symbiotic. Thus, artificial life has drawn on principles that seem consistent with the posthumanist non-anthropocentric stance, rather than AI's top-down modelling of human intelligence. This claim is important in the history of posthumanism, as it signals a major conceptual shift from a view that aims to use technology in order to control nature, to one where the use of the very same technology involves no such claim. Indeed, I would suggest that the crucial challenge facing the acceptance of enhancement technologies is in convincing detractors that they constitute something ideologically different from the Enlightenment conviction that technological development constitutes progress; that enhancement research and practices involve a move from hubris to humility at the wondrous complexity of technology.[15] A good example of this shift is offered through trends in environmental ethics, where one might invite technological solutions to global environmental problems that are more commensurate with existing natural processes, rather than merely taking advantage of them for human benefits.

These links with philosophical posthumanism offer a useful point at which to conclude the historical development of cultural posthumanism. However, it is by no means exhaustive of the range of posthumanisms that constitute recent attempts to think through the cultural connotations of this term. For instance, in 2002, the journal Configurations published an entire volume on the term, which was shortly followed in 2003, by another full volume in the journal *Cultural Critique*. Here, the authors immediate context is the cyborgology of Chris Gray (2002), Donna Haraway (1985) and, by then, an emerging number of artists whose work engaged matters of the body, such as Australian performance artist Stelarc (Smith, 2005) or the French performance artist Orlan (O'Bryan, 2005) each of whom have undergone surgical interventions for their work.

This pre-history to the recent versions of cultural posthumanism is, again, crucial in explaining the polarised views on the morality of enhancements. Among these various accounts of posthumanism, one is drawn to conclude that – unlike transhumanism – posthumanism makes no specific claim made about the *ethics* of emerging technologies. Unlike transhumanists, cultural posthumanists have observed and developed theories of

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[13] A useful example here is Vikram Jayanti's (2003) documentary about Garry Kasparov's chess challenge with IBM's Deep Blue.

[15] My phraseology does involve an ironic allusion to similar claims that are often made about nature.

change and have positioned technology in relation to this change. In short, human subjectivity and embodiment have become the focal point for these analyses of change. However, there is a latent ethical stance that is often present within these analyses that might be characterised as a general concern that emergent technologies further frustrate the achievement of social justice, which is perhaps the common ground between culture and philosophy.

Thus far, I have located the history of posthumanism within a series of political and cultural shifts. From these offerings, it is now useful to examine their philosophical underpinning. As was mentioned earlier, Fukuyama's reliance on the instrumentalisation of such phrases as human dignity indicates the philosophical challenge from posthumanism: whether society can accommodate an expanding circle of moral concern to include the value of medical enhancements. The next section moves from these recent thinkers to further historical analyses of philosophical thought on posthumanism.

Philosophical Posthumanism

The emerging and varied perspectives on cyborgism (Haraway, 1985; Gray, 1997, 2002), posthumanism (Hayles 1999; Fukuyama 2002) and transhumanism (Bostrom, 1998) seek to critique humanism as a guiding normative framework, though they go about this in different ways. Each of them resonates with a 21st century fetish for imagining the consequences of technological advancement, which stems from a 19th and 20th century post-Enlightenment scepticism over claims that technological development constitutes progress. For example, Hayles' (1999) disembodiment through cybernetics reveals a lack of fixity to humanness that also diminishes the value of stable biological distinctions, such as species categories. Alternatively, Gray (1997) articulates a 'cyborg bill of rights' to argue on behalf of broadening our narrow conception of humanness. Yet, these analyses are also inextricable from other cultural critiques, such as that of Furedi (2005a, 2005b) and Beck (1992, 1999).[16] Indeed, Furedi (2006) contextualises his culture and politics of fear within an attempt to reconstitute the values of humanism. He notes that,

> Instead of celebrating man's attempt to transform nature, history and civilisation have been recast as a story of environmental destruction. From this standpoint the application of reason, knowledge and science are dismissed as problems because they help intensify the destructive capacity of the human species. 'Humans are, literally, a species out of control', notes a misanthropic contribution. From this perspective humanism itself is the problem.

To this extent, Furedi's perspective can be construed as posthuman, as his thesis on the politics of fear is implied by the various discourses on the dangers of biological modification. Moreover, his *Therapy Culture* (2004) offers specific connections to Fukuyama's analysis via its analysis of lifestyle medical care and the more general interest in personhood and vulnerability that concerns the main stay of bioethics.

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[16] Beck's risk society is bound up with scientific and technological innovation.

Locating the Human

Often, stories about the transformation of biology and the rise of machines are imbued with narratives of fear and uncertainty, which reveal a sense of human insecurity arising from sharing the world with the living machine, or the cyborg. Such alien beings are frequently represented as a threat to humanity, calling into question their identity and powers of domination. Literary examples abound on this topic, including Hans Christian Anderson's fairytale story, *The Nightingale* (1844), Mary Shelley's (1818) *Frankenstein*, and more recently, Isaac Asimov's robot stories. Within each of these examples is a recurring narrative about how the new being creates a problem for the humans around it. Anderson's *Nightingale* tells the story of a mechanical nightingale that charms a Chinese Emperor far more than his *real* nightingale, even though the real bird had been a companion to the Emperor for many years. The mechanical bird's greater beauty and more pleasant song results in the real nightingale being banished and fleeing from the Emperor's side. A year later, the artificial bird breaks down and cannot be repaired and the Emperor begins to die. Hearing of the news, the banished nightingale returns and the Emperor returns to good health once again. The story symbolises the conviction that it is biological life that endures, not machines, and is a part of our moral discourse on technology: being alive is good, being artificial is bad.

Other texts convey a similar narrative. In Shelley's *Frankenstein*, the monster is a human creation that is part biological and part mechanical (through its reanimation). Despite its human form, the resulting being is grotesque and alien to the human world, within which it soon becomes monstrous and violent. Importantly, the monster of Frankenstein becomes terrible only when it is rejected from human society. As such, the text reveals an ambiguity about this creation; its monstrosity is not a product of its creation, but a consequence of its lack of acceptance by other humans who fail to embrace it. On this point, Mazlish (1993: 44) argues that the story provokes the following warning about the future of the human species:

> if humans insist on their separateness and superiority in regard to machines (as well as other animals), viewing them as a threatening new "species" rather than as a part of their own creation, will they, indeed, bring about the very state of alienation that they fear.

These stories of automata, cyborgs, and robots all pose the same question: how do humans differ from non-humans, or more simply, what does it mean to be human? They also intimate at the inadequacy or interference of artifice in the reordering of nature.[17] More recent examples include Kafka's *Metamorphosis* (1948) and Atwood's *Oryx and Crake* (2005).

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[17] Moreover, to confirm the links between the cultural and philosophical, Clarke (2002) discusses these ideas in the context of *The Fly* indicating the crucial component of telephony as an anarchic intermediary of natural processes. In his analysis, the posthuman is both a non-essential claim, but also a position taken on the relationship between biology and information where 'The metamorphic spectacles unleashed by the variants of *The Fly* are posthuman transformations brought about precisely by fantastic adaptation of modern communicative technology' (p.174).

The Critique of Humanism

As I have suggested, these observations of moral concern about the extension of human control over nature must be seen in the context of the post-Enlightenment period. The Industrial revolution provoked a significant development in writing about the relationship between humans and other entities. The discourse reflects a scientific concern for automata and the Romantic revulsion against the mechanical Newtonian worldview. It illustrates the range of curiosities, embodied in scientific inquiry and legends about the creation of life from inanimate material.

During these post-Enlightenment years, one perceives the works of some profound philosophers and scientists with a far more sophisticated uncertainty about the *ends of science* than had existed before and, to reiterate, the enduring challenge of posthumanism is to wrestle with this issue. This period of 'isms' (Transcendentalism, Idealism, Existentialism, Nihilism, Realism, Pragmatism, Socialism, Communism, Liberalism) included such icons of western history as Charles Darwin, Karl Marx, and Schopenhauer. The presence of machines in every day life made the distinction between humans and non-living entities more acute, particularly during the late 19th century and early 20th Century, where machines would be far more confrontational to a worker's life than ever before and, increasingly, within the family home.

The machine became an object of human interest, a means to an end, accentuating the role of the human being as a tool user. Tools were used to extend personal power and freedom, at the same time as subjecting individuals to its impersonal organisation (Mazlish, 1993). Tools became the mediator between humanity and the environment; an artificial skin separating humans from other animals. The division of labour transformed the human into mere body parts and reduced a worker's relationship with each other to functional, economic value. From here, it was a small conceptual step towards the computer revolution (and our return to Turing and Hayles). The computer reflects the current articulation of machinic automation, extending human faculties as well as replacing humans and making them more machine-like, physically and cognitively.

Darwin's biological humanism allowed the human to be reduced to a level of mechanics, a view that pervades contemporary understandings about being human. The classification of species and the survival of the fittest hypothesis reduced the complexity of life to neat and tidy relationships. However, these barriers between animals and humans have now begun to collapse, identifying the difference between them as being one of degree, rather than of kind. Indeed, in Darwin's view, the most fundamental difference between humans and animals is that humans possess a developed sense of morality, or conscience, and religion. From here, the debate about whether humans are comprised mainly by genetic, inherited qualities, or whether humans are more socially determined – the nature versus nurture debate – begins to ensue.

The move from modern to postmodern articulations of the human condition also plays an important role in understanding humanness, as it is articulated in contemporary ethics. The underlying narratives of such classic texts as Huxley's (1932/90) *Brave New World* or George Orwell's *1984* (1940/83) recur frequently within contemporary discussions

about the genetic revolution. The ideas within these works continue to characterise technological change in terms of warning and alarm, reminding of how easily the use of technology can lead to disaster. This period of redefining the human condition as distinct from other entities is not limited to any specific technology. It encompasses biotechnologies, but also includes such innovations as artificial intelligence, life extension and genetic or nanotechological engineering. Yet, the symbiosis of the organic and machinic takes place in its most extreme form through the merging of humans with medical technology, allowing the transplantation of limbs, and the re-constructing of life, which utilises technology and biology.

It is in this vast historical context of conceptualising the human where we find arguments that challenge the idea that humanness is a fixed concept, but where also questions about humanist ideology arise. Moreover, it is these applications that have constituted the political rise of posthumanism, as a challenge to established medical ethical principles. Thus, one might characterise posthumanism as a crisis of delimiting the proper role of medicine in an era of enhancement. To this extent, it is useful to further examine how such principles came to be; to understand the foundation on which a humanistic ethics has been developed. Indeed, this inquiry alludes to some of the broader philosophical origins to posthumanism and will allow greater clarity on how bioethics is challenged by posthumanism.

Identifying our Ethical Other

Since the drafting of the Nuremberg Code after the Second World War and later the Helsinki Declaration (World Medical Association, 2000), human biological integrity has become a subject of moral protectionism through the notion of individual human rights, itself a crucial concept for Fukuyama's *Factor X*. This is not to say that what one aims to protect by the observation of human rights is a new kind of moral concern. Indeed, wherever one finds codes of ethics or morality throughout history, there is evidence of an interest to protect some form of vulnerability. Yet, insofar as this period established proper ethical limits to the conduct of medicine, it is a useful moment from which to gaze upon the challenge these codes face from posthumanism.

The ethical principles of autonomy, beneficence, non-maleficience, and justice underpin modern, western medicine and any research involving human subjects. As such, an initial attempt to define what is uniquely valuable about being human is found in discussions about *dignity* and *rights*, which in turn give rise to discussions about *humanness* and *personhood*. In the past, philosophers have attempted to define humanness by distinguishing it from other kinds of entity, such as animals, machines, automata and even God. This reveals some of the most important antecedents of the contemporary debate about posthumanim. As I mentioned earlier, distinguishing the *Other* or, as Rorty (1989) and Singer both characterise the dilemma: what should be within our circle of moral concern, is one of its central tenets.

A number of philosophical approaches of this kind are useful to mention, though I will not exhaust the entirety of philosophical history here. For example, Michel de Montaigne's (1533-92) ideas about being human arise out of a frustration for

understanding the place of humans in the natural order. Montaigne endeavours to explain humanness by contrasting the *differences between humans* and the *differences between humans and animals*. Arguing that beasts are more natural than humans and that there is a greater difference between humans and humans than between humans and animals, Montaigne claims that humans should aspire to be more like animals rather than to mark themselves of as distinct and/or superior to non-human animals.

Subsequently, Rene Descartes (1596-1650) develops a philosophical approach to understanding the human being, which rephrases the question in the context of animal intelligence. Descartes foregrounds the instinctive volitions of animals, rather than consider whether or not they possess a soul to consider how they are different from humans. By characterising animal actions as *perfect* – rather like an automaton – Descartes concludes that they, unlike humans, do not have free will or the ability to determine actions. Whereas animals are perfect, humans have the ability to *chose imperfection* and make mistakes, represented by the story of the Garden of Eden. Additionally, humans must strive for perfection through reason and, from here, Descartes concludes that the method through which humans reason is rational doubt. Again, these concepts of *choice* and *perfection* are both central points of contestation within the literature on posthumanism, though as I have also mentioned, their content is not prescribed. Thus, it would be mistaken to characterise posthuman thought as the pursuit of human perfection or the limitless valuing of personal freedom. Rather, one can depict this literature as the site where competing views on these terms is played out.[18]

Distinguishing humans from animals is not the only way that philosophers have attempted to characterise what it means to be human. Philosophers have sought to distinguish between humans and non-living entities or automata and one can observe how this way of understanding humanness contributes to discussions about new technology. Mythical and fantastical ideas about human/machine hybrids are present from stories of Icarus' wings, to Chinese, Greek, and Arabic text that are rich in the subject of automata (Mazlish 1993). Indeed, a further characteristic of posthumanism appears to be an interest in the conflation of fact and fiction, as a rich aspect of these discussions rather than a confusing influence.[19] It plays an important role within the ethical consideration of new technologies. The ability to conceptualise the abstract being, the automata, the cyborg, or the genetically engineered human, are all useful ways to approach a clearer understanding of what constitutes the human and what might be desirable circumstances for the future of human societies. Again, if one examines more contemporary debates on posthumanism, attempting to understand the role of fiction within this moral landscape is prevalent. Indeed, one might characterise a large part of the literature on the public understanding of science as indicative of this interest, where media and cultural

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[18] Again, the Fukuyama and Stock counter positions are useful examples here. It is the staging of this conflict rather than the substantive differences of opinion that I suggest is characteristic of posthumanism.
[19] Indeed, Ansell Pearson (1997) seems useful here in his characterisation of Stelarc as Lyotard's experimenter.

discourses constitute part of the moral and political terrain within which stories about nature are made and remade.[20]

The Philosophy of Technology

In offering this historical explanation, one might ask further how the history of posthumanism is distinct from the history of philosophical inquiries into technology. As far back as Aristotle, whose notion of 'form' located technology within the world as an instrument of humanity, philosophers have endeavoured to make sense of technology's transformative potential. Aristotle's ideas have informed other philosophers of technology, from Jacques Ellul (1964) to Martin Heidegger (1977).[21] While these authors never use the term posthumanism, their ideas on technology and nature are integral to contemporary theories of posthumanism.[22] For instance, Heidegger's concept of *enframing* offers a critical view of technology, which treats it as a *process* rather than an *artifact*. Indeed, Heidegger famously notes that the 'essence of technology is by no means anything technological' (1977: 4, 13) and his notion of enframing describes how technology is a process of revealing specific modes of being. Often considered to be a pessimistic view on technology, Heidegger's concern was that technology is perpetually an assault on nature since it always involves its alteration through destruction.[23] This struggle over how technology corrupts nature is visible in contemporary notions of posthumanism and is, as I suggest, the version of posthumanism that is a critique of *humanism*.

Thus, posthumanists treat technology as an ideology that enframes our utilisation of it, rather than an artefact that merely enables new kinds of functionality.[24] This is why one should not conflate the history of technology with the history of posthumanism, because only part of the posthumanist ideal seems connected to artefacts and our use of them. Instead, posthumanists have treated technology as an ideology, a particular kind of instrumental attitude that shapes the world. One might even question whether historical inquiries into nature (and how it is distinct from artifice) are part of the posthuman concern. Thus, while Mill's *On Nature* appeals as an attempt to disrupt the assumed design of nature as an appeal to human agency, posthumanism seems critically shaped by

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[20] Perhaps even more generally, one could characterise this collection of remarks as an appeal to discourse ethics, which would also draw on arguments about the public sphere, the polis and the role of the intellectual.

[21] Again, an indication of how the cultural and the philosophical have a common history is evident from Foucault's admission of Heidegger's positive influence on his own analyses of culture, including its medicalisation (Rayner, 2001).

[22] It is inconsequential that each of these authors thought of technology as pessimistically deterministic, as I have already argued that posthumanism does not establish a clear evaluative stance to accept technology.

[23] In this way, one is also drawn to the etymology of the word 'techne', which has its Greek root in the notion of 'art'. While it is not possible to consider in great depth the practice of posthuman art, such performers as the French artist Orlan and Australian artist Stelarc seem to be useful examples here. Moreover, Heidegger has often addressed the similarities between these two concepts of art and technology.

[24] Again, transhumanism seems more interested in where humanity might go in a world where it has those faculties.

a commitment to *transformation,* which itself might be characterised as an essentialist view on humanity (and nature).[25]

From this perspective, one might also include Nietzsche's *Übermensch* within our category of posthumanist thinking. Again, this seems one way in which the history of posthumanism is only partially connected to the history of transhumanism. So described, Nietzsche applies in the sense that he was interested in various forms of 'becoming' (Roodt, 2002) and transcendence rather than biological change specifically. Thus, when Nietzsche characterises the human state as provisional or, as the 'as yet undetermined animal', he beckons at an ideological transformation.[26] Further support for this view is evident if one characterises Nietzsche's *Übermensch* as a political philosophy. Ansell Pearson (1997b) notes that to construe Nietzsche's ideas as limited solely to biological transformations would be inadequate. However, rather than claim that his arguments could not be applied to such changes, he is more concerned that such a focal point of application would be to the neglect of Nietzsche's much broader expectation for becoming.

Thus, while Ansell Pearson notes that 'Nietzsche informs us that he writes for a species that does not yet exist' (1997b, bp.17), he is clear that Nietzsche had a much more profound becoming in mind. While I anticipate that respondents will claim that such changes are implied by both trans- and posthumanist ideas, Ansell Pearson's point is that we *cannot assume* that the changing of mere biology is always accompanied by a radical 'transvaluation of values'. This reinforces the suggestion that posthumanism is not merely a *latecomer* that so concerned Derrida, but rather a general claim about overcoming that is located within the sphere of the biological. Perhaps it is, as Ansell Pearson describes through Deleuze and Guattari (1988), the recognition of biology's originary function as inherently technical and where, today, we encounter the shift in matter – symbiosis rather than hybridity – as a 'desiring-machine'.[27] So conceived, Ansell Pearson reviews Stelarc's work – and more broadly the interface of art and science - as the 'site of a symbiotic complex which involves new mutant potentialities, preceding need and functioning beyond the pleasure principle.' Thus, Stelarc does not become a machine through his performance; he *is* a 'becoming machine'. As such, Ansell Pearson

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[25] Again, I stress that posthumanism is characterised by the tension between plural and essentialist views. Nevertheless, the philosophical perspectives I mention are affected by posthuman claims about the malleability of nature. Crucially, these authors describe a Newtonian mechanistic world view that is, as I suggest, extended by posthumanism through the employment of biological metaphors.

[26] This interpretation is increasingly relevant as technology progresses to make possible modification of cognitive capacities, such as the faculty of memory. In this sense, Nietzsche's view that the human capacity to act out memory as a distinguishing characteristic of humanness becomes all the more poignant as this acting out extends to erasing out or merely modifying.

[27] This is why I would consider Lewis' (2003, p.51) question 'how much time in your day are you not on the telephone, at the computer, watching T.V., listening to the radio, in the care, on the train, in a climate controlled environment?' to be dubious. The point it aims to make about the newness of technological culture neglects the fact that we/human beings ? are always a technological-being-in-the-world. In contrast, his observation that 'a central task in a post-human politics of Prozac is to challenge the hegemonic regime of bioscientific (and increasingly administrative) psychiatry and their pharmaceutical supporters. Crucially, to a very large extent, Lewis is articulating a valuable cultural studies of ethics that should be seen in the context of Zylinska's (2005) 'ethics of cultural studies'.

and, I believe, the characterisation of posthumanism I have described, avoids the claim that emerging technological changes must be seen as a break from evolutionary processes. Indeed, this view seems consistent with Fuss' articulation of Nietzsche's all too human when she notes that 'the only way to reach the human may be to overreach it, to exceed the boundaries that fundamentally delimit and define the human' (Fuss, 1996, p.4). So understood, posthumanism is a critical practice of understanding the kind of overreaching that seems characteristic of humanity.

An Ethics of Undecidability

To conclude, other continental philosophers provide additional historical context to the development of posthumanism*s*. As I mentioned at the outset, the preoccupation with Otherness appears characteristic of posthumanism's history at the forefront of all leading posthumanist scholars. Each of these areas of inquiry seeks to establish and negotiate boundaries of concern, whether they are moral, political or cultural. From here, one can infer from Emmanuel Levinas (1969) to explain how posthumanism encounters a sphere of responsibility that creates a crucial sociological and philosophical imperative. Indeed, one might describe the recent revival of posthumanism – evident by this book and the various other recent analyses I have mentioned – as a moral imperative to attend to the collapse of social responsibility that is confronted by catastrophic human tragedy. Levinas conceives of this by invoking the concept of the *face*, which we inevitably stand in opposition to when considering an ethical decision. He indicates that 'my being in the world requires justification' just because the extension of my being (the body as technology) involves an unavoidable violence towards the Other. Moreover, Levinas conceives of the other as the source of 'both my reason and my obligation'. Additionally, Jacque Derrida (1999) offers some explanation for the ethical imperative by drawing attention to the intrigue of undecidability:

> there would be no decision, in the strong sense of the word, in ethics, in politics, no decision, and thus no responsibility, without the experience of some undecidability. If you don't experience some undecidability, then the decision would simply be the application of a programme, the consequence of a premiss or of a matrix. So a decision has to go through some impossibility in order for it to be a decision. If we knew what to do, if I knew in terms of knowledge what I have to do before the decision, then the decision would not be a decision. It would simply be the application of a rule, the consequence of a premiss, and there would be no problem, there would be no decision. Ethics and politics, therefore, start with undecidability (1999, 66)

Thus, I suggest that posthumanism encounters an ongoing undecidability over the value of transgressing boundaries and that posthumanism is characterised by undecidability in relation to biological change. It is attempting to respond to the question asked by Kearney of Derrida:

> how do we relate our understanding of alienation as evil with the enigma of alterity as 'monstrous'? And if such a relation provokes confusion in our efforts to grasp the difference between good and evil, how do we make ethical discriminations at all? (Derrida, 1999, p.257-8).

Considerations of posthumanity are, for Derrida, unavoidably questions about the future. It 'relates to what is to come, to that which will occur in ways that are not appropriable, unforeseen and therefore urgent, before anticipation (Derrida, 1994, p.31). In this sense, responding to the potential Other of the posthuman has become 'a thought of pressing need' as it is a process through which self characterisation or the 'performative character of morality' is played out. Posthumanism is the theoretical consideration of the ongoing re-definition of an 'ethics of bodies that matter' (Zylinska, 2005).

I do not presume to offer a view on whether these various philosophical perspectives are in agreement about the value of biological modification and the cultures to which it gives rise. Rather, I have aimed to elucidate the earlier works of authors on whom contemporary posthuman authors have relied to re-construct humanism in an era of biotechnological change. Yet, it would be wrong to characterise this history as one of stalemate between technophobe and technophile. Indeed, some recent contributions to the question set by Derrida are visible within bioethics. For instance, Parens (2005) attempts to distinguish the different value systems of those who argue on behalf of medical enhancements and those who argue against by describing the former as operating from a 'creative' framework and the latter existing within a 'gratitude' framework. Parens' careful analysis seems consistent with Derrida's concern for ethical judgement to be hospitable so as to avoid a stalemate between seemingly oppositional view points. While I do not conclude from this that Parens is advocating a posthumanist view, I undertake that his analysis arises at a moment where posthumanism is constituted by an intrigue over what might become of this seemingly impossible struggle between competing value systems.

Conclusion

Within this chapter, I have endeavoured to outline the origins of contemporary discussions about posthumanism. In doing so, I have drawn a distinction between the political, cultural and philosophical contributions to this developing theoretical viewpoint. While it is fatuous to claim that these distinctions are clear, identifying the different questions they have asked is crucial to explaining the emergence of polarised views about the ethics of medical enhancements. Indeed, the consequences of this challenging situation – typified by the debate about the federal funding of stem cell research in the USA – is reflected in Fukuyama's recent contribution, *Beyond Bioethics* (Fukuyama and Ferger, 2007). Here, one is struck by the need to locate ethical debates about medical enhancements within a broader social and political framework.[28]

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[28] Even further evidence of this need is the recent trends towards *empirical ethics*, where various authors have called upon the need to underpin ethical research with social scientific and science communication investigations (Haimes, 2002; Miah, 2005).

In conclusion, the history of posthumanism has no obvious beginning, middle or end point in philosophical thought. Indeed, the current stage of theoretical interventions on this topic seems comparable to where postmodernism was located in the early 1990s. Indeed, this analogy extends to the potential divisiveness of the concept within and across disciplines. Nevertheless, the history of philosophy is scattered with specific moments of appeals to posthuman idea(l)s. So understood, posthumanism is as much a particular reading of the history of philosophy, as it is an attempt to rework philosophical views about what it means to be human, within the context of (the promise of) emerging technologies. Appeals to posthumanism as a series of philosophical concerns about biology compels it towards the pursuit of novelty, originality – which explains why it is inherently future oriented. One might add further to its usefulness as a concept by taking into account Virilio's (1977, 1995) claims about the acceleration of society, which, again, is an identifiable characteristic of the social discourses surrounding many emerging technologies. In this sense, the novelty of posthumanism should be understood as the rapid emergence of new ethical dilemmas and its capacity to develop a new sociality of ethics, rather than the newness of ethical theory that it might provoke.[29]

To its advantage, authors from across disciplinary boundaries have theorised posthumanism, which suggests its capacity to become a relevant philosophical paradigm. Yet, despite the proliferation of various views on posthumanism, many of them remain obscured in some of the crucial, policy-oriented debates about the legitimacy of medical enhancements. As such, I am inclined to conclude that we are still becoming posthuman, in the sense that these disconnected perspectives have yet to be written into its historical development, where, for instance, posthumanism is understood as a critique of humanism.

Nevertheless, despite acknowledging the overlap between the philosophical and cultural approaches to posthumanism, one might attempt to distinguish them in quite simple terms. Thus, cultural theorists are concerned about narratives of Otherness and their capacity to be politically divisive. On this view, the appeal of the posthuman is in the destabilising of humanist values – such as the aspiration of perfectibility or the value of controlling nature.[30] In contrast, philosophers of posthumanism often seem to share this view, but are engaged in a broader project that aims, nevertheless, to continue the Enlightenment ideal of *aspiring* to bring about progress through the employment of technology (as knowledge). This project has found its most visible articulation within the concept of *transhumanism*, which has become an organised movement and an aspiring philosophical perspective in its own right (see the *World Transhumanist Association* website).

Alternatively put, cultural posthumanists appear unified in their interest to provide a voice for marginal communities. In contrast, philosophical posthumanism makes a

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[29] However, one might legitimately discuss, for instance, Sherwin's (1998) *relational autonomy* as one such new ethical response to such changes. Elaborate or skip

[30] Indeed, I would conceive of the animal rights movement as a pre-cursor to a posthuman philosophy, since it similarly is concerned with the circle of moral concern and the relevance of locating such concern outside of specieist boundaries.

similar attempt for, as yet, *non-existent* communities who are expected to be marginal – such as the genetically modified or transgenic human. Indeed, perhaps it is the increasing proximity of these possible communities that provokes their emerging common ground. For example, the world has already witnessed the utilisation of xenotransplantation, which has provoked concerns about the crossing of species boundaries. Cultural posthumanism foregrounds the political process over and above the value of individual agency and, in this domain, it differs from the priorities of philosophical posthumanists. Also, cultural posthumanisms are more inclined to treat prosthetic devices as supportive to illness, rather than to espouse their potential to eventually surpass the normal range of human functioning and enhance humanity Moreover, such authors are significantly less enthralled by the promise of technology, compared with philosophers in this area.

It would be misleading to portray cultural posthumanists as the more pessimistic authors on the prospects of medical enhancements. Yet, it is rare that one reads a posthuman philosopher write about posthumanism in the following manner: 'my dream is a version of the posthuman that embraces the possibilities of information technologies without being seduced by fantasies of unlimited power and disembodied immortality' (Hayles, 1999, p.5). Thus, cultural posthumanists seem much less willing to accept that technological development is indicative of a 'linear model of the development of the human, from the "natural man" to the "posthuman cybernetic organism" (Zylinska, 2005; p.149)[31] Rather, cultural posthumanism involves a commitment to engaging with the 'multiplicities of life' (*ibid*). On this view, posthumanism is the study of the collapse of ontological boundaries, of which one central, but not isolated element, is the study of how moral landscapes might be transformed by this occurrence. Indeed, such a perspective seems adequately summarised by Wallace (2005) who invokes the notion of the 'posthuman humanist' (p.102) to draw attention to the interest of scholars, such as Haraway, in the relationships between varies kinds of beings – 'humans, animals and machines' (ibid).

Nevertheless, in both the philosophical and cultural analyses posthumanism emerges as a *visionary stance*, which also explains why it has invited suspicion by less enthusiastic academics. As was noted earlier, critics – who often do not distinguish between post- or trans- human authors – have been concerned about the future-oriented views that seemed to neglect socio-political concerns about both the implementation of technology within society and the prospective replacement of the human with something else. The remnants of these concerns are still visible within most recent critiques of trans/post humanism, such as Zylinska (2005). This, more nuanced view is expressed by such philosophers as Ansell Pearson (1997b) who argues that, 'the transhuman condition is not about the transcendence of the human being, but concerns its non-teleological becoming in an immanent process of "anthropological deregulation"' (p.163). Nevertheless, while it would be tempting to characterise philosophical posthumanism as essentialist and cultural posthumanism as pluralist, this would be too quick a judgement.

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[31] A claim that I expect would be disputed by many leading transhumanists but which, I would suggest, is often assumed of transhumanist thought.

As I have suggested, these various articulations of posthumanism have often been conflated and this chapter attempts to offer greater clarity to the differences in theoretical work on this subject. Their semantic differences become crucial when attempting to articulate the history of the concepts, because their definition and use have become constitutive of the ethical landscape.[32] Earlier, I mentioned that cultural and philosophical posthumanism are distinct in relation to enhancements because they arrive at medical ethics from different points of origin and with different interests. This is neatly surmised by the earlier disjunction between the rise of *cultural studies in ethics* (Haimes, 2001; Miah, 2005) and Zylinska's (2005) recent call for an *ethics of cultural studies*. More broadly, one might characterise this through such cultural analyses as Foucault's (1974/2004) interest in medicalisation versus Jonsen and Toulmin's (1988) casuistry and the subsequent development of narrative ethics (Lindemann, 1997; Chambers, 1999).

I have argued that the history of posthumanism is often written from within cultural texts through which moral narratives emerge and become the subject of political concern.[33] Indeed, this is perhaps the main space where one finds common ground between the philosophical and the critical theory approach to posthumanism. For, all authors who speak about post- or trans- humanisms (or humanism more generally), discuss some crucial texts where ideas about the future of humanity emerge. Indeed, when studying these texts, one becomes aware of how technology is often the scapegoat for ideological bad practice. It seems relevant that both approaches to posthumanism have become particularly interested in cognitive modifications and understanding the mind's capacities. Even within Gray's (2002) cyborgology, his tribute to Turing's (1950) work is crucial. This prioritising of biology as information, rather than matter, is appealing to both digital theorists and post genomic understandings of nature.

There are areas of interest that I have not considered in much depth here, though they add further a challenge to the claim that posthumanism is a subject located solely in high technology. For instance, more must also be said about the shift 'from chance to choice' (Buchanan, Brock, Daniels and Wikler, 2000) that also seems to characterise contemporary versions of posthumanism, where the possibility of radical biological change is afforded by new scientific discoveries. Again, in this context, posthumanism is best understood as the interplay of competing responses to these new encounters with moral dilemmas, rather than simply a limitless embrace of such change. While there are undoubtedly scholars of post- and transhumanism who would hold value in such choices, it is mistaken to characterise this enthusiasm as a lack of concern for social responsibility.

Also, I have not discussed the development of 'magic' as a form of technological knowledge (Stivers, 2001), or other modes of body modification, which have different

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[32] Again, we can recall the narratives of *Frankenstein* or *Brave New World* as having become part of the common language of framing high technological futures.

[33] A further example would be the emergence of the Ron's Angels website in 1999, which purported to auction ova and sperm, thus allowing bidders to purchase the genes of their offspring. In this case, there is little evidence that the company was anything more than a media spectacle. Alternatively, the telephone tooth implant that made the cover of Time magazine and which came out of a Design school at the Royal College of Art are constitutive of the moral debate about technology's limits.

transformative cultural meanings, such as tattoo, scarification or body piercing (Fisher, 2002). It seems crucial to inquire into how these practices and rituals of metamorphosis are different from, say, cosmetic surgery or the interest to extend life, both in terms of the ethical stance from medical regulation and as a claim about what and when posthumanity is constituted. It is a common misconception that posthumanism is grounded solely within technological change, yet these examples suggest that there is more to the transformative notion of posthumanity than is revealed by emerging technology.

Thus, an historical analysis of posthumanity cannot be grounded solely in technological transformation. Rather, it must be more broadly described as part of a set of interconnected discourses and philosophical claims surrounding concepts of mind, body, nature and artifice. It must take into account the historiography of concepts that have emerged and the cultural, political and media instantiations through which moral claims about a shift of humanisms can be asserted. Surrounding these debates has been the continual fluctuation of technological change specifically, but *change* more generally. At various points in time, the subject of that change has differed and contemporary posthumanism involves a change in kind to the boundary (and integrity) of nature and artifice.

In sum, the philosophical project of posthumanism can be marked by a set of boundaries and our cultural relationship to them. To this extent, posthumanism is a philosophical stance about what might be termed a *perpetual becoming*. It is also a cultural stance on the embeddedness of change within social processes. Posthumanism is indicative of a struggle of perspectives, perhaps analogous to the struggle of humanity's shedding of its biological limitations. It exhibits moments of concern about the fragility of biological decision making, which might be more broadly conceived as a postmodern anxiety. Yet, while posthumanism is struggling to be accepted, it is not a distinct perspective. It is the detritus of perspectives.

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