THE MORALITY OF TRANSHUMANISM: ASSESSING HUMAN DIGNITY ARGUMENTS

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ABSTRACT

The transhumanist movement propounds the view that the evolution of humanity must be extricated from the contingencies of blind natural selection and actively directed by human beings themselves, utilising existing as well as nascent technologies, in order to radically enhance and thus transform individual human capabilities to levels which far surpass current capacities. Transhumanism has elicited vehement critique, however, due to the claim that the transformations it proposes will result in a new posthuman species; and thus, that its aims represent a violation of human dignity. In order to assess this claim it is necessary to firstly investigate the aims and values of the transhumanist movement, as well as the technological means through which it proposes these aims will be fulfilled. This task is the focus of the first half of this thesis. Secondly, the concept of dignity itself must be examined in order to ascertain its status as a means of critiquing transhumanism. The second half of this thesis therefore explicates the notion of dignity by tracing its historical interpretations and uses, as well as the way in which it has been employed to uphold human rights and to adjudicate bioethical dilemmas in the contemporary milieu. This investigation enables the assessment of the two most renowned dignity arguments, namely, the arguments of the bioconservative thinkers Leon Kass and Francis Fukuyama which have been lodged against transhumanism, as well as the counter-argument of the transhumanist Nick Bostrom. In light of this discussion, the conclusion is that the notion of dignity is plagued by irrevocable ambiguity, vagueness and inconsistencies, due to the presence of conflicting interpretations. These findings have implications for the concept's efficacy to adjudicate the complex ethical conundrums posed, not only by transhumanism, but in the bioethics arena in general.

ABSTRAK

Die transhumanistiese beweging verteenwoordig die standpunt dat die evolusie van die mensdom losgemaak moet word van die toevallighede van blinde, natuurlike seleksie en aktief gerig moet word deur die mens self, deur van bestaande sowel as ontwikkelende tegnologieë gebruik te maak ten einde individuele menslike vermoëns radikaal te verbeter en dus te transformeer tot op vlakke wat huidige vermoëns ver oorskry. Transhumanisme het egter hewige kritiek ontlok weens die aanspraak dat die transformasies wat dit voorstel ‘n nuwe post-menslike spesie tot gevolg sal hê en dus dat die oogmerke daarvan ‘n skending van menswaardigheid verteenwoordig. Ten einde hierdie aanspraak te beoordeel, was dit eerstens nodig om die oogmerke en waardes van die transhumanistiese beweging te ondersoek, sowel as die tegnologiese middele wat voorgestel word as dit waardeur hierdie oogmerke verwesenlik sal word. Hierdie taak is onderneem in die eerste helfte van die tesis. Tweedens is die konsep van waardigheid self krities onder die loep geneem ten einde die status daarvan as ‘n middel om transhumanisme te kritiseer, te beoordeel. Die tweede helfte van hierdie tesis verhelder dus die idee van waardigheid deur die historiese interpretasies en gebruike daarvan na te gaan, sowel as die manier waarop dit aangewend is om menseregte te ondersteun en om dilemmas in die bioetiek in die hedendaagse milieu te bereg. Hierdie ondersoek maak die beoordeling van die drie mees bekende waardigheidsargumente wat teen transhumanisme gebring is, naamlik die argumente van die biokonserwatiewe denkers Leon Kass en Francis Fukuyama, sowel as die teenargument van die transhumanis Nick Bostrom, moontlik. Na aanleiding van hierdie bespreking is die gevolgtrekking van die skrywer dat die idee van menswaardigheid deurspek is met onvermydelike dubbelsinnigheid, vaagheid en teenstrydighede as gevolg van teenstrydige interpretasies. Hierdie bevindinge het implikasies vir die doeltreffendheid van die konsep om die komplekse etiese probleme wat gestel word, nie net deur transhumanisme nie, maar deur die bioetiek arena oor die algemeen, te beoordeel.

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CONTENTS

"The human genome underlies the fundamental unity of all members of the human family, as well as the recognition of their inherent dignity and diversity. In a symbolic sense, it is the heritage of humanity" (Article 1 of the *Universal Declaration on the Human Genome and Human Rights*, 1997).

"All other things have a limited and fixed nature prescribed and bounded by our laws. You, with no limit or no bound, may choose for yourself the limits and bounds of your nature. We have placed you at the world's centre so that you may survey everything else in the world. We have made you neither of heavenly nor of earthly stuff, neither mortal nor immortal, so that with free choice and dignity, you may fashion yourself into whatever form you choose" (Pico della Mirandola, 1486 in Brians et al., 1999).

1 Introduction

1.1 Overview

Transhumanism, the movement which aims at radically transforming the human condition through improvements in the areas of physical, cognitive and emotional functioning, may be conceived as merely the latest manifestation of a fundamental desire which has characterised human endeavours since the emergence of sentient human life. This drive to improve the human condition has indirectly given rise to the creation and development of technological capabilities which enable the innumerable advantages that characterise life in the contemporary milieu. In particular, the development of technology has enabled not only the transformation of the physical world in accordance with human needs, but has also afforded a greater degree of control over human physiology, and thus over human existence in general. Thus, whilst the aims of transhumanism appear to be highly radical and wholly novel, the movement may be viewed as the inevitable outcome of the amalgamation of the ancient and persistent desire to improve human existence with the technological advancements afforded by modernity.

If a difference between transhumanist aims and previous improvement endeavours is to be sought, it must be emphasised that this difference does not lie in the radical nature of the transhumanist ambition to transform human capacities to levels currently unimaginable. As mentioned above, human beings have long held lofty ambitions regarding their mortality and the improvement of various human capabilities. Rather, the rupture between the aspirations of the past and the aims of transhumanism lies in the fact that the likelihood of their realisation is now a distinct possibility. This is due to technological advancements which have reached unprecedented levels and have thus exceeded all expectations. In a sense, the advancement of technology is now self-perpetuating in that new capacities are enabled and driven by preceding developments, which result in exponential levels of growth and improvement. The rapid growth in serious academic engagement and debate with transhumanism is evidence that a recognition has taken place regarding the fact that the gap between the aspirations of transhumanism and the development of the means which will enable their fulfilment is rapidly diminishing.

The moral status of the transhumanist project is however, a site of intense conflict. This conflict is best illustrated by the two quotes provided before this introduction. The first quote is taken from Article 1 of the *Universal Declaration on the Human Genome and Human Rights* (UDHGHR, 1997), drafted by the United Nations Educational, Scientific and Cultural Organisation (UNESCO), and signed by 195 member states. This widespread global ratification of the declaration represents a global ethos of dedication towards the upholding of "the democratic principles of the dignity, equality and mutual respect of men" (UDHGHR, 1997). The UDHGHR explicitly recognises the possibilities which may be afforded by "research on the human genome and the resulting applications [which] open up vast prospects for progress in improving the health of individuals and of humankind as a whole" (ibid.). However, it also states that "such research should fully respect human dignity, freedom and human rights" (ibid.). The use of the term 'heritage' in the convention's description of the human genome as "the heritage of humanity" (ibid.), implies the assuming of a specific attitude towards the genome, namely one of pride, respect and prudence. Furthermore, the concept of 'heritage', which is synonymous with notions such as inheritance, legacy, endowment, bequest, lineage and birthright, is emotionally charged and generally perceived as possessing a deep connection with personal identity. In this regard, any phenomenon deemed to be part of one's heritage would generally be viewed as requiring preservation and protection from change.

Whilst the UDHGHR thus supports the preservation of the human genome, it also acknowledges the fact that knowledge pertaining to the human genome possesses the potential for tremendous benefits for human health. This in turn implies the legitimacy of applying such knowledge to effect possible changes to the genome, which may be required to raise the levels of human health to a common standard, thus enabling the conditions for human flourishing. Whilst article 11 explicitly condemns "practices which are contrary to human dignity, such as reproductive cloning of human beings", (UDHGHR, 1997), it does not explicitly address the permissibility of the genetic enhancement of human beings. The genetic enhancements of human beings, and in particular transhumanism, are however generally posited as falling within the realms of "practices which are contrary to human dignity" (ibid.).

However, despite the implications of the UDHGHR, the intense bioethical engagement with the ethical implications of genetic enhancement attests to the fact that the prospect of

enhancing and altering the human genome is not uniformly condemned by any means. Whilst there are a range of differing reactions to the possibility of genetically enhancing human beings, transhumanism, as a project aimed at radical enhancement, elicits its own distinctive reactions. If we are to place aside the arguments and concerns which address the possible concrete consequences which may arise if the aims of the transhumanist movement become a reality, what is left is a sense of deep unease which, judging by the discussions in the bioethics literature, is not always clearly articulated.

This unease seems to be sourced in the intuition that what transhumanism seeks to alter, is that which at the most fundamental level is associated with what it is that distinguishes human beings and human existence as valuable, worthy and idiosyncratically human. In other words, as identified by the UDHGHR, what is at stake is our human heritage and collective human identity. Furthermore, the juxtaposition of particular practices such as human cloning with the notion of human dignity provides a term, namely human dignity, which seems capable of effectively articulating the sense of unease evoked by transhumanist aims and the biological enhancement of human beings. Thus, a further fundamental human good may be identified as being under threat along with the heritage of humanity, namely, the dignity of humanity. In this regard, the two notions have become inextricably linked as what is perceived to be at stake in the enhancement debate and even more so in the case of transhumanism. What is thus perceived to be threatened by the realisation of the aims of transhumanism, is both the heritage and dignity of humanity.

Of course, if the possibilities proposed by transhumanism were uniformly condemned there would be no need for ethical engagement or debate. The debate regarding the morality of transhumanism is, however, beset by complexity, which may be illustrated by the second passage which follows the UDHGHR quote. This passage is taken from Pico della Mirandola's *Oration on the Dignity of Man* (1486) written during the Renaissance period. The passage is a 'conversation' between the creator or God and the biblical character Adam, taken as a symbol of humanity in general. Pico's Oration may be viewed as the seminal document of the Renaissance and a precursor to Enlightenment thought which placed the rational and autonomous human being at the centre of the world. Rather than submitting to the power of external forces, whether religious or natural, Enlightenment thought is characterised by a shift towards viewing humanity as capable of directing its own destiny.

The Pico quote most effectively captures the ethos of this momentous transformation in world view.

The quote is, of course, cited extensively in the transhumanist literature, due to its congruence with the views of the movement. The nature of Enlightenment 'man' is such that he has no fixed nature or form. Man, unlike all other creatures, possesses the freedom and capability to transform himself. In addition to containing this pioneering view of man, Pico's Oration is also one of the first documented references to human dignity that appears in modernity. As a result, both the transhumanist and dignity literature contain extensive references to this particular passage as one of the seminal documents regarding the idea of self-transformation and dignity. On the one hand, the passage possesses great power in that it offers a counter-argument to those who oppose transhumanism on the grounds that by seeking to radically alter the human being, it represents a violation of the dignity of humanity. In other words, a supporter of transhumanism would be able to reconcile the aims of the movement as congruent with a respect for the dignity of humanity, due to the fact that these aims accord with the view that man is a being characterised by his ability to transform himself.

On the other hand, those who oppose transhumanism would emphasise Pico's claim that any changes effected upon the human being must be made freely and with dignity. Depending upon factors such as what the nature of changes to the human being made with dignity would entail, or the implications for human dignity of the consequences of such changes to human beings, it is possible to build an argument which presents particular changes as incongruent with human dignity. What must be emphasised in explicating these opposing views, is that their legitimacy depends firstly upon the actual nature of the aims of transhumanism, as well as the manner in which these aims are interpreted and presented. Secondly, speculations regarding the possible consequences of the realisation of transhumanist aims also influence the success of arguments in this regard. Thirdly, the matter is complicated by the fact that the overriding arbiter of the question as to whether or not the aims of transhumanism represent a possible violation of the dignity of humanity, resides in how dignity, itself, is interpreted and defined. These three areas have thus been identified as the most pertinent focal points in assessing the question regarding whether or not the aims of transhumanism represent a potential violation of human dignity. All three areas will thus be addressed in this thesis.

1.2 Research Aims

This thesis aims to investigate the morality of transhumanism by assessing it specifically in terms of human dignity arguments. This investigation requires the explication of a number of different areas. Firstly, transhumanism itself must be thoroughly examined in terms of its aims as well as the means by which it posits these aims may be achieved. Secondly, the concept of human dignity must be contextualised and defined in order to establish its status as a means of critiquing transhumanism. Thirdly, the way in which notions of human dignity have been applied to assess transhumanism must be investigated. This thesis will therefore not attempt to assess the morality of transhumanism in general; but will rather focus upon the legitimacy of employing dignity arguments as a means of assessing the morality of transhumanism. Thus, it is not only transhumanism which will be the subject of investigation, but also the use of notions of human dignity.

1.3 Thesis Structure

The thesis will commence with an explication of transhumanism in Chapter 2. This chapter is comprised of three primary sections. In the first section, the transhumanist movement will be contextualised in terms of the historical events which have exerted an influence upon it. This will be initiated by a discussion of the movement's origins, as sourced in the aims of Enlightenment thought, and its emphasis upon rationality and autonomy as the defining human characteristics. The next important developments, which commenced during the early twentieth century and culminated in the development of transhumanism as a distinct movement with a clearly defined set of aims delineated in the first drafts of the movement's founding documents: the *Transhumanism FAQ* and the *Transhumanist Declaration* in 1998, will then be traced. This will include an introduction to the current and past key players who have exerted an influence upon the movement. The second section will contextualise transhumanism in terms of how it relates to genetic enhancement or the enhancement of human beings in general. In order to do this, it is necessary to investigate how enhancement as a means of improving species typical functioning above a specified norm, may be distinguished from the treatment of disease and dysfunction in order to restore health to this specified norm. This distinction, known as the treatment/enhancement distinction, and the key conceptual terms it employs will be fully explored. The third section will define transhumanism in terms of its fundamental aim which is the improvement of the human

condition. The means of achieving this aim as lying in the radical improvement of functioning and capabilities in the areas of human healthspan, cognition and emotion, as well as the fundamental values which inform transhumanist endeavours, namely rationality and autonomy, will then be explored.

Chapter 3 will investigate the means through which transhumanists envisage their aims will be met, namely, through the use of Genetic, Nano and Robotics/Artificial Intelligence (GNR) technologies. The evidence for the realisation of these aims will be shown to lie in the law of accelerating returns which is based upon Moore's law regarding the development of computational speed and has been developed by leading transhumanist, Ray Kurzweil. Kurzweil's adaptation of Moore's Law utilises evidence of the exponential growth of technology in order to extrapolate future developments which may be expected from GNR technologies. Kurzweil posits that such developments allude to the inevitable creation of superintelligence and a future singularity in which the rate of technological progress will result in a rupture in the character of existence as we currently know it. Each of the GNR technologies will be discussed in turn.

Firstly, the prospects envisaged in the area of genetics will be presented, with a brief investigation of the implications of the completion of the Human Genome Project for the realisation of transhumanist aims. Stem cell research as well as the contentious area of human cloning will also be examined. Secondly, the area of nanotechnology, including the prospects that may be expected in the field of nanobiotechnology, will be examined. This section will include an investigation of the enhancement possibilities offered by virtual reality and the biological upgrading of various organs and biological systems in the human body through the creation of nano assemblers and dissemblers which would operate at the nano and atomic levels. The chapter will conclude with an investigation of the area of robotics and Artificial Intelligence (AI), in which one of the most controversial transhumanist ideas will be introduced, namely, the possibility of the computational uploading of the human mind which would ultimately free humanity from its biologically based existence.

Chapter 4 will fully explicate the notion of dignity itself and is comprised of three sections. The first section will encompass a historical overview of the uses of notions of dignity; for which documented evidence of its employment in the writings of Stoic thinkers in ancient Rome, such as Cicero, exists. This overview will include an investigation of the way in which

the concept was developed during the Middle Ages, in accordance with Judeo-Christian tenets, and transformed during the Renaissance and the Enlightenment. The Kantian conception of dignity, as the foundation of modern interpretations of the notion, will then be investigated. This will be followed by a discussion of the employment of the concept of dignity during the twentieth century. The association of dignity with autonomy, as a product of the events of the Second World War, and the ensuing role played by conceptions of dignity in multiple national constitutions, will then be addressed.

The second section of this chapter will discuss the role of notions of human dignity in bioethics instruments and debates. This will encompass a discussion of the role played by the concept of dignity in the arguments of bioconservative members of the President's Council for Bioethics in the United States in the first decade of the twenty first century. The different attitudes towards the status of notions of dignity in bioethics will then be presented. The third section of this chapter will identify the congruencies which exist in the interpretations of dignity which were presented in the previous sections. This will be followed by a discussion of the conflicts which lie at the heart of recourses to notions of dignity. A symptom of these numerous conflicts is the fact that dignity may be used either to support or condemn the same practice depending upon which interpretation of the notion is employed. The identification of these conflicts will enable the elucidation of the notions of dignity which are at play in the arguments presented in Chapter 5. This discussion will also serve the purpose of illustrating the problems inherent to the concept of dignity itself.

Chapter 5 will illustrate how the notions of dignity discussed in Chapter 4 have been applied in dignity arguments both against and in support of transhumanism. This chapter will discuss the three most renowned dignity arguments which appear in the bioethics literature in this regard. Firstly, the argument of Leon Kass, the thinker most strongly associated with dignity arguments in general, will be presented. Kass has developed a complex argument in support of his position that the changes which would be effected to the human essence by transhumanism are in direct violation of the sanctity and dignity of humanity. In order to fully explicate Kass's position, and illustrate the incongruencies it contains, it is necessary to include a discussion of his views regarding the status of technology in general, as well as his views on death with dignity, relevant to the area of euthanasia. Francis Fukuyama's argument against transhumanism, on the grounds that it will alter human nature and thus the human values through which human rights and modern liberal democratic societies have developed,

will then be investigated. This discussion will examine how his association of human dignity with Factor X, which he attributes to the complexity of the human being and human consciousness, fails to prove the necessity of employing notions of human dignity rather than other notions which are more easily defined and comprehended. This chapter will conclude with a discussion of the way in which the transhumanist Nick Bostrom utilises two differing interpretations of the concept of dignity to argue that transhumans and posthumans could still be viewed as possessing the same type of dignity as that which is said to be possessed by current human beings. Bostrom's argument also illustrates the confusion which arises due to the presence of these differing conceptions of dignity which inform the arguments of many of the thinkers who employ the concept.

The implications presented by the findings discussed in Chapter 5 for the employment of notions of dignity in bioethics in general, will be addressed in the conclusion of this thesis. This discussion will identify what are deemed to be the three most problematic areas of concern associated with notions of dignity, and thus with the use of dignity arguments in general. The possibility of whether or not a coherent notion of dignity may be salvaged will then be addressed. Finally, a suggestion will be made regarding the assessment of the moral status of transhumanism.

2 What is Transhumanism?

2.1 Introduction

Transhumanism may be understood as a multi-faceted social, intellectual and cultural movement originating in the secular rational humanist tenets of Enlightenment thought. Transhumanists[1] propound the view that the evolution of humanity must be extricated from the contingencies of blind natural selection and actively directed by human beings themselves, utilising existing as well as nascent technologies, in order to radically enhance, and thus transform individual human capabilities, to levels that far surpass current capacities. Mechanisms of enhancement and transformation which are of particular interest to the transhumanist project are molecular nano and genetic enhancement technologies, cognitive and neuroscience, including the development of artificial intelligence and informational or computational technologies.

Transhumanism resists pithy definition due to the diversity of its proponents who range from science-fiction enthusiasts and futurists, to academics from multiple disciplines, scientists, engineers, biologists and physicists, all of whom pursue different possibilities regarding the radical enhancement of human beings in accordance with their fields of expertise. Examples of such areas of interest include the creation of superintelligence; biological life extension, utilising genetic enhancement procedures and nanotechnology, as well as the possibility of ultimately attaining immortality, achieved through the duplication and computational 'uploading' of the human mind. The underlying goal motivating all transhumanist endeavours is to provide the means to radically improve the physical, cognitive and psychological well-being and functioning of all human beings.

This chapter will investigate transhumanism in detail, commencing with a discussion of the relevant contextual factors, including the historical antecedents of the movement, and a brief review of the key players who have performed a vital role in influencing the movement. This will be followed by a discussion regarding the position occupied by transhumanism within the

[1] As explained by Nick Bostrom in the Transhumanism FAQ (2003a), when applied to the individual, the epithet 'transhumanist' simply refers to the fact that the individual in question is a proponent of transhumanism, or supports the aims of the movement. This term would differ from that of 'transhuman', which would refer to an individual who has utilised GNR technologies of enhancement and is no longer definitively or biologically human, but is not yet 'posthuman'.

broader project of enhancement as well as the nature of the distinction that has traditionally been drawn between enhancement and treatment, and the ethical implications and problems associated with this distinction. The remainder of this chapter will consist of a brief explication of the aims and underlying values of the transhumanist movement itself. Transhumanism will firstly be discussed in terms of the transformations it aims to undertake in the areas of healthspan, cognition and the emotional capacities of the human being. This will be followed by a discussion outlining the manner in which the movement is imbued with the Enlightenment ideals of rationality and autonomy. Transhumanism as a movement is characterised by a deeply technological approach to the radical enhancement of human beings. In this regard, the means through which it hopes to achieve its aims, namely the Genetic, Nano and Robotics/Artificial Intelligence (GNR) technologies, will be the subject of Chapter 3.

2.2 Important Contextual Factors

Before defining transhumanism in terms of its underlying values, as well as its aims and the mechanisms through which it hopes to achieve these aims, it is important to locate the movement contextually, firstly in terms of its particular historical development, and secondly, with regards to where it is situated in bioethical debates regarding enhancement in general.

2.2.1 Historical Context

i) Enlightenment Influence

As mentioned in the introduction to this thesis, transhumanism as a project concerned with enhancing human capacities, and thus with the improvement of the human condition in general, may in rather simplistic terms be viewed as but one of a multitudinous array of endeavours with which humanity has occupied itself since the recording of human activities commenced. The desire to form the self and improve upon the given is an ancient one and coincides with most human cultural endeavours, examples of which are too numerous to list, but of which language, education and medicine typically spring to mind. The Enlightenment era, with its elevation of the human being to the centre of what increasingly became a scientific, secular world view, is the epitome of this quest to improve upon or enhance existing capacities. As Kant so eloquently described it:

> Enlightenment is man's emergence from his self-imposed immaturity. Immaturity is the inability to use one's understanding without guidance from another. This immaturity is self-imposed when its cause lies not in lack of understanding, but in lack of resolve and courage to use it without guidance from another. *Sapere Aude*! [dare to know] 'Have courage to use your own understanding!' - that is the motto of enlightenment (Kant in Bostrom, 2005a:4)

In other words, the Enlightenment may be seen as the period in which humanity began to earnestly extricate itself from the control of external forces and place itself first and foremost in the position of responsibility for the quest of self-transformation, a task with which the transhumanist project is wholly occupied. Karl Barth discusses the Enlightenment as: an "age of absolutism" (1973:36), referring to:

> a system of life based upon the belief in the omnipotence of human powers. Man, who discovers his own power and ability, the potentiality dormant in his humanity, that is, his human being as such, and looks upon it as the final, the real, and absolute…something 'detached', self-justifying, with its own authority and power, which he can therefore set in motion in all directions and without any restraint (ibid.)

As Barth argues, this belief in human ability as absolute and omnipotent was based not only upon the scientific discoveries and technological progress occurring at the time, but also due to the fact that such knowledge had been discovered solely through the wherewithal of humanity without recourse to an external or higher power (ibid. 37). In other words, knowledge acquired through the discoveries of Copernicus and Galileo, regarding the true nature of the location of the earth within the universe, dispelled beliefs concerning the central location of humanity within the universe. This knowledge of the true nature of the universe had however been discovered entirely through human impetus and intellectual skill resulting in "man [being] all the greater for this, man is in the centre of all things, in a quite different sense…[and in this way] the geocentric picture of the universe was replaced as a matter of course by the anthropocentric" (ibid. 37-38). In order to fully comprehend the transhumanist project, whose aims are the utter transformation of the human being and ultimately the human-species, the movement must be viewed in terms of having been founded upon an extreme confidence in this premise of humanity as the ultimate arbiter of its own self-formation, originating in Enlightenment thought.

In addition, the Enlightenment was also the period in which rational humanism, as a mode of thought, began to hold sway. Rationalism advocates a focus on "empirical science and critical reason" (Bostrom, 2005a:3), as a means of understanding and organising the world. This frame of reference is then utilised as a source of guidance for the rational explication of

ethical tenets and morality in general, rather than a received religious world view. Humanism as a product of the Renaissance period encouraged "[t]he ideal of the full development of a rich flourishing of individual potentiality" (Mautner, 2005:283). As will be illustrated in this chapter, transhumanism is founded upon an absolute faith in the rational, autonomous individual, and in this regard, the movement is clearly rooted in the paradigm of rational Enlightenment humanism.

The transformation in world view wrought by rational humanist structures of thought was further influenced by Darwin's theory of evolution, as documented in the *Origin of Species* (1859), which posits the view that the human being in its present form is but a transitory entity, situated within an ongoing trajectory of evolutionary change, a process which is by no means complete (Bostrom, 2005a:3). Most importantly, Darwin's work resulted in the pivotal realisation that the evolutionary changes which have characterised human existence are not teleological. In other words, evolution does not signify improvement, progress or any ultimate purpose other than natural selection. Darwin posited that natural selection entails the development of specific physical characteristics in accordance with their ability to ensure the reproduction, and thus the survival of the organism in question.

There are of course considerable divergences between contemporary evolutionary biology and Darwin's original theory of evolution due to the knowledge afforded by subsequent developments in the field of genetics and other related areas. However, the important point, for the purposes of this discussion, is that Darwin's ideas represented a challenge to the view that our current human form is the product of some form of intelligent design which is directed towards some ultimate purpose and thus should not be tampered with. The debunking of this view was one of the necessary preconditions for the development of the ideas which inform the possibility of humanly driven biological evolution. Recognition of the processes of evolution coupled with a secular rational world view and a focus on the human being as solely responsible for the project of self-transformation are the bedrock upon which modes of thought such as transhumanism were brought to fruition.

ii) Early Twentieth Century Influences

The first actual usage of the term 'transhumanism' occurred in Julian Huxley's[2] *New Bottles for New Wine* (1950). Huxley has been described as a proponent of 'evolutionary humanism' which refers to:

> the deliberate effort by mankind to 'transcend itself – not just sporadically…but in its entirety, as humanity…Man remaining man, but transcending himself, by realising new possibilities of and for his human nature (Huxley in Tirosh-Samuelson, 2011:20).

Huxley pre-empted the transhumanist dream as well as the vision of posthumanity, envisaging that "the human species will be on the threshold of a new kind of existence, as different from ours as ours is from that of Peking man" (Huxley in ibid.). Huxley and the geneticist John Burdon Sanderson Haldane as well as the molecular biologist John Desmond Bernal, are considered the "prophets of transhumanism" (ibid. 21), in terms of their scientific aspirations regarding the possibility of the "transformation of the human brain" (ibid.). In fact, as early as 1924, Haldane published an essay entitled *Daedalus of Science and the Future* in which he discusses the possibility of altering our genes to achieve great benefits. In one passage he argues:

> there are perhaps…great possibilities in the way of the direct improvement of the individual, as we come to know more of the physiological obstacles to the development of different faculties…As our knowledge of this subject increases we may be able, for example, to control our passions by some more direct method than fasting and flagellation, to stimulate our imagination by some reagent with less after-effects than alcohol, to deal with perverted instincts by physiology rather than prison (Haldane, 1924)

Such postulations, which would at the time of writing, have been viewed as bordering upon science-fiction, are discussed further by Bernal in his volume, *The World, the Flesh, and the Devil* (1929). Here Bernal speculates on subjects such as "space colonisation and bionic implants as well as mental improvements arising from advanced social science and psychology" (in Bostrom, 2005a:5).

[2] The biologist Julian Huxley was UNESCO's first director general as well as one of founders of the World Wildlife Fund. He also happened to be the brother of Aldous Huxley, the author of the dystopic novel *Brave New World*. Please see the appendix on page 179 for a brief summary of *Brave New World* which will be referred to at multiple sites during this thesis, due to the role it plays in the arguments from human dignity lodged against transhumanism.

The image of the quest to improve humanity through the utilisation of science, and more specifically through genetic enhancement, was somewhat tarnished by the publication of dystopic novels such as Aldous Huxley's *Brave New World* (1932) and George Orwell's *Nineteen Eighty-Four* (1949). This image was dealt a further devastating blow and damaged, perhaps irrevocably according to the view of some critics of enhancement[3], as a result of the atrocities perpetrated by the Nazi regime in the name of eugenics or "racial hygiene" (Proctor, 1988, in Buchanan et al, 2009:9) during the Second World War. As discussed by Bostrom, eugenics refers to the desire to purify humanity of undesirable genes and thus ultimately of individuals considered to be "unfit" or displaying characteristics deemed undesirable (2005a:6). The eugenics movement, prevalent during the early twentieth century, was taken to horrifying extremes not only by the Nazi regime, but was also advocated in countries such as the USA, Canada, Australia, Sweden, Denmark, Finland, and Switzerland. The primary targets of such eugenic interventions, in the form of forced sterilisations, were among others: "the mentally disabled…the deaf, the blind, the epileptic, the physically deformed, orphans, and the homeless" (Bostrom, 2005a:6). Much of the suspicion and critique directed at enhancement endeavours in general is associated with the supposed relationship it bears to the eugenics movement.

iii) Later Twentieth Century Influences

Despite the pernicious nature of various eugenics policies advocated in the manner mentioned above, the quest to improve the human condition persisted in fields such as computational science and cybernetics and was further speculated upon in a more positive vein by writers in the science-fiction genre[4]. This quest however, bore the imprint of the atrocities committed in the name of eugenics in its extreme wariness of all forms of centrally or collectively imposed calls for change or improvement. Emphasis was placed rather on the autonomous individual as bearing the primary responsibility for the decision of whether or not to partake in enhancement endeavours (Bostrom, 2003a:40). In the second half of the twentieth century, transhumanism was influenced by the work of thinkers such as F.M. Esfandiary, a futurist who changed his name to FM 2030, signifying the date at which he hoped to achieve his centennial birthday. FM 2030 described "transhumans as persons who behave in a manner

[3] The renowned philosopher Jurgen Habermas, is an example of a thinker who holds such a view. His work entitled *The Future of Human Nature* (2003), addresses the implications of genetic enhancement upon identity.
[4] Examples of such writers are Arthur C. Clarke, Isaac Asimov, Robert Heinlein, Stanislaw Lem, Bruce Sterling, Greg Egan and Vernor Vinge (Tirosh-Samuelson, 2011:22).

conducive to a posthuman future" (Tirosh-Samuelson, 2011:22). During this period, transhumanism was also influenced by the development of possibilities which had previously only been associated with science-fiction, such as "life extension, cryonics [and] space colonisation" (ibid.), as well as the further development of Genetic, Nano and Robotic (GNR) technologies.

Robert Ettinger, generally credited with the instigation of the cryonics movement, introduced the idea in his volume: *The Prospect of Immortality* (1964). Cryonics is now a pivotal transhumanist area of interest. As discussed by Bostrom (2003a:41), many transhumanist thinkers and scientists who are dedicated to the task of radical life extension, recognise that the alleviation or curing of the diseases of the aging process may take longer than anticipated. Thus, the possibility of having one's body cryogenically frozen and preserved after death, in the likelihood that future scientific developments are able to reverse any cellular or physical damage to the body incurred during the freezing process, offers an attractive short-term solution to many transhumanists. The most desirable outcome in this regard would be a future scenario in which reanimation is enabled, by not only repairing any damage incurred during the process of freezing, but also by being able to cure the actual cause of death, whether due to disease or the aging process.

The most pertinent developments in the transhumanism movement however, occurred from the 1980s onwards not only as a result of further scientific and technological breakthroughs, but also due to the ongoing work, ideas and interactions between several key players in the field. Names of influential thinkers from this period which are prevalently cited in the transhumanist literature include among others: the engineer Eric Drexler. Drexler, a pioneer in the field of molecular nanotechnology, not only performed ground-breaking work in this field in his volume *Engines of Creation* (1986), but also acknowledged and explored the necessity of safeguarding against the risks posed by advancements in this area. In addition, Hans Moravec, the artificial intelligence specialist and author of the work *Mind Children* (1988), is also recognised as contributing much to the field of robotics.

iv) Key Players in Transhumanism

There are several key figures who have emerged in the last two decades, and may be considered integral to the transhumanist movement. The first is, of course, the philosopher

and ethicist Nick Bostrom, director of the Future of Humanity Institute as well as the Impacts of Future Technologies Programme at the Oxford Martin School based at the University of Oxford. Bostrom is one of the leading ethicists in the field of enhancement in general, having edited and published a number of books and papers on the subject, one of which is the volume edited with Julian Savulescu entitled *Human enhancement* (2009). He is also responsible for the founding of the World Transhumanist Association (WTA)[5] in 1998 with David Pearce, which has subsequently been renamed Humanity+, as well as the Institute for Ethics and Emerging Technologies with James Hughes. The WTA was responsible for the creation of the academic, peer-reviewed *Journal of Evolution and Technology* in 1999. In addition, Bostrom is responsible for the ongoing production and maintenance of the *Transhumanism FAQ*[6], the movement's foundational document, along with over a hundred other contributors.

Another influential transhumanist is Max More; who, along with Tom Morrow, founded the *Extropy* Magazine as well as the Extropy Institute in 1988. In version 3.0 of the *Extropian Principles*, the movement's foundational document, More describes Extropy as a 'transhumanist philosophy' which refers to "the extent of a system's intelligence, information, order, vitality, and capacity for improvement" (1998). More lists and elucidates the seven principles of Extropianism as: "perpetual progress, self-transformation, practical optimism, intelligent technology, open society, self-direction, and rational thinking" (1998).

The musician and composer Simon Young is another prominent transhumanist. Young produced the substantial volume entitled *designer evolution: a transhumanist manifesto* (2006), as a particularly vehement reaction against the bioconservative[7] condemnation of

[5] The WTA is a nonprofit organisation which is dedicated to all transhumanist activities and interests, including the promotion of transhumanism to the general public, as well as its encouragement as a subject worthy of academic pursuit.

[6] The Transhumanist FAQ, mentioned in the introduction to this thesis, is a fifty five page document which is the result of the concerted efforts of the most renowned exponents of transhumanism from a diverse array of fields of expertise. Bostrom describes it as "an attempt to develop a broadly based consensus articulation of the basics of responsible transhumanism…that could serve both as a guide to those new to the field and a reference work for more seasoned participants" (2003a:54). The FAQ has been revised and updated several times since its original version in 1999.

[7] For the purposes of this thesis, the term bioconservative is used to refer to the opponents of, not only radical enhancement, but enhancement in general. Bioconservatives are also vehemently opposed to, among other things, the possibility of human cloning; stem cell research which destroys human embryos in the process; the destruction of embryos in general, including abortion, as well as practices such as euthanasia. Bioconservatives do support the use of genetic technologies for the treatment of inheritable genetic disorders. However, they oppose any attempts to enhance human capacities due to their view that the human being in its present state should be left as is. According to bioconservatives, attempting to alter or 'improve' our genetic structure amounts to hubris, playing God or tampering with nature, and risks destroying our humanity. Examples of such

radical enhancement. Young describes transhumanism as: "the belief in overcoming human limitations through reason, science, and technology (2006:15). He also argues that in the same way that "humanism freed us from the chains of superstition, [so too will] transhumanism free us from our biological chains" (ibid. 32). Another renowned transhumanist, the sociologist and bioethicist James Hughes, produced the work entitled *Citizen Cyborg: Why Democratic Societies must Respond to the Redesigned Human of the Future* (2004). Hughes espouses democratic transhumanism; which refers to the quest to ensure that enhancement technologies, and thus opportunities for individual improvement, are made freely available to all, through strict observance of the principles of democracy.

Finally, mention must be made of two of the most prominent exponents of transhumanism: the engineer Ray Kurzweil and the gerontologist Aubrey de Grey, who have both contributed enormously to technological advancements in the field of radical enhancement. Both have published extensively on the subject, Kurzweil having produced three extremely successful works: *The Age of Intelligent Machines* (1990), *The Age of Spiritual Machines* (2000) and *The Singularity is Near* (2005). Kurzweil is noted for his invention of the speech recognition technology which has enabled blind persons to utilise computers, as well as his ground-breaking work in the field of artificial intelligence (AI)/robotics. Within the field of AI, Kurzweil has dedicated much of his career to the task of creating superintelligence viewing it as the most effective means through which radical enhancement may be realised. He has also explored the possibility of the computational uploading of the human brain as a means of life-extension. The inextricable connection between technology and transhumanism, most evident in Kurzweil's approach, bears relevance to the critique of transhumanism which is the subject of the second half of this thesis. His work will therefore be discussed in detail in Chapter 3. The primary area of interest of the other leading transhumanist technologist, de Grey, lies in the field of gerontology, a discipline concerned with the causes and processes of aging and the possibility of achieving radical life extension through approaching the aging process as a disease which is curable. De Grey has written extensively in his field, most notably producing the acclaimed work *Ending Aging* (2007), and edits the academic journal *Rejuvenation Research* as well as heading the SENS Foundation, an organisation dedicated to the solution of the problems of aging and radical life extension.

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critics include Francis Fukuyama, Leon Kass, Bill Mckibben, Erik Parens and Michael Sandel. Renowned bioconservative arguments against transhumanism will, of course, be discussed in Chapter 5.

The above section has discussed the ideals espoused by transhumanism and the enhancement project in general as originating from the Enlightenment elevation of the rational and autonomous individual to the central position in its own self-determination. The history of the movement was outlined, followed by a brief introduction to the key players concerned. In seeking to fully contextualise transhumanism however, it is also necessary to discuss it not only in terms of its historical trajectory, but also with regards to the broader project of enhancement in which it is located. In addition, the term enhancement itself must be defined. An effective means of defining enhancement is to discuss it in terms of how it may be distinguished from the treatment of disease, thus necessitating an investigation into how disease itself is defined. This will be the focus of the following section.

2.2.2 The Context of Enhancement in General

i) The Treatment/Enhancement Distinction

Transhumanism advocates the use and development of a broad range of technologies, of which genetic technologies are but one example. Whilst its aims are more radical, transhumanism and the project of genetic or general enhancement do, of course, share similarities and are thus susceptible to corresponding criticisms. A concern which is viewed as relevant to the moral status of both genetic and radical enhancement is the distinction between treatment and enhancement. An explication of this treatment/enhancement distinction is necessary firstly in order to elucidate and define what is meant by enhancement itself. Secondly, its discussion is further warranted by the fact that critiques of transhumanism, in particular those which will be addressed in Chapter 5, are informed by the assumption that the differentiation between treatment and enhancement is an objectively valid distinction and a legitimate means of adjudicating between the moral statuses of the two. In this regard, the bioethics literature abounds with discussions questioning the moral permissibility or ethics of "genetic enhancements of normal traits, as opposed to genetic treatments for disease" (Buchanan et al, 2009:96), also described as positive or negative genetic interventions.

Buchanan et al explain that:

> the treatment/enhancement distinction draws a line between services or interventions meant to prevent or cure (or otherwise ameliorate) conditions viewed as diseases or impairments and the interventions that improve a condition viewed as a normal function or feature of members of our species (2009:110).

As a means of defining enhancement, this understanding of the treatment/enhancement distinction is a useful one. It is however necessary to explicate a number of the terms it employs, namely, what constitutes a disease and how 'normal functioning' may be defined. The way in which we understand the latter is important in terms of what would count as an improvement or enhancement.

ii) Normal Species Functioning

Norman Daniel's definition of the term disease, found in his theory of *Just health care* (1985), as: "any adverse departures from normal species functioning" (Daniels in Buchanan et al, 2009:16), based upon Christopher Boorse's influential work entitled *On the distinction between disease and illness* (1975), is useful but necessitates a further definition, namely that of 'normal species functioning'. The problem of defining what would constitute normal species functioning is, however, a notoriously challenging task, due to the fact that there are myriad ways in which this could be attempted, depending upon the paradigm from which one approaches the task.

As discussed by Savulescu et al, what is understood as normal functioning depends, in terms of a sociological pragmatic approach, upon particular cultural, social, political or historical values (2011:3). In other words, what is seen as normal, would be that which is agreed upon as desirable or undesirable in a particular context[8]. An alternate understanding of normal functioning, and one which is generally associated with a bioconservative approach, originates from an ideological paradigm. Such an interpretation would base its delineation of what would fall on either side of the normal/abnormal dividing line upon supposedly universal, timeless and unchanging values which receive justification from metaphysical, spiritual or religious realms (Savulescu et al., 2011:4). For the purposes of this discussion

[8] Homosexuality, which refers to persons who identify as Lesbian, Gay, Bisexual or Transgender (LGBT), is a good example in this regard; in that it was only removed in 1986 from the *Diagnostic and Statistical Manual* (DSM), which is utilised by the medical profession as a means of diagnosing mental illness. This historical categorisation, and subsequent stigmatisation of homosexuality as a mental pathology requiring some form of treatment, is still present in certain contexts, despite the growing prevalence of the constitutional protection of the rights of LGBT individuals, such as is the case in the South African Constitution.

however, it is not necessary to dwell on the numerous ways in which the task of defining normal functioning may be approached. The salient point to take note of, is that the notion of normal functioning is a contested one, reflecting the tenuous nature of the treatment/enhancement distinction, in terms of where treatment of sub-normal functioning becomes enhancement of normal functioning[9].

Difficulties in this regard aside, there is an effective way, currently predominant in the enhancement literature, of framing what would constitute normal species-functioning; namely, the *normal function model* utilised by Daniels. This model, based upon a "naturalistic conception of disease and enhancement" (Savulescu et al., 2011:5), utilises statistical averages in order to explicate normal functioning and thus defines disease as:

> [a]ny state of a person's biology or psychology which reduces species-typical normal functioning below some statistically defined level (Daniels in ibid.),

and subsequently enhancement as:

> [a]ny change in the biology or psychology of a person which increases species-typical normal functioning above some statistically defined level (ibid.).

Thus, as Savulescu et al explain, a human trait such as intelligence would be measured according to the statistical average or "normal distribution of function" (ibid.) in a population, by utilising a measuring device such as the Intelligence Quotient (IQ). Falling below a particular figure, in this case 70, would result in receiving the classification of being intellectually disabled. Thus, endeavours aimed at the elevation of an individual's IQ from below this average to the average of 70, would be viewed as treating a disease or a state of impairment. On the other hand, any attempt to elevate intelligence above this average would be strictly classified as enhancement. As Sabin & Daniels have pointed out, it is clear that

[9] A good example of where the distinction collapses is discussed by Nils Holtug. Holtug holds the position that there is not necessarily a "morally relevant difference" (1998:211) between treatment and enhancement. He gives an example of a patient, Jane, who is infected with HIV, which is progressing to AIDS. If Jane is given a therapy that will enable her immune response to resist AIDS related infections, she would effectively be cured of the virus. On the other hand, we have another patient, Helen, who is a hemophiliac, thus requiring profuse blood transfusions from blood reserves that have not yet been tested for HIV. In all likelihood, it seems inevitable that Helen will contract HIV. If it were possible to give Helen a particular therapy which prevents her from contracting HIV and only works on hemophiliacs, she would be receiving an intervention that would typically be viewed as an enhancement, due to the fact that it is not a capacity generally possessed by individuals. Holtug's argument is that there would be no intuitive difference between the two interventions. However, those who posit a moral difference between treatment and enhancement would be required to condemn the 'enhancement' performed on Helen whilst supporting the treatment performed on Jane. Such a distinction here, seems wholly arbitrary, due to the fact that neither case is any more or less urgent than the other.

where the dividing line falls, and on which side one finds oneself situated, has important implications regarding the allocation of healthcare funding, and thus broader implications concerning social and distributive justice itself (1994:5)[10].

For the purposes of our discussion of transhumanism as located within the broader enhancement paradigm, we have attempted to settle upon a definition of normal species functioning as based upon a statistical average, which in turn, determines what is considered treatment of disease or disability; and thus, where treatment ends and becomes enhancement. It is important to remember however, that this distinction is not a neutral or apolitical one due to the fact that our criterion of judgement, namely the utilisation of an average distribution based upon a naturalistic approach, wholly influences where the dividing line falls. As Bostrom and Roache argue, however, the problems associated with the treatment/enhancement distinction are only relevant in such cases where this distinction is utilised for unmitigated condemnation of all enhancements (2008:122). This is generally the case with the bioconservative agenda which supports the treatment of what would be defined as disease and opposes any enhancement over and above what would be viewed as normal species functioning. As the notion of normal species functioning has been posited as the most efficient means of explicating the concept of enhancement itself, a brief discussion of further problems associated with the distinction must be undertaken before commencing with a clarification of the term enhancement itself.

iii) Problems with the Treatment/Enhancement Distinction

The problems that arise from defining enhancement, in terms of how it is distinguished from the treatment of disease, are manifold and have formed the basis of a vast array of enquiries into the subject (Buchanan et al, 2009; Harris, 2007; Daniels, 2000; Juengst, 1998). Bostrom and Roache (2008) address some typical concerns with the distinction which bear particular relevance for transhumanism.

[10] An example illustrates this point. An individual falling below the threshold of an IQ of 70, might receive state-sponsored treatment in order to raise his/her level of cognitive functioning. Someone whose IQ falls just above this threshold would still be at a disadvantage intellectually; however, any medication aimed at improving his/her condition would be viewed as an enhancement, and thus, in all likelihood, the individual would be expected to personally fund its purchase.

Firstly, the distinction is based on a division that is not clear cut in terms of the fact that what we would define as "standard contemporary medicine" is not only concerned with the treatment of disease, but also with its prevention in the first place. This includes many areas of specialisation, such as "palliative care, obstetrics, sports medicine, plastic surgery, contraceptive devices, fertility treatments" (Bostrom & Roache, 2008:120), and multiple other examples, most of which would defy easy classification on either side of the dividing line. In this regard, the transhumanist tendency to view the maladies of old age as symptoms of disease which require curing, could, on the one hand, be said to fall within the category of treatment. On the other hand, equally convincing arguments could just as easily be made for such measures to be classified as procedures of enhancement, due to the fact that the aging process and death are traditionally viewed as inevitable and not as a departure from normal species functioning (ibid.).

Secondly, as discussed by Resnik, it would appear that there is no ethical basis upon which the treatment/enhancement distinction is made, in terms of the condemnation of enhancement and the acceptance of treatment as intrinsically immoral and moral respectively (2000:365). The support of treatment as opposed to enhancement is generally justified with recourse to the goals of both; with treatment viewed as acceptable, due to its aim of intervening to rectify what has malfunctioned and reinstate functioning to a level experienced as the norm. The goals of enhancement, on the other hand, are not as uniform as those of treatment, and thus, the enhancement project is more vulnerable to diverse criticisms and condemnations such as the charge of hubris. This refers to the supposedly arrogant attitude of mastery which is said to characterise the desire to transform the individual beyond what has been allotted by the genetic lottery through the process of evolution.

This lack of acceptance of the given as evidence of hubris and thus the grounds upon which enhancement ought to be rejected has been argued most notably by Michael Sandel in his work: *The Case Against Perfection* (2007). Resnik contends that viewing the distinction in terms of the moral status of both endeavours is suspect due to the fact that it assumes "a clear and uncontroversial account of health and disease" (2000:366); a delineation which, as discussed by Bostrom and Roache above, is not easily made. Furthermore, as pointed out by Resnik, even if we accept the definition of disease discussed in the previous section, namely as a departure from species typical functioning where typical functioning is dependent upon a statistical norm, this understanding contains no normative content (ibid. 367). In other words,

the agreed upon definition of what constitutes a disease contains no reason as to why it should be acceptable to restore species typical functioning, but unacceptable to move beyond this level. The important question in this regard is: upon what grounds should species typical functioning be awarded special moral status?[11] Besides the metaphysical and religious justifications which may be offered; are there good reasons for the claim that enhancement is intrinsically wrong? Might it not simply be the case that the special status awarded to normal species functioning is indicative of the presence of a distinct status quo bias?[12]

The treatment/enhancement distinction collapses the diversity of goals which may inform enhancement endeavours, rejecting enhancement outright, and in accordance with justifications which may be viewed as arbitrarily founded or based upon pronouncements made with very little empirical evidence[13]. A more effective means of adjudicating whether or not an intervention could be viewed as ethical or unethical would be to examine interventions not in terms of which side of the treatment/enhancement distinction they are situated, but rather on a case by case basis in accordance with guiding ethical principles. The difficulty of such a task would then lie with which guiding ethical principles would be chosen and the justification of these choices[14].

This section has addressed the dubious use of the treatment/enhancement distinction to either support or condemn interventions depending upon which side of the division they may be situated. This distinction, coupled with an understanding of how disease or dysfunction may be viewed as a departure from species typical functioning, enables a clearer understanding of what constitutes enhancement. The notion of enhancement and its interpretation in the

[11] This question bears particular relevance to the arguments from dignity lodged by Kass and Fukuyama against transhumanism which will be discussed in Chapter 5. Both thinkers vehemently condemn the possibility of genetic enhancement, whilst explicitly stating that they support the use of genetic interventions to treat disease or malfunctioning genes, even if such interventions may alter the genes in question.

[12] Bostrom and Ord have addressed the subject of status quo bias in their article *The Reversal Test: Eliminating Status Quo Bias in Applied Ethics* (2006). Status quo bias refers to the tendency to rely upon intuitions rooted in feelings or emotions, regarding whether or not a particular plan or course of action should be followed. These intuitions are then reframed as unquestionable objective facts. Bostrom and Ord view status quo biases as playing a major role in the opposition towards human enhancement endeavours.

[13] This is a point made by Buchanan in reference to Sandel's argument in *The Case Against Perfection* mentioned above (2011:8). Sandel's rejection of enhancement is based upon the failure of those who would enhance themselves, fail to appreciate *the given*. Here, Sandel assumes, without apparent evidence, that the goals of enhancement belie a pathological obsession with perfection on the part of those who would enhance. As a result, he argues for the rejection of all enhancements, due to the fact that enhancement endeavours fail to "appreciate…life as a gift" (Buchanan, 2011:9). Sandel does not offer adequate grounds as to why life should be appreciated as a gift in the first place.

[14] A candidate for a guiding ethical principle that has received much attention is the notion of human dignity which of course will form the central locus of our discussion in this second half of this thesis.

context of transhumanism will now be investigated, before commencing with a full explication of transhumanism itself.

iv) Defining Enhancement

Despite the apparently self-evident nature of the term enhancement, it is nevertheless necessary that it be explicitly elucidated, as the project of transhumanism is commensurate with the project of the enhancement of the human being, albeit in a more radical manner. The first point to be noted; is that the type of enhancement relevant to our discussion of transhumanism is of course biomedical enhancement. As alluded to by Bostrom and Roache, there are a vast diversity of practices, situated outside the biomedical sciences, which are also viewed as enhancements. Examples range from the consumption of caffeine to aid mental acuity, to the use of beauty products to alter appearance and exercise to enhance appearance and health, to name but a few (2008:120). While such interventions may surely be categorised as enhancements, and many such as exercise for example, do bring about a corporeal change that is considered to be an improvement, biomedical enhancements differ in the way that they act directly upon the body and the means through which they do so.

Biomedical enhancement is defined by Buchanan as:

> a deliberate intervention, applying biomedical science, which aims to improve an existing capacity that most or all normal human beings typically have, or to create a new capacity, by acting directly on the body or brain (2011:23).

The only qualification that must be added, is the fact that transhumanism advocates the role, not only of biomedical science, referring to the use of technologies and methodologies developed and utilised within the paradigm of medical science to act upon the body, but also other emerging technologies; namely, nano, informational and computational technologies, which will be discussed in the following chapter. A tentative formulation regarding the notion of species typical functioning which is congruent with Buchanan's phrase: "normal human beings", in the above quote, was reached in the previous section. The term enhancement however, in terms of what is meant by the **improvement** of an existing capacity, must now be elucidated further.

The notion of enhancement has been subject to a diversity of interpretations, with more consensus reached over how it ought **not** to be defined than how it ought to be defined. In particular, there have been differences of opinion regarding whether or not enhancement should be defined in terms of its ability to achieve a positive outcome or a form of 'the good'; in other words, as an improvement. As a point of departure, in his chapter defining what is meant by enhancement, Harris presents the Daniels definition of enhancement; namely, "anything that makes a change, a difference for the better" (in 2007:36), as representative of what we generally mean when we use the term. This accords with the common conception of the word enhancement as by definition implying some form of betterment, improvement or change. In other words, an enhancement generally implies a movement or transformation from a particular state to another more desirable or preferable state.

The problem, however, with defining enhancement in terms of improvement, as Harris points out, is that it is impossible to know whether or not a change would in fact ultimately be a change for the better, due to the fact that such knowledge would rely upon an acquaintance with unknowable contextual factors, located in the future (2007:36). In other words, an enhancement which may appear to be wholly desirable and responsible for the increased well-being of individuals in the present or immediate future, may have unforeseen and negative long-term consequences[15].

The precise nature of what would constitute an improvement is also difficult to pinpoint due to the fact that such a conception is context dependent, in terms of the preferences and values of individuals or groups. This point is made by Juengst, who argues that the cases in which we posit certain enhancements as morally dubious are dependent "upon the goals and values of the human activity that provides the scale against which the improvement is measured, rather than on some intrinsic feature of the intervention itself" (1998:31). The transhumanist project, as outlined by Bostrom, appears to take this into consideration, with its emphasis on enhancement as commensurate with the expansion of the range of choices available to the individual, who would then choose the particular capabilities he/she would wish to enhance. In this way, it is clear that transhumanists view the individual as the most competent judge regarding what enhancements he/she would deem desirable or worthy of possessing. Before

[15] This is a subject that has been discussed at great length by Bostrom in various papers, an example of which is the essay *Existential Risk Prevention as Global Priority* (2011). Numerous critics of radical enhancement have also addressed this issue, arguing that one of the likely possibilities of the use of technologies, such as nanotechnology for purposes of enhancement, is the future extinction of humanity.

moving on to the discussion of transhumanism itself however; our examination of the context in which transhumanism has arisen, requires further elucidation in terms of the similarities and differences it bears to general enhancement debates and the ethical implications that follow from these differences.

2.2.3 Situating Transhumanism in the Enhancement Debate

As mentioned above, there is a strong congruity between debates concerning the ethical implications of transhumanism, and those regarding the ethics of "direct genetic interventions"[16] (Buchanan et al, 2009:6). Both transhumanism and genetic enhancement elicit a great deal of concern with the potential risks they pose, in terms of the possible harmful consequences to those who seek to undergo self-enhancement or are born enhanced[17]. An additional concern, relevant to both, is the issue of potential conflict and inequality between the enhanced and the unenhanced that may arise due to a potential species bifurcation, leading to the risk of subsequent domination or persecution of one species by the other.

Such concerns with the general risks or possible harmful consequences posed by enhancement endeavours, have, not surprisingly, formed the basis upon which most critiques of transhumanism and biomedical enhancement in general have been lodged. However, whilst the transhumanist project shares many similarities with enhancement in general, which allow similar critiques to be lodged against both, if we conduct a deeper investigation, it soon becomes evident that there are a number of important differences between a pro-genetic enhancement and a transhumanist position, which result in the latter posing decidedly more controversial ethical questions and thus eliciting great philosophical interest and debate. This difference is evident in that it is possible to be both pro-genetic enhancement and pro-

[16] A direct genetic intervention refers to either the insertion of specific genes into "somatic (body tissue) cells or germline cells (gametes – sperms or eggs – or embryos); and gene surgery, in which abnormal or undesirable genes are "switched off" – that is, deactivated so that they no longer produce their distinctive effects" (Buchanan et al, 2009:6). The insertion of genes into germline cells, or the modification of the germline in general, will result in the passing on of such changes inter-generationally; and thus, such modifications and their ethical implications have been the subject of much debate within bioethics. Modifications to somatic or stem-line cells are not passed on to any subsequent offspring, and therefore, affect only the actual organism upon which the intervention was performed.

[17] The former would refer to enhancement of the stem-line; whereas the latter, concerning those born with enhancements, refers to germline modifications

transhumanism; but there are many unequivocal supporters of genetic enhancement who do not support, and who in fact vehemently oppose, transhumanism.

Firstly, transhumanism seeks to radically enhance the capabilities of human beings to levels far above what is currently possible, not only biologically through genetic manipulation, but also by utilising specific technologies, which will be discussed in Chapter 3. Secondly, transhumanism's ultimate goal is the possibility of radical self-transformation, whereas genetic enhancement is largely concerned with the potential transformation of future generations. The possibility of genetically enhancing one's progeny, thus, brings ethical issues such as procreative autonomy versus the autonomy of potential offspring and therefore future generations subject to genetic enhancement, to the forefront of the debate.

Thirdly, advocates of genetic enhancement argue, amongst other things, for the view that any changes that may come about as a result of the manipulation and enhancement of the human genome would not result in a change to our humanity or classification as members of the biological category Homo sapiens. In other words, to bioconservative charges that genetic enhancements may potentially leave us no longer human, great efforts are made by those who support the possibility of genetic enhancement, to show why this would not be the case. Certain prominent transhumanists such as Bostrom, however, do not shy away from, and in fact seem to welcome, the possibility that the transformation of human beings may be so utterly radical as to render them no longer human[18]. Lastly, whilst transhumanism does not represent a strictly uniform position, it can nevertheless be thought of as a coherent movement or project as evidenced by the presence of documents such as the *Transhumanist FAQ* and the *Transhumanist Declaration*. In this regard, transhumanism is guided by clear goals towards which transhumanists actively strive; whereas the same cannot, of course, be said of those who advocate genetic enhancements.

Thus, on the continuum of positions regarding the perception of the desirability of the project of human enhancement in general, we can place the bioconservative position on the extreme left of the spectrum. As previously stated; bioconservatives would support most therapeutic

[18] This could potentially occur through the transformation of human beings into bio-mechanical posthumans or beings with superintelligence that could further transform themselves into entities, which are incomprehensible to our present cognitive capacities. There is, however, not uniform consensus within the ranks of transhumanists regarding whether or not radical enhancements would in fact transform us into beings that could no longer be defined as human.

interventions for genetic diseases and illnesses, but are opposed to any form of what they would view as biomedical or genetic enhancement. We then move through to those who would consider themselves anti-anti-enhancement[19]. Such individuals may support the exploration of certain enhancements as potentially worthwhile, but are in general opposed to untrammelled enhancement per se. Further along, we have those who view themselves as pro-enhancement in that they would potentially support most proposed transformations which would still fall within the range of present human capabilities. Such individuals would not however, necessarily support radical enhancement or what could potentially be viewed as species change. Finally, on the extreme right of the continuum we find the transhumanist position which advocates the radical enhancement of human beings.

Transhumanism may therefore be thought of as falling predominantly within the parameters of the debate concerning the ethics of genetic enhancement due to its sharing of certain commonalities with the latter; but its position as a form of radical enhancement also results in significant differences, thus necessitating discussion in its own right. It is to the task of defining transhumanism that we shall now turn; firstly addressing the nature of the movement in terms of its foundational aim, namely, the improvement of the human condition. Transhumanists propose improvements in the areas of human healthspan, cognition and emotion, as the means through which this foundational aim will be achieved. This will be followed by a brief discussion of the fundamental values of transhumanism as strongly influenced by the Enlightenment ideals of rationality and autonomy.

2.3 What is Transhumanism?

2.3.1 Initial Problems

In attempting to define the term transhumanism we are faced with our first challenge, due to the multifarious nature of the movement. As mentioned above, transhumanism proposes the future use of various Genetic, Nano and Robotic/AI (GNR) technologies, the nature of which will be elucidated in detail in Chapter 3, as a means of enhancing the individual. As a result,

[19] The distinction between anti-enhancement and anti-anti-enhancement, as opposed to a simple anti/pro position, is viewed as a more useful and relevant notion by Buchanan (2011:13). This distinction takes cognisance of the fact that whilst some individuals may not support all, or most, enhancements; they are opposed to the uniform rejection of enhancement endeavours in *toto*. In other words, such individuals do not advocate either a pro or anti-enhancement position, but rather espouse a more nuanced position, namely, an anti-anti-enhancement position.

any definition or explication of the aims of transhumanism that may be offered is generally contingent upon the particular area of focus - whether this is genetic, nano or robotics/AI technology - and the mechanisms proposed as a means of achieving this. In other words, those who focus, for example, on life extension through the use of genetic technologies, would approach their understanding of transhumanism from a different paradigm to those advocating life extension through the development of nanotechnology, artificial intelligence (AI) or the possible computational uploading of the human mind. Furthermore, as mentioned in the previous section, there are divisions within the ranks of transhumanists regarding the question of what would be the resultant ontological status of those who utilise GNR technologies to enhance and thus transform themselves. Certain transhumanists view the possibility that potential enhancements may render their recipients no longer human as unproblematic[20]; whereas others posit that any transformations wrought by procedures of enhancement would be compatible with our retaining a recognisable human form or remaining 'human' in general[21].

The above examples thus serve to illustrate that in discussing and attempting to define transhumanism it must be understood that we are dealing with a movement that defies straightforward definition. Nevertheless, with this in mind, a particularly useful definition of transhumanism quoted most extensively in the literature, and around which there appears to be strong consensus, is Nick Bostrom's explication of it, as discussed in the Transhumanist FAQ (2003a).

2.3.2 Defining Transhumanism

There appears to be a degree of unanimity between Bostrom, and other prominent transhumanist thinkers regarding the evolutionary development of humanity as a species. The majority of transhumanist thinkers view the process of evolution as something with which humanity ought to keenly occupy itself and actively direct, utilising all available means; rather than leaving future human development to what is perceived as the indifferent processes of natural selection. Transhumanists are of the view that humanity in its present guise occupies a fleeting juncture, one that is in its nascent stages, rather than being located at

[20] Both Nick Bostrom and James Hughes are of a similar view that the kind of enhancements sought by GNR technologies may result in those who would utilise them, as potentially bearing such scant resemblance to current humanity as to render them no longer human.
[21] Ray Kurzweil, for example, is a prominent exponent of this view.

the pinnacle of its development and potential (Bostrom, 2005b:53). Furthermore, transhumanists view the responsibility of our future development, our lot, so to speak, as lying directly in our own hands, rather than in those of an external power or a reified natural order.

The Transhumanist FAQ offers a definition, which has subsequently received frequent citation, describing transhumanism as:

> [the] intellectual and cultural movement that affirms the possibility and desirability of fundamentally improving the human condition through applied reason, especially by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical, and psychological capacities (2003a:4).

The Transhumanist Declaration (1998) affirms the role of science and technology as paramount to the possibility of the future development and improvement of humanity, to levels far surpassing current capacities. Furthermore, it states that transhumanism is compelled by "the possibility of broadening human potential by overcoming aging, cognitive shortcomings, involuntary suffering, and our confinement to planet earth" (2005a:26).

In various essays on the subject, Bostrom further explicates transhumanism as a transitional stage between humanity as we currently recognise it and a future 'posthuman' form whereby through the use of GNR technologies it will be possible to acquire one or more 'posthuman capacity' (2008:107). The process of acquiring such capacities would thus be the transhumanist phase; whereby various technologies would initiate the transformation of the individual into a posthuman form. In other words, the mechanisms of transhumanism would be the means of achieving posthumanity. Thus, it is evident that transhumanism implies posthumanism as the one leads to the other, and the endorsement of the former is congruent with that of the latter. The areas of functioning which transhumanists aim to radically enhance, as well as the values which inform these aims, will be discussed shortly. However, the fundamental transhumanist aim to improve the human condition must first be discussed.

2.4 Transhumanist Aims

2.4.1 The Improvement of the Human Condition

In Section 2.3.2, transhumanism was defined as the movement which aims at "fundamentally improving the human condition" (Bostrom, 2003a:4). Such an aim could be assigned to a plethora of movements and ideologies and is thus rather nebulous, requiring further explication. In particular, it is important to clarify what is meant by the term 'improvement', as utilised in the context of transhumanism.

In the Transhumanism FAQ, Bostrom claims that "an improvement to the human condition is a change that gives increased opportunity for individuals to shape themselves and their lives according to their informed wishes" (ibid. 31). Transhumanists are of the view that informed individuals in full possession of the capacities of reason are fully capable of adjudicating what would constitute an improvement to their own lives and thus the choice regarding this, ought to be placed entirely in the hands of the individual. Therefore, the necessity of providing the technological means through which this ideal may be achieved is a major impetus to transhumanists; hence the variety of GNR technologies which constitute transhumanist areas of interest.

Posthuman capacities, the attainment of which are the ultimate goal of transhumanist endeavours, are located in the areas of *healthspan*, *cognition* and *emotion* (Bostrom, 2008:107). Improvements in these areas would aim to produce capacities that would substantially surpass "the maximum attainable by any current human being without recourse to new technological means" (ibid.). This desire to improve human capacities beyond the level of what is currently attainable or even imaginable, is therefore one of the pivotal characteristics which distinguishes transhumanism from other enhancement endeavours. It is thus necessary to discuss the nature of what improvements in the areas of healthspan, cognition and emotion would entail.

i) Healthspan

Improvements in this area would entail "the capacity to remain fully healthy, active, and productive, both mentally and physically" (Bostrom, 2008:107). Such a desire would appear

uncontroversial in its positing as a seemingly universally shared, contemporary norm. Who would not grasp the opportunity to lead a long and vigorous life, free of the rigours of physiological infirmity and other such maladies? It must be noted, however, that the transhumanist interpretation of what would constitute healthspan is congruent with their aim to extend human capacities to levels greatly surpassing those which are currently possible. Thus, examples of extreme longevity, such as that of Jeanne Calment, the longest living human being in recorded history, who lived for 122 years and 164 days, would by transhumanist standards, represent a life falling far short of what they would aspire to achieve (Jeanne Calment, 2010). In fact, prominent transhumanist thinkers such as de Grey, Kurzweil and of course Bostrom himself, are of the view that our contemporary attitude towards aging and death constitute a deathist attitude (Bostrom, 2003a:37). This refers to our acceptance of the inevitability of our personal mortality; an acceptance which, until the possibility of life extension is afforded by GNR technologies, is necessary in order to reconcile ourselves with our supposedly inescapable fate. Transhumanists such as de Grey are of the view that the possibility of being able to achieve radical life extension, even if this endeavour is not yet realisable, has resulted in the deathist attitude becoming unnecessary and irrational, in that, it deters the direction of the necessary resources and attention away from the quest to cure aging (de Grey, 2008:50).

Transhumanists regard the issue of "saving lives (of those who want to live) [a]s ethically important" (Bostrom, 2003a:31); and this includes the prevention of death arising from the diseases of old age. In this regard, de Grey has developed a novel strategy in the field of age-related medicine, namely SENS (Strategies for Engineered Negligible Senescence)[22]. In his extensive work in the field of senescence, de Grey has isolated seven causes of damage related to the aging process (Agar, 2010). In the SENS Statement of Principle, de Grey cites the figure of "90% of all deaths in the developed world [as resulting from] causes that only rarely kill young adults…[such as] Alzheimer's, cardiovascular disease, type 2 diabetes, and most cancers" (2011:67). If a means of isolating and treating the causes of such age-related diseases at the cellular level at which they occur could be developed, this would amount to the

[22]The SENS website run by de Grey, describes this path as "approach[ing] the diseases and disabilities of aging from an 'engineering' point of view. Instead of seeking to decipher the code of life and interfere with metabolic processes (the gerontological approach), or waiting until it is effectively too late to treat age-related damage and treating symptoms (the conventional medical, geriatric approach), SENS targets the damage of aging itself, seeking to bring it down to levels below the threshold at which it causes problems" (De Grey, 2010).

first step in the process of a cure for the aging process, and thus the possibility of indefinite life extension. De Grey views the prospect of achieving immortality as unrealistic however; due to the fact that by definition, "Immortality means inability to die, i.e., a certainty of never dying" (in Agar, 2010:86). This would be an impossibility, considering other environmental factors and societal dangers with which the individual is faced on a daily basis De Grey does however, posit a figure of one thousand years as the average life expectancy that could be envisaged by those utilising the relevant technologies once available (in ibid. 87).

This extension of life would only be a worthwhile pursuit if it was accompanied by a concomitant quality of life, characterised by the good health, vigour and mental acuity of youth. Thus, it is healthspan, rather than lifespan, which is the goal of transhumanism. In other words, the ambition is to live far longer than is currently possible or imaginable, but with full possession of one's physical and cognitive faculties, thus maximising quality of life. The transhumanist preoccupation with life extension and the claim that it is driven by a desire for immortality, feature prevalently in the arguments of Kass and Fukuyama which will be discussed in Chapter 5.

ii) Cognition

Bostrom discusses improvements in cognition as referring to the improvement of:

> general intellectual capacities, such as memory, deductive and analogical reasoning, and attention, as well as special faculties such as the capacity to understand and appreciate music, humour, eroticism, narration, spirituality, mathematics, etc (2008:107).

In comparison to what could be achieved through the GNR technologies proposed by transhumanism, Bostrom and other transhumanist thinkers are of the view that the limitations placed upon our unenhanced intellects constrain our potential in a similar manner to those limitations experienced by primates such as chimpanzees (2005b:54). Utilising GNR technologies would thus, according to transhumanists, amount to the unlocking of our potential through access to diverse and unimaginable modes of existence and being. Furthermore, transhumanists view the quest to improve our intellectual capabilities as an extension of the value we already place upon the enhancement of our cognitive capacities. This is evidenced by the high importance invested in self-improvement through, to name but a

few examples, education and the myriad ways in which we strive to aid concentration and memory, thus maximising intellectual prowess (Bostrom & Roache, 2008:123).

Because the transhumanist agenda is concerned with radical enhancement, it is not aimed at elevating us to levels of mere Einsteinian intellect. Transhumanists aim rather to surpass such ambitions, having as their goal the creation of superintelligence. The strong emphasis placed by transhumanism on autonomy however, would entail the freedom of the individual to choose his/her level of intellect, supposedly resulting in a diversity of intelligence levels. However as posited by Bostrom, the presence of superintelligence and the resultant capacities it could afford, may ultimately place those in possession of such abilities in a position as distantiated from current human levels of functioning, as current human levels of functioning bear to primate capabilities . In this regard it is questionable to assume that the freedom to choose not to enhance one's intellectual capacities would in fact constitute a genuine option.

iii) Emotion

The third area which is of great interest to transhumanists is the realm of human emotive functioning; referring to "the capacity to enjoy life and to respond with appropriate affect to life situations and other people" (Bostrom, 2008:108). The particular target of transhumanism would be the role played by genetics in determining our predisposition to levels of happiness or well-being in general, referring to traits of temperament such as "energy, will-power, and ability to shape our own character in accordance with our ideals" (Bostrom, 2005b:56).

Discussions focussing on transhumanism in terms of emotive enhancements, particularly those which oppose the position, contain multiple references to what may be described as *The Brave New World Risk*[23] (Kass, 2002; Fukuyama, 2002a). This risk refers to the possibility that the type of enhancement of emotional affect proposed by transhumanism, may result in humanity being reduced to a state of docile apathy. The argument here is that the resultant state of happiness would not arise on account of individuals having truly striven for the good life. Any sense of fulfilment or happiness experienced by individuals would thus be a false happiness which would arise entirely due to the use of GNR technologies. Bostrom does concede that defining what would count as an enhancement of our emotive functioning poses

[23] Referring, of course, to Aldous Huxley's dystopic novel, *Brave New World* (1932), described in the appendix on page 179.

more of a challenge than the task of identifying the nature of enhancements in the areas of healthspan and cognition (2008:116).

The challenge of discussing the transhumanist project of the enhancement of emotive capacities lies in how the nature of posthuman emotional well-being could be imagined, let alone stipulated. It is relatively easy to imagine the manner in which cognitive or physical enhancements could be manifested, in terms of degrees of gradual and ever increasing improvement. It is a different matter, however, to conceive of ever increasing degrees of emotional functioning and happiness beyond a certain threshold. According to Bostrom however, it is relatively clear what would constitute the enhancement of current human emotional capacities. One need only investigate the realms in which individuals currently practice self-improvement in order to assuage emotions that are perceived to pose a threat to their personal well-being or result in undesirable consequences for them (ibid.). The predominant difficulty in discussing posthuman emotional capacities lies in the fact that we must not necessarily think in terms of improving upon existing human emotional capacities. This is because what may possibly be held to be valuable in posthuman terms, may be utterly alien, in comparison with what we currently value as human beings. In this regard, Bostrom has drawn upon the dispositional theory of value of David Lewis. Lewis's theory states that "something of the appropriate category is a value if and only if we would be disposed, under ideal conditions, to value it" (1989:116). In this case, the phrase 'ideal conditions', refers to "imaginative acquaintance with" (ibid. 121). In other words, as Bostrom succinctly explains:

> something is a value for you if and only if you would want to want it if you were perfectly acquainted with it and you were thinking and deliberating as clearly as possible about it (2005b:57).

What this means for the enhancement of human emotional capacities, is that, whilst there may be a coinciding of emotive capacities that would be valued both by human beings and posthumans, it must be borne in mind that there may be valued emotional dispositions or affects that lie outside the realm of what is currently possible for us to experience, due to the constraints of our present physiology. The transhumanist endeavour requires an acknowledgement of such a possibility as a route that ought to be explored in terms of the enhancement of emotional capacities. The transhumanist goal to improve the human condition through radical enhancements in the areas of healthspan, cognition and emotional functioning is inextricably linked with the value the movement places upon autonomy and

rationality as defining human qualities. This chapter will therefore conclude with a brief discussion of these fundamental values.

2.5 Transhumanist Values

2.5.1 Rationality

Transhumanism, as discussed in Section 2.2.1, is rooted in Enlightenment ideals; and accordingly, invests inordinate value in the individual as an autonomous rational agent, capable of shaping both itself and its surroundings. This is evident in the way the movement is defined by prominent transhumanists, such as the sociologist James Hughes, who describes it as "the idea that we should use technology to transcend the limitations of our bodies and brains" (2006:70). Technology itself is a direct product of human rationality, and thus, transhumanism may also be described as the posit that human rationality should be utilised to overcome the limitations of the human body and brain. In fact, such a description has frequently been offered as the definitive understanding of the term Enlightenment itself. An example of this is the *Penguin Dictionary of Philosophy* definition of the Enlightenment as the "belief in the perfectibility of man and in progress, expected to be achieved by a self-reliant use of reason" (Mautner, 2005:187). Furthermore, the transhumanist tendency to view the physical form as an inhibiting entity which may accordingly be overcome, either through self-transformation in terms of the computational uploading of the human mind, or the pursuit of an indefinitely extended lifespan, through negligible senescence, is a direct extension of Cartesian dualism, one of the cornerstones of Enlightenment philosophy. Thus, transhumanism, with its keen emphasis on the use of technology to transform and improve the human condition and particularly in its quest to create superintelligence, which would amount to a form of extreme or hyper-rationality, is in a sense, an hypostatisation or a radicalisation of Enlightenment ideals.

The value placed upon the use of rationality as a mechanism of self-transformation by transhumanism is inextricably linked, and coterminous, with its emphasis on the autonomy of the individual who is viewed as capable of making informed choices regarding the decision of whether or not to enhance through the use of GNR technologies. According to transhumanist tenets, the autonomy of the individual is the grounds upon which the right to utilise GNR technologies is founded. This right must be ensured; irrespective of whether or not any

changes effected would result in the individual no longer being definitively human[24]. Therefore, we shall now examine this other pivotal transhumanist value, one which also strongly reflects its Enlightenment origins.

2.5.2 Autonomy

That the value placed by transhumanists on the principle of autonomy is immense; is clearly evident on the first page of the Transhumanism FAQ. Bostrom postulates that:

> It is not our human shape or the details of our current human biology that define what is valuable about us, but rather our aspirations and ideals, our experiences, and the kinds of lives we lead. To a transhumanist, progress occurs when more people become more able to shape themselves, their lives, and the ways they relate to others, in accordance with their own deepest values. Transhumanists place a high value on autonomy: the ability and right of individuals to plan and choose their own lives. Some people may of course, for any number of reasons, choose to forgo the opportunity to use technology to improve themselves. Transhumanists seek to create a world in which autonomous individuals may choose to remain unenhanced or choose to be enhanced and in which these choices will be respected (2003a:4).

From this quote, it is clear that transhumanism situates the freely acting agent at the centre of its vision and views the inherent, inalienable autonomy of the individual as the justification by which transhumanist aims ought to be permitted. The recognition of the autonomy of individuals, coupled with a belief in the ability of human rationality to equip individuals to make the best choices regarding what would constitute an improvement to their lives, thus, serves as the means of bolstering the fundamental aim of transhumanism, namely, the opportunity through the use of GNR technologies to greatly expand the range of choices available to all individuals, and thus, to improve the human condition.

2.6 Conclusion

Bioconservative critics of transhumanism tend to engage predominantly with the specific nature of the GNR technologies and the manner in which these technologies would transform the human body. In other words, it is the possible changes to the human being, and thus to humanity as a whole, viewed as intrinsically wrong and morally suspect, which form the primary locus of interest for critics of transhumanism. This concern which lies at the heart of

[24] Of course, the claim that an individual had transformed themselves to such an extent that they could no longer be classified as human, rests upon an assumption that there exists definitive consensus regarding what qualities one must possess in order to qualify as a member of the human species.

human dignity arguments, is the focus of this thesis, and is thus deemed highly relevant. It must be pointed out, however, that there is an absence of adequate engagement with other pertinent concerns such as the nature of the fundamental transhumanist aim and the values which underpin it. In other words, there is a lack of critical engagement with the transhumanist assumption that the enhancements they propose are in fact the most effective means of expanding the range of choice available to all, and thus, of improving the capacity for well-being in general. Furthermore, there is little engagement with the transhumanist faith in human rationality and autonomy as the justification for its project of radical enhancement. This is perhaps due to the fact that western liberal democracy is associated with an equally vehement faith in the importance of such values.

Rather than questioning the efficacy of these assumptions which underpin transhumanist thought, there has been a tendency to engage predominantly with the possible outcomes of use of the GNR technologies. Such discussions, which focus upon the possible consequences associated with the realisation of transhumanist aims, are, of course, a necessary component of any investigation which aims to elucidate the moral status of transhumanism itself. However, they are, by definition, bound to be speculative in nature and are frequently sensationalist in their predictions. This tends to result in a lack of attention paid to other equally relevant, but less 'glamorous', concerns related to transhumanism, such as the values which inform the movement. For the purposes of this thesis however, it is necessary to focus on such concerns, and in particular, the role of autonomy in transhumanist discourse, due to its inextricable connection with the concept of human dignity. This relationship between autonomy and human dignity will therefore be discussed in further detail in Chapter 4.

This chapter has contextualised transhumanism not only historically in terms of its Enlightenment origins and the key players who have exerted an influence upon its aims, but also within the context of enhancement in general. In order to define the term 'enhancement' itself, the treatment/enhancement distinction, as well as key concepts such as normal species functioning and disease, were discussed. Problems associated with this distinction were also investigated. These concerns are relevant in adjudicating the consistency, and thus, the legitimacy of arguments which support the use of interventions to restore species typical functioning, whilst condemning these same interventions, if employed as mechanisms of enhancement. Transhumanism was then defined with reference to its aims and the fundamental values with which it is informed. However, in order to truly grasp the nature of

transhumanism and the reactions it elicits from its critics, it is necessary to fully investigate the GNR technologies through which it hopes to achieve its aims. This will be the subject of the following chapter.

3 The Genetic, Nano and Robotic (GNR) Technologies of Transhumanism

3.1 Introduction

As discussed in the previous chapter, the transhumanist project is concerned with the task of vastly improving human functioning in the areas of healthspan, cognition and emotion. These improvements are posited by transhumanists as the means to achieving their primary aim; which is the extension of the range of available choices, thus enabling individuals to pursue "hitherto inaccessible realms of value" (Bostrom, 2003b:499). The particular skills or capabilities which are pursued will depend upon the preferences of the individual. However, in order to enable the provision of such idiosyncratic choices in the first place, transhumanism is dedicated towards the overcoming of constraints posed by certain aspects of the human condition which are viewed as impeding human flourishing in general.

The Transhumanist Declaration (1998), commences with a statement regarding the integral role that science and technology will play in the future of humanity, in terms of "the possibility of broadening human potential by overcoming aging, cognitive shortcomings, involuntary suffering, and our confinement to planet earth" (Bostrom, 2005a:26). Such overarching aims are the ultimate or long-term goals which motivate transhumanist endeavours. The movement is, however, also occupied with more feasible or short-term goals, such as the "use of techniques that may be developed to assist memory, concentration, and mental energy; life extension therapies; reproductive choice technologies; cryonics procedures; and many other possible human modification and enhancement technologies" (ibid. 26-27).

As discussed in the previous chapter, some of these aims are congruent with the goals of any endeavour concerned with the development or improvement of the individual. However, the kind of enhancements envisaged by transhumanists, may be distinguished from general improvement agendas which advocate the use of so-called 'low tech' mechanisms of improvement, examples of which would include "education, philosophical contemplation [and] moral self-scrutiny" (Bostrom, 2003b:499). Transhumanists do, of course, acknowledge the value of such methods of improvement; however, their aim to utterly

transform and improve the human condition, necessitates exceedingly more radical mechanisms. The means to achieving these aims, and thus the key to the next phase in what many transhumanists describe as the self-directed evolution of the human being, are posited by transhumanists as lying unequivocally in the development and utilisation of Genetic, Nano and Robotics/AI technologies, namely, the GNR technologies,.

Accordingly, transhumanists are generally occupied with research in these areas, as well as with the task of rallying for the funding of research which will enable the development of GNR technologies. Transhumanist thinkers, such as Bostrom, approach this task indirectly through the elucidation of the ethical issues associated with the use of such technologies which may assist in dispelling the reservations which would hinder the allocation of funds, and thus, the development of these technologies.

The importance of an in-depth discussion of the GNR technologies with which transhumanists are engaged, cannot be over-emphasised; as it is the very nature of these technologies, and the way in which they would be utilised to transform the human body, and thus, the human condition, which lends transhumanism its distinct and highly controversial character. The projected results of the use of GNR technologies on the human body have elicited a reaction, most typically from bioconservative circles, known as the "Yuck factor" or "The Wisdom of Repugnance"[25] (Kass, 1997). The term wisdom of repugnance, refers to the supposedly intuitive revulsion experienced by most individuals towards practices such as human cloning. This sense of repulsion is in turn viewed as "the emotional expression of deep wisdom, beyond reason's power [to] fully articulate it" (Kass: 1997:20), and is prevalently utilised as a popular bioconservative argument or admonishment, against the use of genetic enhancement in general. This assertion will be discussed in Chapter 5, in terms of how it pervades the arguments of those with a bioconservative agenda.

In this regard, it is the very character of the GNR technologies which seems to elicit feelings of moral outrage and condemnation on the part of the critics of transhumanism, thus necessitating their discussion. Furthermore, it is the inextricable connection between

[25] This term was formulated by Leon Kass, after an essay of the same name. Kass served as chairman of the President's Council for Bioethics from 2001-2005 in the US, predominantly during the Bush administration. He was thus instrumental in influencing the decision made by President Bush in 2001, to severely limit the public funding of existing stem cell research, as well as the decision in 2006, to veto a bill which would have enabled the funding of new research utilising the stem cells of embryos (Sandel, 2007:102; Green, 2007:3).

transhumanist aims and their realisation through the use of GNR technologies, which forms the basis of arguments citing transhumanism as an affront to human dignity; with which the second half of this thesis will be occupied. This chapter will thus proceed with a discussion of the law of accelerating returns, which has been utilised by scientists as well as prominent transhumanists, most notably Ray Kurzweil, as a means of predicting a time frame for the achievement of the GNR technologies. In addition, Kurzweil's interpretation of the notion of a *singularity* of technological progress, which may be deduced directly from the implications of the law of accelerating returns and the creation of superintelligence, will be discussed. The nature of GNR technologies will then be explored in a discussion, addressing each area in turn. The chapter will then conclude with an investigation of the way in which the GNR technologies reflect the primary objectives which lie at the heart of transhumanism, namely, the striving for, not only an improved or enhanced existence, but for a prolonged or immortal existence. Such a possibility is envisaged by transhumanists as achievable solely through the transformation of human beings into biomechanical entities and ultimately computational entities.

3.2 The Law of Accelerating Returns

As mentioned in Chapter 2, the technologist and prominent transhumanist Ray Kurzweil is currently occupied with the development of technologies aimed at achieving the radical enhancements propounded by transhumanism. It is not only the precise nature or mechanics of Kurzweil's work in Artificial Intelligence (AI) that warrants discussion, but also his posits concerning the extreme likelihood of the achievement of these technologies, and the time spans predicting their attainment, which are of great interest. Kurzweil's work in the latter regard is important as it provides a great deal of credibility to the project of transhumanism, in terms of the fact that the aims of the movement are shown to be wholly feasible, when taking into account evidence extrapolated from the general rate of growth of past technological progress[26].

[26] In this regard, Kurzweil's work is partly responsible for the rapidly growing engagement with transhumanism, as evidenced by the proliferation of literature on the subject, which has appeared in the last decade. Whilst the aims of transhumanism rely upon the development of technologies, most of which are not yet possible, the achievement of these technologies is portrayed by Kurzweil as being inevitable, if the trajectory of past technological advancements is a sound indicator of future endeavours. Thus, transhumanism is not merely the subject of science-fiction; and it would be imprudent to view it in such terms, if this results in a lack of adequate engagement with the ethical implications regarding the transformations that the movement aims to achieve.

Kurzweil has engaged extensively with what he has termed *The law of accelerating returns;* which is based upon his interpretation of *Moore's Law* (1965). The pivotal notion here, concerns the exponential growth of technology, particularly, in terms of how this exponential growth is predicted to result in a future point, in which a singularity of progress will occur as an actual predicted event in the future. In order to fully comprehend Kurzweil's views on the future trajectory of technological progress, and thus his assurance of the possibility of the realisation of transhumanist aims, it is necessary to first briefly elucidate Moore's Law.

3.2.1 Moore's Law

Moore's Law is based upon observations and predictions posited by Gordon Moore, an electronics engineer and co-founder of Intel, in his essay entitled *Cramming more components onto integrated circuits* (1965). The essay discusses the future of computing as lying in the development of integrated circuits, otherwise known as microchips. In addition, Moore posits the development of integrated circuits as key to the possibility of developing particular technologies such as home computers and "personal portable communications equipment" (1965:114). Success in this regard has, of course, been subsequently achieved; the benefits of which are now enjoyed by most, with ever growing members of the world's population able to utilise these technologies. What is of importance regarding Moore's then aspirant predictions of future computational capabilities, however, is not so much the fact that the particular technologies posited have been achieved, but rather, the law of technological progress that he deduced from his observations of the development of integrated circuits.

Moore's law states that the number of transistors that may be fitted onto an integrated circuit doubles every two years[27]. Integrated circuits, which are comprised of transistors, are responsible for computational speed, or, the number of calculations per second that a computer is able to perform. It is thus clear that a doubling in the number of transistors would result in a doubling in computational power. This doubling of transistors occurs as a result of the inexorable move towards miniaturisation which aims at the "inclu[sion of] increasingly complex electronic functions in limited space with minimum weight" (ibid.). The most important observation of this law is that this doubling or technological progress occurs

[27] Moore's predictions, including his prediction that this doubling would continue for at least the next ten years, were correct. The figure was later amended to a doubling occurring every eighteen months. In 2002, the 27th doubling occurred in the precise time frame predicted, as the number of transistors able to be fitted onto a computer chip reached a total of one billion (Garreau, 2005:49).

exponentially rather than linearly. Exponential growth refers to progress that doubles with each progression forward. An example of an exponential progression is: 2, 4, 8, 16, 32, 64, 128, 256 etc. Exponential progress is characterised by the fact that in its early stages, growth appears to proceed slowly, or on a par with a linear progression. An example of a linear progression would be: 2, 4, 6, 8, 10, 12, 14, 16 etc. Note here, that there is little noticeable difference between the first three units of the above progressions; but, whilst the second progression requires eight steps to reach sixteen, the first progression reaches sixteen after four steps. As an exponential progression moves forward, the rate of progress becomes vastly larger and more noticeable[28].

Kurzweil has taken the insights of Moore's law beyond the realm of integrated circuits and posits that virtually all technologies follow a path of exponential growth. There are innumerable examples, such as "the improvement of communications technologies, genome sequencing, magnetic data storage, nanotechnology, and internet bandwidth" (Agar, 2010:37). Furthermore, Kurzweil argues that exponential growth is also evident in non-technological realms. In fact, he posits that any activity or endeavour characterised by progression and ability to adapt or develop, is subject to exponential progress. Examples range from the growth of railroads and the economy, to the evolution of humanity (Kurzweil, 2001a)[29]. To adequately elucidate how it is that Kurzweil posits the technological advancements that will enable the realisation of transhumanist aims will not only be possible, but will actually be

[28] Kurzweil provides an interesting example of the vast figures one encounters in an exponential progression with his story of the inventor of chess and the emperor of China. Upon seeking to reward the inventor of chess for the game he so enjoyed, the emperor was asked by the inventor for one grain of rice, which would be doubled per square of the chessboard. The request was granted due to its seemingly reasonable nature; the first eight blocks equalling only 128 grains of rice. However, after 16 blocks, the figure reaches 32 768, and after 24 blocks, it stands at 8 388 608. By the time all 64 blocks of the board have been included in the progression, the figure would stand at eighteen million trillion grains of rice. As Kurzweil explains, "at ten grains of rice per square inch, this requires rice fields covering twice the surface area of the Earth, oceans included" (2001a:5).

[29] Kurzweil discusses the exponential growth evident in the evolution of humanity, a theme which is further elucidated by Garreau (2005:58). The duration of the time from when the earth was formed out of gaseous particles into solid matter until the first multicellular organisms developed, was roughly 4 billion years. Once this had occurred, the period in which these organisms developed into the earliest mammals was approximately 400 million years. The period of the development of these initial mammals into the earliest primates was more or less 150 million years; and from the latter into early hominids, 30 million years. Thereafter, the period of development of hominids who walked on all fours to upright hominids, was roughly 16 million years. From upright hominids to the first documented evidence of intelligence, as evidenced by paintings discovered on the walls of caves in Spain, the period was 4 million years. After that, progress speeds up considerably. It took roughly 10 000 years from the period in which the cave art occurred until the earliest recorded fixed settlements of habitation. The period from the establishment of these settlements to the first documented evidence of writing was 4000 years; after which, as Garreau points, out "biological evolution was trumped by cultural evolution (ibid. 58).

achieved within the next century, it is necessary to discuss the manner in which he generalises Moore's law.

3.2.2 Kurzweil's Law of Acceleration

Kurzweil's utilisation of Moore's law has produced many correct predictions. In the 1980s, he predicted the year in which computers would be able to surpass the abilities of the world's top ranking chess players[30]. This event had major implications in the field of AI which is dedicated towards the task of understanding the phenomena and mechanisms of human consciousness and intelligence, in order that it may be duplicated in machines and vastly improved upon. In addition, in the same decade, Kurzweil predicted the massive growth in the first decade of the twenty first century of the internet, which has subsequently been achieved; as well as the fact that the internet would come to be accessed predominantly through wireless facilities. In fact, the number of successful predictions that have been made by Kurzweil are such, that they prompted the founder of Microsoft, Bill Gates, to describe Kurzweil as "the best person [he knows] at predicting the future of artificial intelligence" (Gates in Agar, 2010:36). From this, it is clear that Kurzweil's predictions regarding the possibility of the successful realisation of the technologies required to achieve transhumanist aims should be taken seriously[31].

As mentioned above, Kurzweil has utilised Moore's law in order to explain and predict past and future technological progress in general, rather than merely restricting the application of the law to integrated circuits and thus electronics. Because technological progress is posited by Kurzweil as occurring exponentially rather than in a linear fashion, there is an impression of developments in technology as having sped up and occurring over a shorter period of time. This apparent speed-up is especially baffling to many, because the predominant view of technological progress held by most accords with what Kurzweil describes as the "intuitive

[30] Kurzweil's prediction stated that this would occur by 1998. The actual victory occurred in 1997, when IBMs supercomputer, Deep Blue, was able to win against top ranked chess player Garry Kasparov (Predications made by Ray Kurzweil, 2007).

[31] Kurzweil's credentials, in general, are impressive, and his awards too prolific to list in their entirety. He received the 1999 National Medal of Technology, which is the highest honour awarded to an individual by the President of the United States, for the development of new technologies. He was inducted into the U.S. Patent Office's National Inventors Hall of Fame in 2002, for the invention of his reading machine. This device scans written material and translates it into spoken format and vice versa, to enable blind persons access to the written word, without the need for Braille. In 1998, Kurzweil was named inventor of the year by MIT, and in 2001 he received the Lemelson-MIT prize, for the development of technologies which assist the disabled. In addition to various other awards, he has received eighteen honorary doctorates (Ray Kurzweil, 2012).

linear" view (2001a:1). Predictions of future technological possibilities based upon a linear model of progress will always fall vastly short of the mark as this view assumes that the rate of progress is constant, in terms of the fact that it will continue occurring in accordance with past or current rates of progress.

Kurzweil's book, *The Singularity is Near: When Humans Transcend Biology* (2005b), contains approximately forty graphs, representing a diversity of fields from communications, the internet and brain scanning to biological technologies, all of which evidence exponential progress. In addition, Kurzweil posits that there is a "doubling [of] the paradigm shift rate every decade" (2005a:33). This paradigm shift rate is described by Kurzweil as referring to "the overall rate of technical progress" or "rate of technical innovation (ibid.). In the context of Kurzweil's work, a paradigm refers to a period in which a particular understanding or mechanism is introduced and developed to its maximum capacity, at which time it then makes way for a new technology which may appear wholly different from the previous technology, but is nevertheless built upon it[32]. Kurzweil posits that the development of integrated circuits, and thus Moore's Law itself, represents the fifth paradigm in computational devices. The five paradigms are thus:

> electromechanical computing as used in the 1890 US census, relay-based computing as used to crack Nazi cryptography in the early 1940s, vacuum-tube based computing as used by CBS to predict the election of Dwight Eisenhower in 1952, discrete-transistor-based computing as used in the first space launches in the early 1960s, and finally computing based on integrated circuits, invented in 1958 and applied to mainstream computing from the late 1960s[33] (Kurzweil, 2005a:33).

What is important to note with regards the doubling of paradigm shifts, is that it is not only specific technologies that are growing exponentially, but the rate of exponential progress itself which is growing exponentially. To give an example to illustrate this: progress in computer speed "doubled every three years between 1910 and 1950, doubled every two years between

[32] Kurzweil's use of the term 'paradigm', differs from the prevalent interpretation of the term which was developed by Kuhn in his work *The Structure of Scientific Revolutions* (1962). A paradigm as expounded by Kuhn "consists of the general theoretical assumptions and laws and techniques for their application that the members of a particular scientific community are taught to adopt and sets the standard for the normal way in which inquiry is conducted" (Mautner, 2005:449).

[33] Kurzweil posits that the fifth paradigm will move into the sixth paradigm during the second decade of the twenty first century, once the miniaturization of integrated circuits, in terms of the number of transistors they may contain, reaches its limits. The sixth paradigm will occur when three dimensional microchips become feasible. This will represent a massive paradigm shift, as a three dimensional microchip will more closely approximate the three dimensional organization of the human brain, which affords it much of its powerful organisational abilities (2001a:9). The possibilities of this sixth paradigm shift are already in evidence with innovative technologies that are currently in their nascent stages, such as "optical computing, crystalline computing, DNA computing, and quantumcomputing" (ibid. 10).

1950 and 1966, and is now doubling every year" (Kurzweil, 2001a:9). Thus, paradigms are evolving and giving way to newer paradigms at a faster rate. Simply put, there is exponential growth in the rate of progress of exponential growth itself.

Because the rate of exponential growth itself is growing exponentially, any posits concerning the trajectory of future technologies which are based upon the rate of progress of the past fifty years, or even current levels of progress, will vastly underestimate future possibilities and developments. Utilising the law of acceleration, and the growth rates of 2000, has enabled Kurzweil to explain past technological progress as well as to predict its future trajectory. As Kurzweil elucidates, the rate of growth of technology around 2000, entailed a doubling of power approximately every year. Therefore, at 2000 levels, the entire technological progress of the twentieth century may be equated to twenty years of growth. If we are to utilise year 2000 rates of progress to explain the rate of progress in the first fourteen years of the twenty first century, the progress in this period will equal that of the entire twentieth century. Furthermore, as Kurzweil argues, the twenty first century will not entail a hundred years of progress, but, "we will witness in the order of 20,000 years of progress when measured by the rate of progress in 2000, or about 1000 times that achieved in the 20th century" (2005a:34).

Kurzweil has devoted much attention to discussing the nature of future developments and how these may be achieved. One of his most vehemently reiterated points concerns the prediction that the future evolution of humanity lies in the gradual fusing of biological and non-biological or technological processes within the human body. Kurzweil posits that the GNR technologies which will enable this possibility, will develop and be achieved sequentially in "three great technology revolutions" (ibid.), in the twenty first century. Each of the three areas will form a phase of development, the mastery of which will lead to the next phase. According to Kurzweil, we are currently in the first phase, namely, the G phase, referring to the development of genetic technology. Kurzweil envisages the onset of the second N phase, referring to developments in the field of nanotechnology, as occurring in the 2020s. The onset of the final R phase, referring to the development of robotics and AI, is predicted to occur in the late 2030s and will utterly transform life as we know it. In this phase, Kurzweil predicts, "we will merge with our technology" (ibid. 36). The nature of GNR technologies, and how these may be achieved, will be fully explored below. However, before commencing with this discussion, there is an important notion that is crucial to fully understanding the

implications of the law of accelerating returns and which thus requires elucidation, namely, that of *The Singularity*.

3.2.3 The Singularity

Kurzweil describes the notion of singularity as a term derived from astrophysics; which utilises it to describe the nature of black holes occurring in space-time. In this context, the term refers to a gravitational singularity, a "point of infinite density and energy [which results in] a rupture in the fabric of space-time" (Kurzweil, 2002:145), occurring within a black hole. The term is also utilised in mathematics to refer to an infinite value, such as "the explosion of value that occurs when dividing a constant by a number that gets closer and closer to zero (Kurzweil, 2001a:6). In other words, a singularity in mathematics is a figure which does not behave in a predictable manner or conform to any of the established laws of understanding which one would expect it to.

Singularity, as Kurzweil interprets it, was utilised in a similar manner by the renowned mathematicians John Von Neumann and I.J. Good in the 1950s and 1960s respectively. On the subject of technological progress, Von Neumann argued that the rate at which advancements are made, "gives the appearance of approaching some essential singularity in the history of the race beyond which human affairs, as we know them, could not continue" (Von Neumann in Kurzweil, 2001a:6). I.J. Good posited that the singularity would result from "intelligent machines designing their next generation without human intervention" (in Kurzweil, 2005b:23). The notion was further explored by the mathematician, computer scientist and writer Vernor Vinge in the science-fiction genre, as well as in the field of technological science. Vinge's work in the former area resulted in a novel entitled *Marooned in Realtime* (1986), as well as the presentation of his ideas at a NASA conference. Here, he described singularity "as an impending event resulting primarily from the advent of 'entities with greater than human intelligence'" (Vinge in Kurzweil, 2001a:7).

Whilst possessing differences in application, the various understandings of singularity contain a common theme, namely that of unknowability. The precise nature of a black hole remains a mystery due to the fact that it is not possible to enter one. A mathematical singularity too, is characterised by discontinuity, in that it behaves in a way that is not predictable. This notion of unknowability is essential to the conception of singularity; although Kurzweil differs from

other thinkers regarding the degree of unknowability with which he posits the nature of a singularity is characterised. In discussing the singularity, certain thinkers argue that it is not possible to postulate beyond the absolute rupture that this event would represent. As Bostrom argues, even fundamental physical laws may no longer be applicable in a post-singularity world. Kurzweil posits however, that we "have sufficient powers of abstraction to make meaningful statements about the nature of life after the Singularity" (2005b:29-30).

The belief regarding whether or not it is possible to ascertain, with any accuracy, the nature of the post-singularity world, has important implications regarding how the risks posed by technologies such as AI are perceived. On the one hand, the view that the absolute unknowability of a post-singularity world poses risks that cannot be predicted or planned for, leads to a more conservative attitude towards whether or not these technologies should be pursued in the first place[34]. On the other hand, the position that we are in fact able to discuss and predict to a certain extent, the transformations which would occur post-singularity, correlates with an attitude of support for new technologies. In the latter case, the risks that may be posed by new technologies would be posited as congruent with risks with which we are already confronted by existing technologies, and thus, the challenges in this regard, would be viewed as surmountable.

Kurzweil has assimilated the ideas of these thinkers and further developed the notion of singularity and its implications, as well as predicting the date at which it is likely to occur[35]. He argues that:

> within a few decades, machine intelligence will surpass human intelligence, leading to The Singularity – technological change so rapid and profound it represents a rupture in the fabric of

[34] This position is one held not only by bioconservatives but also by scientists such as Bill Joy. Joy is a computer scientist, and the co-founder of Sun Microsystems, an immensely successful company specialising in computer software. His essay entitled *Why the future doesn't need us* (2000), captured the attention of the proponents of new and developing technologies, due to his technological expertise and success in this area. Furthermore, it was his change from a position of support to one of opposition to the development of particular technologies, such as nanotechnology, due to the extreme risks they pose, that garnered great interest from his colleagues. As mentioned in the previous chapter, Bostrom has also investigated the possibilities of extreme risk posed by particular technologies in his essay entitled *Existential Risk Prevention as the Most Important Task for Humanity* (2011).

[35] In multiple media interviews on the subject, Kurzweil has posited 2045 as the date at which the singularity will occur (Grossman, 2011). The means of creating Superintelligence, and thus the possibility of the singularity, depends upon technology that is currently nowhere near realisation. However, in accordance with the exponential growth described by the law of accelerating returns, new developments and tools in technology will provide the growth required for achieving this possibility. In this way, progress will build upon progress, enabling possibilities that may seem utterly impossible at our present levels of capability, just as many advancements, once deemed impossible, have subsequently been realised and assimilated as mundane.

> human history. The implications include the merger of biological and nonbiological intelligence, immortal software-based humans, and ultra-high levels of intelligence that expand outward in the universe at the speed of light (2001a:1)

3.2.4 Superintelligence

The singularity is the direct result of the implications of exponential progress. In other words, if the rate of exponential progress is itself increasing exponentially, it could be surmised that at some future point, progress will occur so rapidly, that change will appear to occur instantaneously. The speed of progress or change will then be such, that "it will appear to explode into infinity…[and] will rupture our ability to follow it" (Kurzweil, 2001a:6). Transhumanist thinkers in general, posit that the singularity will occur with the creation of superintelligence. The Transhumanist FAQ defines superintelligence as an intellect which "has the capacity to radically outperform the best human brains in practically every field, including scientific creativity, general wisdom, and social skills" (Bostrom, 2003a:12). As mentioned above, superintelligence will in all probability come about due to a fusion between biological and non-biological elements, which will result in a blurring of the boundaries between human and machine.

One of the ways in which this could occur would be through the development of AI; whereby, the areas in which human intelligence currently outperforms computational abilities are fully explicated and then combined with computational abilities which exceed human intelligence, to create an artificial superintelligence. Another possibility would be the gradual upgrading of our cognitive abilities, through neural prosthetic devices capable of elevating our intelligence to a level not possible through purely biological or chemical means. These possibilities are, however, contingent upon acquiring full knowledge of the mechanisms of the human brain, including how consciousness and intelligence 'work', which in turn will require the ability to reverse engineer the brain[36]. For the latter to be possible, major progress in the areas of nanotechnology and AI will have to be made. However, if this goal is achieved, the creation of a superintelligence may be "the last invention that man need ever make" (Good, 1965: 33), as this intelligence would then presumably be able to create further intelligence.

[36] Reverse engineering the brain can be thought of as "mastering the software of intelligence" (Kurzweil, 2001a:23); essentially a process in which the brain has been "fully scanned, analysed, understood and translated into machine analogues" (Garreau, 2005:104). This will be discussed in Section 3.3.3.

As Bostrom points out, the prospect of human-intelligence no longer holding the position of supremacy, or being replaced, or declared obsolete, is a terrifying and unwelcome possibility for many (2003a:13). Bostrom posits that the fusion of biological and non-biological processes that would be required to create superintelligence, would result in the creation of a new posthuman species. He does not view this possibility as problematic, but does acknowledge that those who would opt to remain unenhanced or human, may disagree. Kurzweil on the other hand, would counter that such an intelligence or melding of the biological with the non-biological would nevertheless, be "derivative of biological design" (2001a:7), and would thus remain human in terms of membership of the species *homo sapiens*.

The possibilities afforded by the creation of superintelligence seem infinite, and thus, the character of a world in which such a presence exists is virtually impossible to comprehend with our current capacities. However, it is for this very reason, as mentioned above, that there is great opposition to such an endeavour, due to the possible negative outcomes. Fears ranging from the possibility of the extinction of the human race to its slavery at the hands of superintelligent entities who may possess no regard for beings deemed inferior, are prevalent in the literature engaging with transhumanism. These concerns are voiced not only by bioconservative thinkers, but also recognised by transhumanists. Kurzweil himself acknowledges, not only the risks involved with the development of certain technologies, but also the possibility of limits to exponential growth (2005a:34). Limits could occur either due to an inability of the environment to support further growth, or due to unforeseen external factors[37].

These concerns aside, the pertinence of the law of acceleration lies not so much in its predictive ability regarding the exact time frames in which developing technologies will be achieved, but rather, in its power to illustrate the inevitability of their realisation. If it is conceded that the law of acceleration does in fact accord with the path that technological

[37] An example of such a scenario would be cancerous cell division which grows exponentially, but is halted either as a result of the death of the host, or due to external factors such as a successful regime of treatment. Another good example which combines environmental limits and unforeseen factors, is that of the exponential growth of rabbits in Australia. Twenty four rabbits were imported to Australia in 1859 from England and released into the wild. Approximately six years later, the number of rabbits had grown to 22 million, and by the 1930s, the number had reached 750 million. This growth subsided due to the unsustainably vast amount of vegetation, and thus food required to sustain the prolific numbers of rabbits. Furthermore, the rabbit population later decreased by 90%, due to the introduction of the deadly (to rabbits) disease, Myxomatosis (Bramblet, 2004).

progress has assumed, it would seem that despite reservations regarding risks, technological progress is driven forward by an inevitable exponential momentum, over which we as individuals have little influence. Thus, the importance of establishing coherent ethical guidelines regarding developing technologies becomes paramount; and the dismissal or refusal to engage with the aims of movements such as transhumanism becomes irresponsible, and is thus an ethical issue itself. In accordance with Kurzweil's predictions in this regard, the first technology revolution, and one with which we are currently occupied, is the genetic revolution. It is therefore with this area that the ensuing discussion of GNR technologies will commence.

3.3 Genetic, Nano and Robotic (GNR) Technologies

3.3.1 Genetic Technologies

The first branch of the GNR technologies refers to genetic engineering, which includes a wide variety of technologies, ranging from gene therapy, to stem cell research and therapeutic cloning. For the sake of clarity, it is necessary to define the technical terms which are relevant to the discussion.

i) Defining Terms

There are a variety of ways of defining the term gene. Murphy defines a gene as "the protein unit that direct[s] an organism's biological processes and thereby its traits" (1998: 198). In other words, genes may be thought of as a unit containing the information which is the blueprint or formula responsible for the form an organism will take. Every aspect of an organism, in terms of behaviour, physical characteristics and appearance, as well as temperamental and psychological traits, is influenced in the first place by its genetic constitution. Dawkins defines a gene somewhat differently, as "a genetic unit that is small enough to last for a large number of generations and to be distributed around in the form of many copies" (2006:32). This manner of definition would accord with genes as a "mechanism of inheritance" (Buchanan et al, 2009:347); in that they are the means through which the characteristics and traits of organisms are perpetuated intergenerationally. An organism is however, not only determined by its genetic inheritance, but also by the environment in which it develops. Thus, in the case of a human organism, an infant may be

born with a particular genetic predisposition which it has inherited from its parents, but as it matures it will also be influenced by a host of environmental, cultural and social factors.

Genes are located within the chromosomes of an organism, which in turn are made up of strands of DNA (deoxyribonucleic acid) and various proteins. DNA is "a long molecule composed of nucleotides...[which are comprised by] four subunits (bases, or chemical letters)...[t]hree billion of these letters make up the DNA sequence of the human genome" (Green, 2007:264). The term genome refers to the sum total of genes and genetic information inherited by an organism.

ii) Genetic Intervention

A genetic intervention refers to the modification of the genome of an organism by means of various technologies. A genetic intervention generally refers either to a direct or indirect intervention (Buchanan et al, 2009:6). Direct interventions encapsulate two modes of intervention, namely, gene therapy and gene surgery. In the case of gene therapy, the aim is to either introduce particular genes into the somatic or body cells of an individual, or into germlines cells (sperm cells, egg cells or embryos). Gene surgery, on the other hand, entails a process in which abnormal or undesirable genes are "'switched off' – that is, deactivated so that they no longer produce their distinctive effects" (ibid.). As mentioned in the previous chapter, the insertion or modification of germline gene cells will result in the passing on of these genes intergenerationally; whereas any changes to the somatic cells of an individual will result in modifications solely to that individual and thus, would not be inherited by potential offspring.

Indirect interventions refer either to "genetic pharmacology [or] embryo selection" (ibid. 7). The former entails the use of genetic research and medication to correct the effects of malfunctioning genes. The identification of certain genes associated with genetic diseases may also be utilised in the process of embryo selection, in which embryos possessing such genes will be destroyed in favour of the implantation of an embryo, in which these aberrant genes are absent (ibid.). As pointed out by Buchanan et al however, germline gene therapy has not yet been performed on human beings and somatic gene therapy is currently only utilised for treatment purposes, in other words, to correct genetic abnormalities. These interventions would, however, be wholly compatible with purposes of enhancement, as well

as treatment. In such cases, procedures would aim at identifying genes which are responsible for specific capabilities or produce desirable traits and thus, 'normal' genes would be replaced with these superior genes.

The area of genetic engineering is therefore of particular interest to transhumanists; due to the fact that many of the technologies which could enable certain aspects of the transhumanist vision of the improvement and development of individuals are now possible[38]. Such possibilities are predominantly due to the progress made by the Human Genome Project (HGP) in mapping and sequencing the human genome[39].

iii) The Human Genome Project (HGP)

The HGP commenced in 1990 and was completed in 2003, three years ahead of the estimated time frame. As discussed above, this timeous completion may be attributed to the law of accelerating returns. Original predictions regarding the estimated time-frame of completion failed to take into account the way in which the improvement of the techniques and instruments utilised for such a project would expedite its completion (Bostrom, 2003a:7). The exponential progress of the HGP has also been reflected in the continually falling costs of the project. The original cost per DNA pair was approximately one US dollar; however, scientists now predict that before long, the envisaged cost of sequencing the entire genome of an individual could be as little as one thousand US dollars (Green, 2007:2).

The HGP enabled the identification of some 25 000 genes, as well as the sequences of 3 billion chemical base pairs that comprise human DNA; thus providing us with the initial stages of an "instruction program for every feature of our biology" (ibid.). One of the most

[38] There are a number of examples of ground-breaking work that is being conducted in this area. A retrovirus is able to substitute its own DNA with that of the host it enters. There has been success in utilising non-harmful retroviruses which are inserted into cells thereby exchanging a healthy DNA sequence for an aberrant one (Green, 2007:34). Other means of safely inserting particular DNA into genes, such as homologous recombination, are also being explored. This refers to a process whereby a "cell's own gene repair mechanisms [are utilised] to make site-specific gene targeting and gene alteration possible" (ibid. 33). In addition, there have been successful experiments utilising animals such as mice and chimpanzees, both of which possess genetic similarities to humans. Experiments in this regard have successfully utilised both retrovirus and homologous recombination techniques in conjunction with stem cell research, resulting in transgenic animals, referring to animals which have " had foreign DNA stably integrated into [their] genome" (ibid. 41).

[39] Genetic mapping refers to "the process of identifying the chromosomal site of each gene, [whilst] sequencing refers to identifying the molecular composition of each gene" (Murphy, 1998:198). The latter is therefore more detailed than the former but together, genetic mapping and sequencing enable greater understanding and prediction of genetic diseases.

important results of the HGP's completion of the mapping of the human genome for medical science is the possibility it has granted for the prediction and early diagnosis of genetic diseases resulting from abnormal or mutated genes or chromosomes[40]. Before the completion of the HGP, the sole means of determining an individual's risk of contracting a genetic disease was through access to information regarding the family history of the individual in question. However, whilst the success of the HGP is considerable, there is nevertheless still a vast gap between the ability to diagnose diseases and the possibility of safely treating or curing them (Murphy, 1998:199).

In terms of enhancement, and for the purposes of transhumanism, it is hoped that the mapping and sequencing of the human genome will ultimately enable us to link the genes, and interactions between genes, with specific human traits or capabilities. As Bostrom points out, the potential offered by such a possibility is vast due to the fact that almost all human characteristics "intelligence, extroversion, conscientiousness, physical appearances, etc – involve genetic predispositions" (2003a:8). Furthermore, this potential when combined with other new and emerging technologies, such as nanotechnology, would permit further possibilities.

There are, however, myriad ethical objections to the use of genetic interventions for enhancement purposes, which are the subject of extensive debate within the bioethics literature. Such objections are characterised by the ideological paradigm from whence they originate. Arguments lodged by bioconservative or religious adherents will differ from those of secular communitarians and advocates for distributive justice or those who view the risks of such technology as too great to embark upon at this point. As mentioned in Section 2.2.3 of the previous chapter, the objections of thinkers who support enhancement in general, but do not endorse radical enhancement or transhumanism, are of great interest in clarifying the real differences between the two. This thesis however, is concerned with transhumanism and thus with objections that would be lodged specifically against it, rather than genetic

[40] Well-known examples of such genetic diseases include Down syndrome, cystic fibrosis, Tay-Sachs disease, the metabolic disorder phenylketonuria (PKU), hemochromatosis, Huntington's disease and sickle cell anemia. As discussed by Buchanan et al the possibility of the detection of such diseases opens the way for either direct or indirect intervention as a means of counteraction. The process of determining genetic disorders however, is not a straightforward one in terms of the fact that certain genetic diseases are the result of single gene disorders whereas others may result from the interactions of multiple genes. Furthermore as argued by Chadwick (1998:189), certain genes may have an indeterminate effect on the possibility of the development of a genetic disease due to environmental or contextual influences that may play a role in whether or not an individual contracts a disease for which they may have a predisposition.

enhancement in general. In particular, the transhumanist desire to transcend the limitations of the human form, and thus, the possibility that the enhancements they propose would render their recipients no longer human, is of great interest for the purposes of this thesis; due to the relevance it bears to the question of whether or not transhumanism is a violation of human dignity. This matter will of course be addressed in Chapter 5. Before we commence with an explication of nanotechnology and robotics however, it is necessary to address two areas of interest related to genetic technologies, namely, stem cell research and cloning.

iv) Stem Cell Research

The realm of genetic technology includes the possibilities offered by stem cell research, which is particularly relevant to the treatment of illness and disease. Stem cells refer to non-specific cells that are able to self-reproduce and differentiate into specific cells, which fulfil particular functions within living organisms. Stem cells could be thus be grown into replacement tissues or organs with vast implications for the treatment of a wide variety of degenerative conditions and diseases (Gearhart, 1998:1061). In particular, the potential of stem cells to address a diversity of conditions related specifically to the aging process, such as "diabetes, osteoporosis, cardiovascular disease…and a large variety of neurodegenerative diseases", is immense (Barazzetti, 2011:335).

Stem cells may either be extracted from six to eight day blastocysts or embryos, which are then destroyed in the process, or from the tissues of adult organisms (Sandel, 2007:102). Greater success has thus far been achieved with the experimentation of embryonic stem cells, which appear to be more malleable and suitable for the task at hand. However, advancements are being made in research utilising adult stem cells, as well as the possibility of "reprogramming" specific adult cells into stem cells (Gordon, 1999:2023; Bostrom, 2003a:8). Success in the latter regard would circumvent the ethical issues which have beset embryonic stem cell research, due to the moral implications of the destruction of embryos utilised in the process.

v) Cloning

The technology of cloning has elicited a great deal of controversy in the decades following the first successful cloning of an animal, Dolly the sheep, in 1996. Dolly was cloned through a

process in which the nucleus of an adult somatic cell is removed and transferred into a denucleated ovum. This ovum is then stimulated to divide, forming a blastocyst which is comprised of roughly one hundred cells which have not yet differentiated. The blastocyst then develops into an embryo, which may then be implanted into a surrogate. This embryo is an exact replica of the organism from which the donor nucleus was removed, essentially an identical twin of the donor. This process is termed reproductive cloning, in contradistinction to therapeutic cloning, although the methods utilised in both are identical (Moodley, Greenberg & Van Niekerk, 2011:309).

Therapeutic cloning utilises the above process in order to create a blastocyst of undifferentiated stem cells. As mentioned in the preceding section discussing the uses of stem cells in general, the stem cells that may be obtained from a cloned blastocyst would be of immense value in treating a host of degenerative conditions. Due to the fact that these stem cells would be obtained through the process of cloning, the organs or tissues grown as a result would not be at risk of bodily rejection by the immune system of the individual in question. Therapeutic cloning is however, subject to the same ethical concerns as stem cell research; in that the extraction of cells from the blastocyst results in its destruction. Opposition to this process would be based upon the premise that destruction of the blastocyst prevents the development of the embryo, and thus, the individual who would have come into existence. More specifically, arguments against the use of embryonic stem cell research, and thus therapeutic cloning, are based upon the fact that the process is viewed as the instrumentalisation of a potential human being. In other words, it treats potential life as a means to an end, rather than as an end in itself.

Reproductive cloning is only permitted, and has thus only been successful, in the case of the cloning of animals, as mentioned above. At present, the reproductive cloning of human beings is illegal and is prevented by explicit, worldwide legislation. Opposition to the reproductive cloning of human beings is based not only upon the risk factors involved,[41] but also due to the "possible psychological harm" (Buchanan et al, 2009:201) that could be caused to the cloned individual. A particular psychological harm which is prevalently raised, is the possible loss of an individual's sense of autonomy or self-determination, due to the fact

[41] The risks to the individual that would result from the cloning process are obviously not conclusively known due to the fact that this process is illegal and has thus not occurred. However, possible risks would be the susceptibility of the clone to "cancer or other diseases of aging" (Buchanan et al, 2009:199), due to the use of a mature adult cell which may thus have "accumulated genetic mutations" (ibid.).

that they would share the identical genetic constitution with an identical twin who has already achieved maturation (ibid.). This concern has also been expressed by thinkers such as Kass (2003) and Feinberg (1980) as a violation of clone's "right to an open future". Rebuttals to such arguments have focused upon the fact that they represent an implicit genetic determinism, due to their assumption that our life-outcomes are solely bound by our genetic constitution, rather than upon an interaction between the latter and the environment in which we are situated (Harris, 2007:127).

For the purposes of our discussion of transhumanism, it is the use of stem cells obtained through the process of therapeutic cloning that is of great interest. Transhumanism has long term goals which require the development of nanotechnology and AI. However, transhumanists are dedicated to the task of realising these goals for themselves, rather than for abstract future generations. Possibilities such as cryonic suspension offer one means of triumphing over mortality; provided reanimation is able to take place at a future time in which the causes of death and any subsequent bodily damage may be reversed. The preferable solution however, would be to avoid death altogether until technological advancements are such, that the diseases of aging may be cured. Many of the diseases of old age, such as general cellular degeneration, could thus be treated with procedures developed through stem cell research. The support and development of these technologies are therefore, an important short term goal for transhumanists.

3.3.2 Nanotechnology

i) Background

K. Eric Drexler, author of the first book on nanotechnology, entitled *Engines of Creation* (1986), commences his exposition with the observation regarding how:

> coal and diamonds, sand and computer chips, cancer and healthy tissue: throughout history, variations in the arrangement of atoms have distinguished the cheap from the cherished, the diseased from the healthy. Arranged one way, atoms make up soil, air, and water; arranged another, they make up ripe strawberries. Arranged one way, they make up homes and fresh air; arranged another, they make up ash and smoke (Drexler, 1986:4).

While Drexler's ground-breaking work may rightfully be viewed as having provided the foundation for nanotechnology, its possibility was first mentioned in 1959 by Richard P.

Feynman, one of the physicists involved in the invention of the atomic bomb. In a now famous lecture, Feynman discussed the potential that lay in "manipulating and controlling things on a small scale" (1960:22). Among the ideas discussed by Feynman, was the possibility of creating machines at the atomic scale, at a level so minute that they could be inserted into the blood vessels of an individual to act as "mechanical surgeon[s]" (ibid. 30). Once inside the blood vessels, these machines would be able to investigate, for example, malfunctioning valves in the heart, and correct this. As will become evident in this section, the creation of such machines is now a fundamental goal in the field of contemporary nanotechnology.

In his book mentioned above, Drexler reiterates and develops the ideas introduced by Feynman, in particular, the possibility of creating a molecular assembler or nanobot, as it has come to be known. Drexler posits that all technological advancements have depended upon the "ability to arrange atoms" (1986:19). This is evident in terms of "bulk technology" (ibid. 6), referring to the shaping of bulk matter to form the tools that were utilised during the stone age, to the machines and computers that currently occupy an indispensable part of daily existence in the twenty first century. In the future, the arrangement of matter at a macro or bulk technology level will be superseded by the manipulation of atoms at a molecular level, through the use of nanobots. These nanobots would be able to fuse different 'clumps' of atoms together in virtually any combination, to create "almost anything that the laws of nature would allow to exist…[in other words] anything we can design" (ibid.) – including further nanobots.

As Drexler points out, there is already in existence a molecular assembler present within the cells of all living organisms, namely, the ribosome; which operates in a similar manner to the way in which nanobots would function. Ribosomes are responsible for the creation of protein within the cells of organisms, which in turn is utilised by other mechanisms within cells, and is essentially the building block of every life form in existence. By fully understanding how ribosomes work, it is thus possible to create a similar non-biological replica which would function in a corresponding manner, but could be directed from an external source, such as a computer. Before discussing the particular way in which nanotechnology is proposed to be of benefit to transhumanist aims, we shall briefly elucidate the term itself.

ii) What is Nanotechnology?

Nanotechnology generally refers to "any technique that works and can be understood at a nanometre level" (Wilson et al, 2002:4). The etymology of the word nano is derived from the Greek term for dwarf. To illustrate the minute scale at which this technology occurs, it is useful to compare the scale of nanometres to general units of measurement. In descending order of scale: we know that there are a hundred centimetres in a metre (10^{-2}); a thousand millimetres in a meter (10^{-3}); a million micrometres in a metre (10^{-6}) and one billion nanometres in a metre (10^{-9}). Atoms measure between 0.1 to 0.5 nanometres in diameter; thus, one nanometre equals approximately ten atoms.

Nanotechnology is also described as molecular nanotechnology, due to the fact that it encompasses the manipulation of molecules, referring to two or more chemically bonded atoms, as well as individual atoms. It is closely allied with the field of chemistry; which studies the chemical reactions between atoms and groups of atoms or molecules, and how these reactions affect the resulting structure of matter. Chemistry has established that there are 109 distinctive varieties of atoms or elements. All matter is composed of differing combinations of these 109 atoms. Thus, the construction of an object would depend upon devising a 'recipe' of its constituent atomic components. As Bostrom points out, nanotechnology "will transform manufacturing into a software problem…[as in order to] to build something, all you will need is a detailed design of the [molecular constitution of the] object you want to make and a sequence of instructions for its construction" (2003a:10). However, in order to manipulate atoms at this level, machines that are constructed at the same scale as the matter they would aim to transform, are required.

In terms of manufacturing, therefore, one of the most pertinent possibilities offered by nanotechnology, is that of the creation of assemblers, as referred to above. The term assembler refers to a machine, constructed at the nano-level, which would be controlled by the instructions of a computer. An assembler differs from a nanomachine in that it would be capable of constructing other nanomachines, as well as duplicating itself (ibid. 5). As pointed out by Wilson et al, examples of "non man-made" nanomachines occurring in the natural world that are able to self-replicate are bacteria and viruses (2002:5). Nano assemblers could thus be of a similar size and structure. Assemblers would enable the:

> holding and positioning [of] reactive atoms and molecules in order to control the precise location at which chemical reactions take place [which would] allow the construction of large atomically precise objects by a sequence of precisely controlled chemical reactions, building objects molecule by molecule (ibid.)

One of the most important advantages of nanotechnology, and the creation of assemblers, lies in the fact that this technology will enable the building of any object at an extremely low cost, with virtually no waste products. The material used for the building of objects would be matter manipulated at a molecular level. Thus, as mentioned in the opening quote of this section, due to the fact that the distinctness of objects results from their particular atomic constitution, a material such as soil, or any available natural resources for that matter, may be used as the raw material out of which objects could be constructed. Furthermore, any surplus material may simply be utilised for the creation of other objects.

Another possibility is the creation of dissemblers, namely, nanomachines capable of breaking down material, such as rock, in order to provide raw material out of which alternative objects could be constructed. The implications of these manufacturing possibilities are without limits; especially if combined with the possibilities of genetic engineering. In fact, it would not be an overestimation to describe the potential of this technology as utterly world-transforming. Nanotechnology has innumerable potential uses to which it may be put, which is reflected in the vast array of scientific literature on the subject. However, transhumanism is concerned first and foremost with acting upon and transforming the human body, rather than the environment or external world. A transhumanist after all, would see little point in a focus upon nanotechnology, in terms of its ability to create objects or to transform the external world, if he or she is not around to ultimately enjoy the fruits of such possibilities. The aspect of nanotechnology which is therefore of keenest interest to the purposes of transhumanism is that which was alluded to by Feynman in 1960, and mentioned at the beginning of this section, namely, nanobiotechnology, as a means of transforming the human body.

iii) Nanobiotechnology

Grunwald and Julliard describe nanobiotechnology as “a nanotechnological infiltration of molecular biology, genetics and neurophysiology [which aims] at bridg[ing] the gap between inanimate and animate nature” (2007:78-79). Within the ambit of nanobiotechnology, the growing field of nanomedicine, in particular, is of great interest in terms of transhumanist

endeavours. The possibility of utilising nanotechnology for medical purposes received its first extensive investigation in the volume entitled *Nanomedicine* (1999), authored by the scientist, Robert A. Freitas Jr. The Foresight Institute defines nanomedicine, as explored by Freitas, as "the monitoring, repair, construction and control of human biological systems at the molecular level, using engineered nanodevices and nanostructures" (Nanomedicine, 2012). The specific uses to which nanomedicine may be put are innumerable, and include possibilities such as greater efficiency in diagnosing disorders and diseases, or susceptibility to both. In terms of the treatment of existing conditions, nanomachines could be utilised to administer "nanoparticle dosage[s]" (Grunwald & Julliard, 2007:79), thereby circumventing the need for medication which results in undesirable side effects[42]. Another possibility afforded by nanomedicine, would be the use of "nanoelectronic neuro-implants (neuro-bionics) [which would be utilised to] repair damage to [for example] sensory organs or to the nervous system" (ibid.).

Nanomedicine is by definition concerned with the restoration of human functioning to what would be considered a statistically determined state of health. However, the progression from utilising nanobiotechnology for treatment or medical purposes to utilising it for enhancement is an obvious and inevitable one (ibid.). An example of this, discussed by Grunwald and Julliard, is a treatment which is developed for improving or substituting a damaged or lost sensory organ such as an eye or ear. Once such a treatment or prosthesis has been developed, it could be continually improved upon, in the manner in which technology is generally 'upgraded', to an extent at which it would surpass the original biological mechanism which it was hoping to emulate (ibid.). This possibility would then apply to any human capability or function. The human aspiration for progress, which drives the forward momentum of technological and scientific knowledge, would seem to ensure that once a capability has been emulated technically, the next step will always be concerned with its improvement (ibid. 80).

[42] Kurzweil has written extensively on the subject of the numerous possibilities offered by nanomedicine which are currently being researched. An example of this, is the progress made in the rapidly growing field of "biological microelectromechancical systems (bioMEMS)" (Kurzweil, 2003). BioMEMS are able to administer medications as well as investigate and diagnose at the molecular level. At the University of Illinois, a device has been developed, with pores measuring seven nanometers in length, which controls the administration of insulin in cases of diabetes. This discovery could, as Kurzweil points out, be utilised for other medical conditions, such as the delivery of dopamine in cases of individuals suffering from Parkinson's disease, or drug delivery to tumours in cases of cancer (ibid.). In addition, a neural probe has been developed which is able to measure the exact amount of electrical activity in cases of neural disease. The importance of these examples lies in the fact that they illustrate that the benefits offered by nanotechnology, while in their nascent stages, already offer great possibilities in fighting disease. These possibilities will increase and develop from hereon.

The uses to which nanotechnology may be put are also of great interest with regards to their military applications. A prime example is The Institute for Soldier Nanotechnologies (ISN), which was founded in 2002 and operates under the auspices of the Massachusetts Institute for Technology (MIT) with an initial $50 million grant by the U.S. Army. The ISN is dedicated towards "explor[ing] the potential power of nanotechnology to enable unprecedented advances in capabilities for Soldier protection and survivability" (About ISN, 2013). Whilst the ISN is occupied with the development of nanotechnology to improve protective clothing, devices and gear utilised by soldiers, one of six areas of research is dedicated towards the biomedical use of nanotechnology (Research, 2013). With the military advantages that would be conferred by the successful implementation of such technologies, the inevitability of their development is clear. However, the dangers or risks involved in the use of this technology for military purposes are obvious and form a central role in arguments against their development.

If nanotechnology is to be utilised for the purposes of enhancement, then it is important to investigate the way in which transhumanists would hope to achieve this. Whilst the uses of nanotechnology, of which transhumanists would avail themselves, are generally not yet possible; the above discussion should illustrate that the likelihood of their realisation is a question of time rather than possibility. It is thus necessary to now investigate the discussions of transhumanist thinkers in this regard, and more specifically, the uses of nanotechnology that they would advocate.

iv) Nanobiotechnology and Enhancement

Any discussion regarding the utilisation of nanobiotechnology for enhancement purposes is bound to be a speculative enterprise. Whilst emerging technologies such as nanotechnology and AI are the subject of ever-increasing progress and rapid development, due to the tremendous potential they hold, the transhumanist uses to which they would be put are at least several decades away from realisation. The inevitability of their realisation however, is such, that there is clearly a pressing need for an engagement with the ethical concerns relevant to emerging technologies, such as nanotechnology, which is reflected in the ever-increasing number of books and essays on the subject.

New areas of ethical interest pertaining to these developing technologies have also come into existence, an example of which is the growing field of nanoethics for which a journal entitled

Nanoethics was inaugurated in 2007. The Foresight Institute was formed in 1986, by Eric Drexler, as a means of publicising the potential benefits, as well as safeguarding against the risks, of emerging technologies such as nanotechnology and AI, through research and discussion. The organisation describes itself as "the primary force pushing for the kind of nanotechnology that will truly transform our future, from medicine to the environment to space settlement" (About the Foresight Institute, 2012). In addition, the existence of legislation, such as the *Twenty first Century Nanotechnology Research and Development Act* passed in 2003 in the United States which addresses the "ethical, legal, environmental, and other appropriate societal concerns" (Johnson, 2007:22) of nanotechnology, is further evidence that it is a matter of when, rather than if, this technology will come to fruition.

The utilisation of nanotechnology for enhancement purposes would build upon and act concomitantly with developments in the field of genetics and biotechnology. The important point here, is that enhancement, by way of such technologies, is occupied with acting upon the human body or the human being as a biological organism. It is with the development and use of AI and robotics that many of the radical transformations in human beings would occur, as biological systems are replaced by mechanical systems. In this regard, the Nanotechnology revolution, as Kurzweil describes it, can be thought of as a bridge between the human being as a biological organism, and the human being as a biomechanical, or ultimately a purely mechanical, organism; if uploading becomes possible. Kurzweil has postulated extensively on the subject of possible enhancements utilising nanotechnology, and more specifically nanobots. In an essay of the same name, he argues that the *Human Body Version 2.0* (2003), would come into being primarily through the creation of nanobots. An area holding great potential for transhumanist endeavours which would depend upon the creation of such nanobots is that of virtual reality.

v) Virtual Reality

Once nanobot technology is fully developed, it would allow complete immersion into computer designed virtual realities. In other words, it would enable access to computer simulations which would be as realistic to the senses as actual reality. As Kurzweil explains, this would occur through situating nanobots at the sites between neurons reporting external sensory information to the brain (2001a:37). All that would be required would be a large enough number of nanobots to match the numbers of neurons involved in the reporting of a

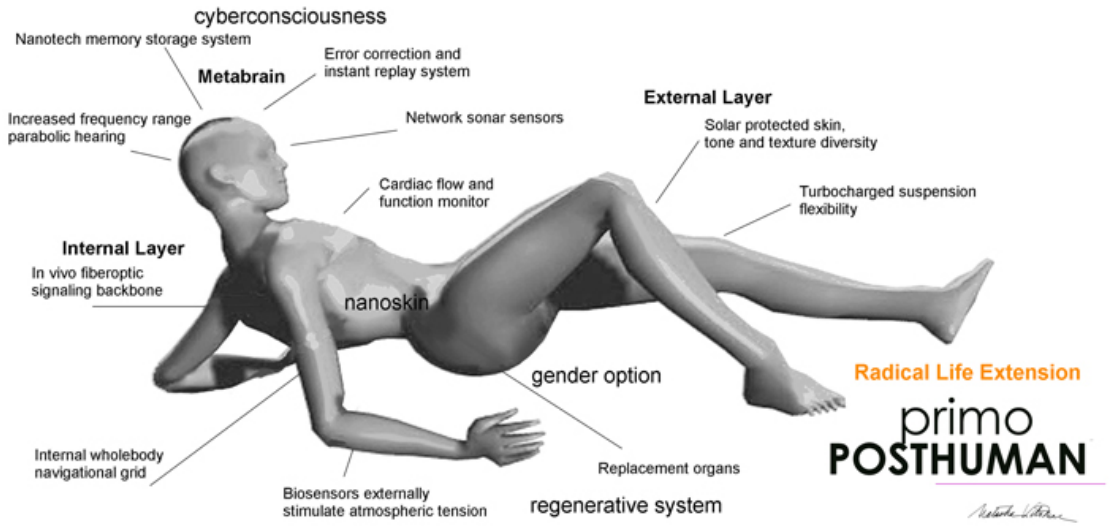
sense perception. These nanobots would be controllable from an external computer source, and could then be activated at times during which the individual in question wishes to enter a virtual reality. Once in a virtual reality, the simulated information from nanobots could then override sensory information from the external world. Actual movement could then be suppressed, whilst the brain would still perceive itself as sending signals to direct movement which would occur in the virtual world (Kurzweil, 2001a:37).

The seeds of such possibilities are already in existence in research conducted by the Max Planck Institute, which has created "neuron transistors" capable of monitoring and intercepting communication or signals between neurons, without direct contact with these neurons. Scientists have subsequently utilised these neuron transistors to successfully direct the movements of leeches from a computer source. There has also been success with the interception of signals between nerve cells extracted from the brains of rats, and silicon neuron transistors (Vassanelli & Fromherz, 1997:85).

Virtual reality is not a direct form of enhancement; in that it would not transform the human body. Rather, it is posited by transhumanists as a means of enriching or transforming human experience. Virtual reality would enable the exploration of any environment imaginable, whether in existence or not, including realities not subject to physical laws. As Kurzweil posits, rather than exploring the worldwide web as an external observer, we could enter this world with others (2001a:37). Individuals separated by great distances could interface directly on a common server, which would utterly transform our notions of space and the need to situate ourselves in close physical proximity to loved ones. Furthermore, the potential offered by virtual reality, in terms of "unlock[ing] limitless possibilities for human creativity" (Bostrom, 2003a:15), would render it highly attractive. An individual could potentially be anyone or do anything in such a virtual world, which would become indistinguishable from reality, thus blurring the lines between the two. The creation of virtual worlds would be a bridge between a reality-bound existence and the possibility of 'uploading', which will be discussed in the following section. However, the creation of nanobots offers myriad other possibilities for the enhancement of the human condition.

vi) Nanobots and Biological Upgrading

The potential of nanomedicine for the treatment of a host of medical conditions was discussed above. Furthermore, mention was made of the inevitable progression from the development of particular technologies designed to treat medical disorders or diseases, to their utilisation for enhancement, beyond species typical functioning. If we are to examine the possibilities put forward by transhumanists regarding the reengineering of the human body, one of the most interesting accounts which warrants discussion is Natasha Vita-More's[43] *Primo Posthuman* or *Primo 3M+*. Vita-More describes *Primo 3M+* as "a prototype future body, a conceptual design with superlongevity in mind…[which will] combine design with biotechnology" (2004). It is posited that the reengineering of the human body will occur in stages, in accordance with new scientific developments, during which parts of the human body will be gradually replaced. As pointed out by Vita-More (2004) and Kurzweil (2003), this process is already underway, as evidenced by the advancements made in prosthetics that are now able to replace most components of the skeletal system, as well as other defective body parts. Vita-More's preliminary design for *Primo 3M+* below, enables us to glimpse the form that such a future body might take (2004).



What is important about this design is not so much the specific features with which it is comprised, but rather the way in which it treats "biological traits as design and engineering

[43] Vita-More, a prominent transhumanist, is an academic with a background in art, design and science, and is also current head of Humanity+, the renamed World Transhumanist Association.

problems" (Vita-More, 2004), and seeks to render our biomechanical constitution, such as gender and appearance, to the realm of personal choice. Vita-More describes *Primo3M+* as a body that:

> does not age, is easily upgraded, has meta-sensory components, 24-hour remote Net relay system, and multiple gender options. Its outer sheath is primed with smart skin which vanguards practical designs purposes for communication. The model structure is composed of assembled massive molecular cytes or cells connected together to form the outer fabric of the body. The smart skin is engineered to repair, remake, and replace itself. It contains nanobots throughout the epidermis and dermis to communicate with the brain to determine the texture and tone of its surface. It transmits enhanced sensory data to the brain on an ongoing basis. The smart skin learns how and when to renew itself, alerts the outside world of the disposition of the person; gives specific degrees of the body's temperature from moment to moment; and reflects symbols, images, colours and textures across its contours. It is able to relate the percentages of toxins in the environment and extract radiation effects of the sun (2004).

Primo 3M+ is also an interesting example of transhumanist art; evocative of the transhumanist anticipation of a future in which the distinction between artist and technician will be blurred, and the design of the human body will become a matter of public debate.

Kurzweil's *Human Body Version 2.0* (2003), introduces other possible adaptations that could transform our current human form into a transhuman, and ultimately a posthuman, state. A contender for radical upgrading is the digestive system, in which nutrients could be delivered via nanobots. This would separate the act of eating food for sheer pleasure and taste, from food consumption as the necessary means through which life processes are supported. Nanobots could also be utilised for functions of elimination, enabling food to be eaten for pure pleasure and digested in a manner in which it would no longer be absorbed by the body.

Freitas has extensively researched the potential of artificial respirocytes which could replace red blood cells, allowing the delivery of "236 times more oxygen to the tissues per unit volume than natural red cells" (1998:411). Such a development would revolutionise the treatment of illness and disease allowing myriad possibilities such as "transfusable blood substitution" (ibid.). In terms of enhancement possibilities, artificial respirocytes could enable remarkable athletic feats, such as underwater swimming for up to four hours without the need to breathe. In this regard, the ability of respirocytes to greatly supersede the speed at which the lungs provide muscle tissues with oxygen offers the potential to utterly transform sports and athletic ability.

Other possibilities lie with replacements to platelets and white blood cells, which would enable immunity against all infections. Kurzweil also envisages the eventual replacement of the heart with nanobots, which would provide the requisite blood pressure (2003). In fact, most of the vital bodily organs are not irreplaceable in theory; if it becomes possible to perform their respective functions by utilising nanobots. Kurzweil argues that once this goal is attained, we will be well and truly on the way to vanquishing the aging process, and thus, to defeating death itself (ibid.).

Furthermore, it is posited that by the time it is possible to replace the functions of vital organs with artificial structures and nanobots, advancements will presumably be such, that it will become feasible to redesign the human brain. The basic foundations of such a possibility have already been laid; with advances made with neural implants utilised in cases of Parkinson's disease, cerebral palsy and multiple sclerosis, as well as devices such as cochlear implants. In addition, a necessary shift has occurred in neuroscience, from treating the brain as "soup, adding chemicals that enhance or suppress certain neurotransmitters…[to] treating it like circuitry" (Rick Trosch in Kurzweil, 2003), which has also laid the path for the redesign of the human brain. The question of reverse engineering and redesigning the human brain, will be discussed further in the following section which addresses the AI or robotics revolution.

3.3.3 Robotics/Artificial Intelligence (AI)

In the previous section, the nanotechnology revolution was described as the bridge between the human being as a biological organism, and the human being as a biomechanical, or ultimately a purely mechanical, organism. The Robotics or AI revolution may therefore, be viewed as the means through which the latter will be achieved. As Agar posits, this period will entail the development of the technology which "will complete our escape from human biology" (2010: 6). As mentioned above, Kurzweil envisages that the onset of this period will occur in the 2030s, and that by the mid 2040s, the "non-biological portion of our intelligence will be billions of times more capable than the biological portion" (2005a:36).

As has already been emphasised, any discussion of the transformations that are proposed as occurring during this period is a largely speculative enterprise, due to the fact that the possibilities aspired to here, will build upon technological advancements in nanotechnology,

most of which are not yet possible. Because the actual nature of a future in which biomechanical intelligence abounds is largely a mystery, the discussion of this period will thus outline the transformations transhumanists **aspire** to.

i) What is Artificial Intelligence (AI)?

AI refers to "the art of making computers solve complex problems in ways that have some or all the characteristics of human intelligence" (Mautner, 2005:50). In other words, it is the endeavour to create or replicate human intelligence in computers. There are two trains of thought regarding AI, namely, strong and weak AI. Those who endorse weak AI, argue that whilst machines or computers may be able to mimic or simulate human intelligence, they will never be able to experience consciousness or "cognitive mental states" (Mautner, 2005:50). Proponents of strong AI, on the other hand, argue that not only will computers be able to equal, and exceed, human intelligence, in terms of ability to pass a Turing test[44], but they will "actually have (conscious) cognitive mental states" (ibid.).

According to Kurzweil, the importance of AI for enhancement lies not solely in increasing the intelligence of computers; but in utilising advancements in this field to elevate the intelligence of human beings, and thus, to ultimately create superintelligence (Agar, 2010:35). Kurzweil posits that the development of AI will result in intelligence which vastly surpasses human capabilities, due to a combination of the infinitely faster cognitive processing, "memory capacity and recall, and instant downloading/learning abilities of computers with the creativity and pattern-recognition abilities of the human mind, effectively constituting a being with the strengths of both and the weaknesses of neither" (ibid.). He posits that neurons will gradually be replaced by circuitry and neuroprosthetic devices[45]; and ultimately we will be

[44] Whilst machines are already able to surpass human beings in terms of processing speed and memory, there is not uniform consensus as to whether they are able to pass a Turing test. The Turing test measures machine intelligence in terms of whether or not it is indistinguishable from human intelligence. Turing argued that if a computer and a human being were given a specific test or questioned by a third party, without disclosure of their identities, and the third party was not able to ascertain which answers were given by the computer and which were given by the human being; the computer would have passed the Turing test successfully. In other words, the computer could be said to be intelligent. The test that Turing described, took the form of a typical human conversation in which passing is not measured by giving a correct answer, but rather upon whether or not answers given are typically human. Some have claimed that the test has been passed by various computers; whilst others argue that passing the test does not signify that the computer in question possesses human intelligence (Turing, 1950:434).

[45] As Kurzweil argues, this process is already underway with the invention of cochlear implants which enable the deaf to hear. The implant enables hearing by communicating "directly with the auditory nervous system" (2003:10).

capable of uploading our minds onto computers, leaving behind our physical bodies if we so desire (Kurzweil in Agar, 2010:35). Before commencing with a discussion of uploading, which is undoubtedly the most radical aim propounded by transhumanists, it is important to briefly discuss practical applications of AI that are currently underway. These applications illustrate, not only that the more radical aims of enhancement held by transhumanists are shared with other organisations such as the United States' Defense Advanced Research Projects Agency (DARPA) and should thus be taken seriously, but also that the massive funding received by such agencies virtually guarantees the inevitability of their achievement.

ii) Current Developments in AI

Mention was made in the previous section, of the Institute for Soldier Nanotechnologies (ISN), which is currently occupied with the task of improving military capabilities. The research conducted by the ISN however, represents a mere fraction of the possibilities that are currently under development within DARPA. This organisation is at present engaged with research that may be seen as laying the foundations for most of the transformations that transhumanists anticipate in the area of AI, and thus a brief discussion of the nature of its work is warranted[46].

DARPA is perhaps most renowned as the agency responsible for the invention of the internet. As an organisation renowned for innovation and forward-thinking; in recent decades, the focus of DARPA has shifted from the development of military technology, to the development of the human being. Michael Goldblatt, the head of the Defense Sciences Office, an organisation at the cutting edge of innovation operating within DARPA, has outlined the aims of the agency as: the creation of "soldiers having no physical, physiological, or cognitive limitations" (in Garreau, 2005:22). With their $3 billion annual budget and "high-risk, high-return" (ibid. 23) attitude to enhancement, DARPA is without a doubt the primary driving force behind enhancement research.

A specific problem with which DARPA is currently engaged, is that of solving the primary challenges of combat, namely "pain, wounds and bleeding" (Garreau, 2005:26). A 'pain

[46] As already mentioned, this chapter is concerned with elucidating the technological means by which transhumanists hope to realise their aims. Whilst the research with which DARPA is occupied, is directed towards military application and is thus not aligned to transhumanism in any obvious way, it is nevertheless wholly concerned with enhancement.

vaccine' has been created, which alleviates all pain in less than 10 seconds and lasts for roughly a month. Once this vaccine is fully developed, severe pain, such as that which is experienced in cases of bullet, knife or burn wounds, will be eradicated a few seconds after it occurs (Garreau, 2005:27). In the area of wound treatment, DARPA funded scientists have developed a technique known as photo-biomodulation, utilising infrared light to "mend wounds to skin, bone, neurons, cartilage, ligaments and tendons within four days…[with implications] for spinal cord injuries, Parkinson's disease and brain tumours, as well as tissue and organ regeneration" (ibid.). One of the many programmes with which DARPA is currently engaged is the "metabolically Dominant Solider program" (ibid. 32), which is addressing other problems which affect combat. This program is engaged with researching human metabolic mechanisms in order to eliminate the need for food consumption, which is necessary to sustain energy levels in prolonged periods of combat. In addition, by studying animals which require minimal sleep, such as dolphins, research is also being conducted on eliminating, or at least lessening, this need in human beings.

As remarkable as the above developments and their implications for enhancement are, for the purposes of this discussion, a development which is of even greater interest is the DARPA funded 'creation' of a telekinetic monkey named Belle[47]. As Garreau points out, the purpose behind telekinesis is to "ultimately create a connection between any intelligence, silicon or human – any mind and any machine – anywhere" (2005:20). Once communication between human minds and machines is possible, the next goal will be to "seamlessly merge mind and machine, engineering human evolution" (ibid.). This latter possibility accords with one of transhumanism's most radical and controversial aims, the computational uploading of the human mind.

[47] This process has been achieved by attaching neural probes to areas within Belle's brain responsible for movement. These probes are connected to computers at varying distances which in turn are connected to a "robotic arm" (Garreau, 2005:20). Belle has been taught that if she moves a joystick upon witnessing a blinking light activated by a computer she receives a reward of food. Once the probes are hooked to Belle's brain, the joystick is deactivated, but her brain still reacts in the same way as if she were directing her arm to move when the light blinks. The intention to move is then communicated via the neurons in her brain, through the probes to external computers, which then move the robotic arm to which they are connected, in accordance with the movements Belle intends to perform. Essentially, as Garreau points out, Belle is moving this robotic arm, which may be located at a vast distance from her by utilising an internet connection, with her mind. The DARPA funded company Cyberkinetics, which has pioneered this research, has received approval from the Food and Drug Administration (FDA) for this device to be tested on humans (ibid. 44).

iii) Uploading

The hypothesis of uploading may be thought of as the epitome of the transhumanist desire to transcend our biological limitations and attain immortality. Uploading, simply put, "is the process of transferring an intellect from a biological brain to a computer" (Bostrom, 2003a:17). It is, of course, obvious, that such a possibility would depend upon a host of factors, most notably, our ability to conclusively understand the mechanisms of the human brain in their entirety. There are various means that are posited as potentially leading to such a possibility; however, most of them ultimately depend upon the creation of superintelligence, and the ability to reverse engineer the human brain. It is posited by thinkers involved in AI, such as Kurzweil, that reverse engineering the human brain will provide us with a blueprint for intelligence and enable us to replicate its mechanisms[48]. Once the mechanisms of the brain are fully comprehended, the next step will be downloading the brain, which would entail "scan[ning the] brain to map the locations, interconnections and contents of all the…neural components and levels. Its entire organisation can then be re-created on a neural computer of sufficient capacity, including the contents of its memory" (Kurzweil, 2001a:26). At the point at which we are able to scan the brain at the minute level required in order to fully understand its workings, the intricacies of the process of downloading or replicating it mechanically will supposedly be solvable. This solvability will be ensured by the law of acceleration, which guarantees the inevitability of the creation of superintelligent computers, as well as superintelligent human beings who have been enhanced with neuroprosthetic devices, both of which will be capable of bringing about the possibility of uploading.

As mentioned above, it is not yet possible to posit with any certainty, the way in which uploading would be achieved. However, transhumanists do engage in frequent discussion regarding what their hopes for this process would entail. Bostrom discusses two possibilities regarding uploading, the first of which is concerned with the probability that uploading could entail a process whereby the original biological brain of the individual choosing to upload does not survive (2003a:17). In such cases, the most important factor would be whether the

[48] Currently it is only possible to adequately study the mechanisms of the brain through scanning the brains of deceased individuals, which are sliced in a layer-by-layer process. There are, of course, non-invasive scans available, but the detail that is required for fully understanding brain processes or reverse engineering is only possible through "destructive scanning" (Kurzweil 2001a:21). Reverse engineering the human brain would require scanning the brain at an adequately high resolution. In other words, it would be necessary to utilise nanotechnology in order to scan the brain at an atomic level, thereby enabling us to view the neuronal connections in their entirety (Bostrom, 2003a:17).

personal identity of the individual uploaded was transferred successfully; otherwise, it is obvious no one would willingly opt to partake in such a process, unless he or she was facing certain death, regardless of such an option. Here, Bostrom refers to consensus regarding identity preservation as referring to "information patterns…such as your memories, values, attitudes, and emotional dispositions, and…causal continuity so that earlier stages of yourself help determine later stages of yourself" (2003a:17).

The second possibility is that uploading would be attainable in conjunction with the preservation of the original brain or biological entity. This prospect is problematic in terms of the fact that there would then potentially be a copy, or copies, of you in existence; thus inviting a plethora of ethical problems related to relationships with others, ownership, rights and identity in general. Specialists in AI such as Kurzweil however; envision humanity eventually becoming "software-based" and no longer requiring a corporeal form (in Garreau, 2005:104). If a physical form is required, there will in all likelihood be the possibility of 'growing' one through utilising combined technologies, such as stem cell and nanotechnology. As Bostrom argues, the experiences of an uploaded individual need not be any less rich than embodied human beings. Through virtual reality, an uploaded individual could partake in all the sensory experiences available to biological human beings and would presumably have the option of "interact[ion] with people on the outside and even rent[ing] robot bodies in order to work in or explore physical reality" (Bostrom, 2003a:18).

According to some transhumanists however, the primary purpose of uploading, would appear to be pragmatic (Rothblatt, 2011:112). At some point, it is probable that biological existence on earth will no longer be sustainable. This may occur as a result of innumerable factors ranging from the destruction of conditions hospitable for biological life, to the destruction of earth itself. The possibility of uploading could therefore be the only means of avoiding the extinction of humanity. According to this argument, there is an obligation to ensure that the technology that would offer humanity the chance to avoid extinction, be developed.

Bostrom also outlines other possible advantages of uploading (2003a:18-19). Firstly, uploads would essentially become immortal due to not requiring a corporeal form which is subject to aging. In this regard, the only restriction to life would be the prolonged existence of the universe itself. Uploads could presumably be "backed-up" to ensure continued survival, in the event that any malfunction occurs. Secondly, an uploaded existence could be highly

economical, in terms of the fact that one could experience the sensation of material wealth and pleasurable events, such as eating, without actually requiring any physical raw materials. Thirdly, distance and space would cease to be relevant as it would be possible to travel as fast as the dissemination of information. Fourthly, once consciousness is able to be replicated computationally, there will be no limit to self-enhancement.

It is clear upon engaging with a subject such as uploading, that even the idea of it would invite an inordinate amount of controversy. On the one hand, uploading, simply put, is representative of the desire to transcend the human form. In this regard, it clearly resonates with a Cartesian duality and an Enlightenment rationality, both of which prize the human being as a *res cogitans*, a rational entity that can extend itself through its imagination and thought, without the restrictions of a *res extensa*, a bounded, corporeal form. It must be noted however, that transhumanists do not denigrate the human body per se. Rather, it is that they refuse to accept the boundedness of human existence as subject to the vagaries of evolution, chance and ultimately mortality.

Of the vast array of ethical violations with which transhumanism is charged, one of the most interesting arguments against it, is that it seeks to directly tamper with, transcend or transform human nature. As Kurzweil points out, such an admonishment presupposes consensus regarding whether or not there is such a thing approximating an objective human nature, and if so, how it may be defined. Kurzweil himself views the human being as a member of the "species that seeks to extend its own horizons – that…embodies evolution towards ever greater knowledge and intelligence and creativity" (in Garreau, 2005:127). This interpretation accords with the Pico quote at the beginning of this thesis, which characterises human existence as limitless and boundless in its form. Thus, if one views the human being in this way; namely, as the being which is occupied with its own transcendence and self-creation, it is clear that the aims of transhumanism are congruent with such a conception. According to this view, it would not be possible to transcend human nature, as human nature by definition implies transcendence. However, if the human being and human nature are viewed as inextricably connected with a biological form, then there can be no doubt that transhumanism seeks to alter and transcend this.

3.4 Conclusion

This chapter has presented transhumanism as a project concerned with the radical transformation of the human being by technological means. Moore's law of acceleration as articulated and adapted by Kurzweil, serves as the foundation upon which transhumanist aspirations are shown to be viable in a projected time frame. The various GNR technologies which were discussed, represent a broad array of the mechanisms by which transhumanists hope to realise their aims. Kurzweil presents the GNR technologies as occurring in three revolutions commencing with the Genetic revolution, with which we are currently occupied. Progress in this first area will largely depend upon whether or not the ethical concerns which currently place restrictions upon the development and testing of new genetic technologies are resolvable. However, the nature of genetic research and development, such as that which is currently being conducted by agencies such as DARPA, would appear to suggest the inevitability of success in this area. The means by which the Nanotechnology revolution will be realised, as well as the foundations for the third and final Robotics/AI revolution, are currently both in their nascent stages; suggesting that the three technology revolutions ought not to be viewed as disparate entities, but rather as developing concomitantly.

This discussion of the technological mechanisms advocated by transhumanists in their quest to transform the human being, has served the purpose of further elucidating the underlying aims which drive the project. Chapter 2 identified the immediate goals of transhumanism as transformation in the areas of healthspan, cognition and emotional functioning. Improvements in these areas are posited as the means through which the overarching transhumanist goal, the improvement of the human condition, will be realised. It is however, not only the particular nature of what a transhumanist would characterise as an improvement of the human condition, but also the nature of the proposed mechanisms through which such improvements will be achieved, that sets this movement apart from other enhancement endeavours.

At the heart of transhumanism, with its proposed fusion of the biological with the mechanical, is a striving to escape the shackles of an inevitable physical decline and destruction. Whether this escape results in a species change or a threat to what is referred to by many as 'human nature', does not appear to be of primary importance for transhumanists. Rather, such changes would be viewed as merely a by-product of the quest to ward off death.

Transhumanists, such as de Grey, point out however, that they are not striving for immortality; due to the fact that immortality, by definition, would entail a "non-zero probability of dying" (De Grey in Agar, 2010:86). In other words, de Grey acknowledges that unforeseen external factors will remain outside our control, and thus, will always pose a threat to existence, which implies that if such factors were not the case, immortal existence would be possible.

Thus, in terms of the focus of this thesis, two questions or loci of interest which pertain to the relationship transhumanist endeavours bear to the question of human dignity may be identified. Firstly, is the quest to utterly transform ourselves, possibly from biological to mechanical entities, a violation of our human dignity? Secondly, if the result of such a transformation leads to indefinite life extension or immortality, is this an affront to our collective dignity or our humanity? Of course, such questions presuppose a consensus regarding how human dignity itself may be defined. The following chapter will therefore examine the amorphous concept of human dignity; whilst the final chapter will investigate the way in which the concerns associated with these two questions have been addressed.

4 Human Dignity

4.1 Introduction

The intense discussion regarding the ethics of genetic enhancement in the bioethics literature, attests to the fact that the subject is deemed worthy of consideration and rational debate. In this regard, whilst the quest to enhance human beings is still viewed as extremely problematic, there is clearly recognition that many forms of genetic enhancement are swiftly becoming, or are already, a possibility; and thus, that there is a distinct need for lucid and practical engagement with the ethical concerns related to enhancement in general. Due to this recognition, arguments against genetic enhancement are diverse in terms of their focus, and engage with real issues and concerns rather than taking an approach of flippant dismissal. Both Chapters 2 and 3 discussed the ways in which the transhumanist project and genetic enhancement are inextricably linked, in terms of the fact that many of the aims of transhumanism are dependent upon the development and success of genetic enhancement technologies. However, there was also an investigation of the ways in which the radical aims of transhumanism differ from those of genetic enhancement and the project of enhancement in general; and thus, the distinctive reactions and critique associated with the former. In this regard, there is a particular type of argument, founded upon an essentialist view of the human being and human nature, which is typically lodged against transhumanism[49].

The transhumanist aspiration to radically enhance human capacities, including indefinite life extension, and ultimately the transformation of human beings into biomechanical or possibly computational entities, elicits reactions of vehement opposition. This opposition is generally based upon the supposed intuitive 'wrongness' of tampering with who and what we are[50]. More specifically, reactions against transhumanism focus upon the changes which would lead to human beings no longer being classifiable as biologically human, in terms of membership of the species *Homo sapiens*. Furthermore, many critiques of transhumanism, which are

[49] Examples of such arguments are present in the volume of essays entitled *Human Dignity and Bioethics* (2009), which was commissioned by the President's Council on Bioethics. A specific example in this regard, is Kraynak's essay in this volume, *Human Dignity and the Mystery of the Human Soul*, in which he argues that science will never "succeed in changing or perfecting human nature…[due to the fact that] the mysteries of the human soul will never be reducible to the 30,000 genes or the 3 billion nucleotides of the human genome" (2009:80).

[50] The aims of transhumanism are frequently met with feelings of 'intuitive revulsion', which seem to have their basis in the ethics or 'Wisdom of Repugnance', mentioned in Section 3.1. These reactions will be discussed in greater detail in Chapter 5.

lodged by those who would not identify themselves as supporting a bioconservative or religious agenda, take recourse in metaphysical or religious notions. This is evidenced by the tendency of such arguments to advocate the preservation of the human form in its current state, due to its supposed status as something sacred, inviolable or essential to the human being, without the provision of adequate grounds for these claims. These 'intuitions' are increasingly associated with a notion which is the subject of great interest and debate, namely, that of Human Dignity.

The notion of human dignity is currently utilised in bioethics to explicate a diverse range of concerns. Examples of such areas include: practices pertaining to beginning and end of life situations[51]; the appropriate care of patients; physician/patient relationships and the permissibility of stem cell research. In addition, the notion of human dignity is increasingly utilised to address concerns relating to human cloning technologies, genetic enhancement, and in particular, as a means of opposition to transhumanism or radical enhancement. In this regard, transhumanism is frequently described as an affront to human dignity in a manner that appears to be aimed at halting the possibility of further debate.

The concept of human dignity however, is itself, not without problems of its own, despite its prevalent usage. Criticisms of human dignity are generally directed at the way in which the concept is employed, rather than with the value that dignity itself may hold. Examples of such criticisms include: the ambiguity or vagueness of the concept, the lack of adequate definition by those who utilise it and its supposedly religious foundations. In addition, there appear to be competing notions of dignity, which enable the concept to be used to argue coherently for diametrically opposing positions of the same argument, rendering its efficacy highly contentious. In this regard, Ruth Macklin's essay entitled *Dignity is a useless concept* (2003), cited extensively in the literature concerned with dignity, appears to be the locus around which the debate concerning dignity revolves, and is used to support calls to eradicate its use entirely from bioethics.

On the other hand, the prevalent usage of human dignity as a means of grounding human rights in a multitude of international constitutions, charters and legal instruments; the frequent

[51] Examples of beginning and end of life situations which draw upon notions of dignity for added ethical understanding include: abortion, preimplantation genetic diagnosis (PGD), cases of patients in persistent vegetative state (PVS), euthanasia and the way in which the bodies of the deceased are treated.

references and appeals to it in a variety of situations; as well as its widespread colloquial usage, seem to defy calls for its unproblematic abandonment from bioethics. The matter is further complicated by the fact that whilst the efficacy of the concept may be questioned, there are clear historical examples of what occurs when human dignity itself is disavowed. The notion of human dignity thus possesses tremendous emotive and normative power; and therefore, its dismissal from the bioethics lexicon may not be as straightforward a matter as Macklin would have it.

This chapter will therefore explicate the concept of human dignity; by firstly, tracing its historical origins, including its use in twentieth century human rights and bioethics instruments. Different definitions of the concept, and the problems arising from the usage of these competing notions in particular areas, will then be discussed. The purpose of this discussion will be to elucidate what notion(s), if any, of dignity, may be relevant, coherent and useful in arguments pertaining to transhumanism, which will be the subject of the next chapter of this thesis.

4.2 Historical Uses of the Concept of Dignity

In terms of evaluating the use of dignity arguments against transhumanism, the importance of explicating the manner in which dignity as a concept has been historically interpreted and employed, cannot be overstated. As outlined by Van der Graaf & Van Delden, the prevalent recourses to human dignity in contemporary bioethics are based upon associations of the concept which have been solidified since antiquity. Therefore, an historical exegesis of the term may provide deeper elucidation as to how it is currently employed, as well as clarifying its competing interpretations (Van der Graaf & Van Delden, 2009:152-153). Prior to the late eighteenth century, dignity was used as a general concept with a variety of meanings. Its transformation into ‘human dignity’, occurred due to particular Enlightenment developments, relating to how the human being came to be viewed. Awareness of such developments is vital in order to establish whether or not it is appropriate to utilise particular interpretations of dignity which have arisen in distinct, historical contexts, to solve complex, contemporary bioethical issues.

4.2.1 Ancient Interpretations

Accounts of the historical origins of the term dignity, generally commence with a description of its usage in the ancient world; as evidenced by the first recorded reference to the concept by Cicero, as well as its utilisation by the Stoics. Foster posits however, that traces of a regard for dignity predate written references and are evident in the pictorial representations etched on cave walls during the Upper Palaeolithic era or late Stone Age (2011:27)[52]. Such representations, depicting transformations in the burial of the dead from "[r]ed-ochre pit burials…[to] barrows and gorgeous mausolea" (ibid.), imply the observance of a particular decorum or respect for the deceased. The respect accorded to the dead in such instances, implies a reverence for human beings on account of their possession of some distinct quality, or simply due to their being human and not animal. This view accords with contemporary notions of dignity which claim that individuals are entitled to dignified treatment or respect on account of their inherent dignity, which is attributed to them due to their humanity.

The term dignity is etymologically derived from the Roman *dignitas,* which has several meanings. The Homeric interpretation of dignity associates it with qualities of excellence or exceptional behavior, displayed by individuals. Typical qualities viewed as dignified in this regard, are those generally associated with the Homeric heroes, namely, "bravery, war-craft, generosity etc" (Foster, 2011:27). However, the presence and display of such qualities are viewed as occurring on the basis of a deeper dignity possessed by the hero. In other words: one behaves in a manner that is admirable and displays such desirable qualities; because one is inherently dignified, rather than being dignified as a result of the display of admirable qualities such as bravery (ibid.). Here, we can discern an aristocratic notion of dignity as something possessed only by an elite minority, the heroes of the ancient world. In addition, the quality of dignity here, is bestowed upon an individual due to observances of it by others, rather than self-proclaimed. Dignity here, is thus 'relational', in that it is a constructed value which requires consistent demonstration of its ongoing presence, in order to elicit the esteem of others (Van der Graaf & van Delden, 2009:55).

[52] In addition, ornate graves have been discovered from this era, which have been proven to be at least 30 000 years old; in which bodies were buried with "personal and ritual items", appearing to lend support to this hypothesis (Upper Palaeolithic burials no more sophisticated than Neanderthals, 2013).

This aristocratic interpretation of dignity also informs the other classical Greek usage of the term; as that which "denote[s] high social status and the honours and respectful treatment that are due to someone who occupie[s a particular] position" (Rosen, 2012:11). The possession of dignity here has shifted slightly from an association with behaviour or admirable qualities, to a connection with a position or role in society. Both Homeric dignity and status dignity may vary to a greater or lesser extent, due to the fact that particular behaviours and societal roles may be associated with higher degrees of dignity than others.

In addition, the writings of Cicero evidence an alternate or anomalous interpretation of the notion of dignity, which reappears during the Renaissance and was developed in the Enlightenment period. In his *De Officiis (On Duties)*, Cicero does use the term to signify status, comportment or an honourable demeanour. However, he also alludes to "the dignity that human beings have solely because they are human, not animals" (in Rosen, 2012:12); in other words, human dignity. Cicero attributes this dignity to the inherent rationality of human beings, and argues that as a result of their rationality, individuals ought not to debase themselves, and this dignity, by pursuing a life of sensory enjoyment which he posits is at odds with their status as rational beings. Cicero argues that:

> it is vitally necessary for us to remember always how vastly superior is man's nature to that of cattle and other animals: their only thought is for bodily satisfactions…Man's mind on the contrary, is developed by study and reflection…From this we may learn that sensual pleasure is wholly unworthy of the dignity of the human race (in Rosen, 2012:12).

This notion of inherent human dignity, tentatively introduced by Cicero, seems to have been eclipsed by a focus on the ascetic or Stoic qualities of dignity, which prevailed during the subsequent Middle Ages. The Middle Age interpretation of human dignity thus associated it with the denigration of human bodiliness, in favour of the purity of the Christian soul (Foster, 2011:28).

What is important to note here, is that we have the origins of two distinct notions of dignity which have been the subject of extensive debate in recent decades. On the one hand, we can identify **dignity as a quality or characteristic** of individuals which may be associated with a particular position or role they occupy, or is displayed through their deeds. This dignity is possessed in varying degrees and may thus be lost or gained. On the other hand, we have the nascent presence of what is supposedly a decidedly modern and egalitarian idea, namely,

dignity as an inherent status or human dignity. This dignity is possessed by human beings on account of some quality they possess, which is viewed as distinctly human. Both notions of dignity were developed along different trajectories as a result of the rise of the Judeo-Christian religions during the Middle Ages.

4.2.2 Judeo-Christian Interpretations

A discussion of the Judeo-Christian usage of dignity is of particular pertinence, due to the fact that there is much evidence indicating that its contemporary usage appears to be imbued with religious associations, which are implicitly assumed as grounds for why human dignity should be respected in the first place. In fact, certain thinkers who view the concept with deep suspicion, do so based upon a perception that dignity is an inherently religious concept masquerading in a secular guise[53]. Meilaender, on the other hand, argues that it may be impossible to use notions of dignity, as associated with calls to respect the equality of all human beings based upon their inherent dignity, in a consistent manner; without taking into account the religious underpinnings that offer reasons for this attitude of respect in the first place (2009:262). Gelernter assumes a decidedly more vehement stance in this regard, arguing that the notion of human dignity is 'irreducibly religious', and therefore, that one cannot have "religious effects without religious causes" (2009:387-388)[54].

The Judeo-Christian interpretation of Human Dignity, originated in the Middle Ages and is founded upon the notion of the *Imago Dei*, referring to scriptural accounts that describe man as having been created in the image of God[55] This interpretation of dignity, accords an inherent value to humanity predicated upon its relationship to God, as creator; who in his absolute benevolence, omnipotence and omniscience, has chosen to create human beings, thus, warranting their treatment in a particular manner. The *Imago Dei* is also utilised to

[53] Macklin's essay *Dignity is a useless concept* (2003), mentioned above, implies this view; whilst Churchland argues that due to its "inherently ambiguous...[meaning, dignity] cannot be settled by appeals to religious authority…[but] must be worked out pragmatically" (2009: 99).

[54] The view that without a religious or metaphysical foundation to draw upon, calls to respect human dignity are on shaky ground, indicating the dubious nature of such calls in the first place, is one that was clearly held by Schopenhauer who argues that the "expression, dignity of man, once uttered by Kant, afterward became the shibboleth of all the perplexed and empty-headed moralists who concealed behind that imposing expression their lack of any real basis of morals, or, at any rate, of one that had any meaning" (Rosen, 2012:1).

[55] References to man's creation in God's image are however, not as prevalent in the scriptures as is generally presumed. The book of Genesis, in the old testament of the Christian and Hebrew bibles, refers to it; but as pointed out by Kraynak, these references do not explicitly state in what way man is constituted in the image of God. Kraynak argues however, that "the Bible grounds human dignity in God's 'mysterious election' rather than in essential attributes" (2009:74).

justify the elevation of humanity into a hierarchical position in the natural order of things that enables it to preside over the natural world and its non-human inhabitants[56] (Kraynak, 2009:75). There is evidence that Aquinas viewed dignity in a similar manner, as "something's intrinsic value – the value that it has by occupying its appropriate space within God's creation, as revealed by Scripture and by natural law" (Rosen, 2012:17). However, in the *Commentary on the Sentences*, Aquinas also defines dignity as signifying "something's goodness on account of itself" (in Rosen, 2009:16) which is a slightly different interpretation; and implies that human beings have dignity and value irrespective of the fact of their Godly creation. Augustine on the other hand, argues that this similarity we bear to God, resulting from our creation in his image, is reflected only in our souls rather than in our physical beings (Gaylin, 1984:18). In other words, it is only the human soul which has dignity. This view is congruent with a dualistic view of the human being and with the Stoic denigration of material sensory existence; in which the rational soul is favoured as the true essence of the human being, over the devalued material body.

Biblical accounts of the inherent value associated with human life are evident in the retributive justice advocated by the law of *Lex talionis*, generally understood as the awarding of punishment that is equal to the act perpetrated[57]. The linking of this inherent value with dignity, and the suitable punishment for its infringement, is evident in the writings of Aquinas who argued that "a man who sins deviates from the rational order, and so loses his human dignity" (in Foster, 2011:29). Such a position which views human dignity as something which can be impinged upon or lost through the behaviour or actions of an individual, seems to reflect a conflation of human dignity with aspects of dignity as a quality, referred to in the previous section. This position is clearly at odds with the claim that the inherent nature of human dignity is such, that it can never be eliminated; a view which came to dominate Christian thought, and is evident in the *Evangelium Vitae* written by Pope John Paul II in which he posits that "not even a murderer loses his personal dignity"[58] (1995).

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[56] This view is sometimes drawn upon as justification for practices of enhancement. In other words, our dominion over the natural world is argued to include ourselves, and thus awards us the freedom to transform the human body implying a "special responsibility on our part to perfect nature in order to finish God's creation" (Schulman, 2009:8).

[57] This is a line of thought which is developed by Kass in his dignity argument against transhumanism, and will be discussed in depth in the following chapter.

[58] A good example of a contemporary Christian ethics based interpretation of dignity is that of Pieper, who argues that "the human person has a value of its own which constitutes his dignity. This value is innate…indivisible, inalienable, unbalanceable [in that a price cannot be placed upon it]…cannot be lost…[is] underivable…[and] inviolable" (in Wolbert, 2005:1).

The relationship between inherent human dignity and the *Imago Dei*, to which it was attributed, was a subject of major interest during the Middle Ages. This entailed the search for consensus regarding the quality possessed by all human beings which is supposedly shared with a divine creator, and can thus be identified as the source of the value and special position of human beings in the order of things. This question of course predates its ponderings in the Middle Ages, as the time-old philosophical endeavour which seeks to locate a unique quality or characteristic which distinguishes human beings from animals, justifying the value of the former. Rather than unqualified acceptance of the value of the human being as directly attributable to the *Imago Dei* however, there is evidence of a growing desire for rational justification of this presumed value during the period of the Renaissance. The view of human dignity developed during the Renaissance, can be thought of as the foundation of the modern, secular interpretation of dignity; or as the bridge between the religious conception of dignity, characteristic of the Middle Ages and Kantian dignity, which will be discussed below. This Renaissance view was nevertheless, still deeply imbued with religiosity, due to the fact that the religious foundations of dignity were presumed as given. More attention was however given to the explication of the nature of this dignity, and in particular its implications for questions of equality and autonomy.

4.2.3 Dignity in the Renaissance

During the Renaissance, the Stoic association of dignity with human rationality was transformed. Rationality came to be viewed as the distinctive essence of the human being and the ground of human dignity. The shift towards humanism during this period, resulted in an amalgamation "of reason with autonomy, and therefore of dignity with autonomy...[As Foster eloquently puts it, t]he gift was the stamp of the divine: its status was dignity, its nature was reason, and its consequence was autonomy" (2011:34). This important shift, during which autonomy came to be associated with dignity, came to fruition during the Enlightenment.

A document which is ubiquitously cited, both in the literature regarding the history of the ideas which inform transhumanism as well as discussions pertaining to the notion of dignity, is the *Oration on the Dignity of Man*, written in the late fifteenth century by Giovanni Pico della Mirandola. A quote from this document, viewed as the seminal work of the Renaissance and the bedrock of the values espoused by modernity, was of course provided at the beginning

of this thesis and discussed in the introduction. Brians et al describe the momentous importance of this work, stating that:

> If there is such a thing as a 'manifesto' of the Italian Renaissance, Pico della Mirandola's 'Oration on the Dignity of Man' is it; no other work more forcefully, eloquently, or thoroughly remaps the human landscape to centre all attention on human capacity and the human perspective (1999).

In this remarkable work, Pico expounds the position that the human being is characterised by an indeterminacy of form which is the basis of human dignity and autonomy. In other words, he argues that the human being is created "neither of heavenly nor of earthly stuff, neither mortal nor immortal, so that with free choice and dignity, you may fashion yourself into whatever form you choose" (Pico della Mirandola, 1486 in Brians et al., 1999). Whilst this dignity is still posited as sourced in its being a product of divine creation, it represents the basis of secular interpretations of dignity which were developed during the Enlightenment period.

However, in keeping with the problematic nature of the notion of dignity, there are clear examples of the presence of competing notions of dignity during this period. Such an example may be found in the extended Latin version of Francis Bacon's work, the *Advancement of Learning* entitled *De Dignitate et Augmentis Scientiarum* (1645). This work contains three different interpretations of dignity, which are at odds with Pico's view of human dignity as an inherent status possessed by all human beings. The first interpretation views it as "a valuable characteristic" that may be present in both human and non-human entities, the second as "high social status" and the third, as evidenced by 'behaviour with a certain respect-worthy character" (in Rosen, 2012:16). Other mentions of dignity during this period, view it as something of value associated with abstract qualities or institutions, such as Milton's usage of it in terms of the dignity of marriage[59] and Pascal's association of dignity with thought[60]. If the seeds of dignity's relationship with rationality were sown by the Stoics and watered by Renaissance ideas which linked rationality with autonomy; the Enlightenment period may be seen as the soil in which the association between autonomy and dignity grew. The Enlightenment foundations of dignity, and more specifically its Kantian foundations, represent a watershed in the history and development of human dignity as the basis for human rights in general.

[59] This position is discussed in his work *Of the Doctrine and Discipline of Divorce* (1644)
[60] Discussed in his *Pensées* (1669)

4.2.4 Kantian Dignity

That Kant is generally considered the most influential thinker to have explicated the notion of human dignity, is attested to by the fact that virtually every foray into the nature of the concept contains reference to and discussion of its Kantian foundations. The Kantian conception of dignity may be seen as the locus of the concept's separation from its religious underpinnings[61]. This separation in turn, enabled the secular reinterpretation of human dignity as the basis of human rights, now present in a multitude of contemporary human rights instruments, bioethics charters and the constitutions of various nation states, which will be discussed in Section 4.2.6 Furthermore, as argued by Beyleveld and Brownsword, the Kantian notion of the inherent dignity of all human beings, represents a pivotal rupture with the 'hierarchical' or elitist interpretations of dignity which viewed it as a quality of the behaviour of an individual, or associated it with particular societal positions (2001:52). Kantian dignity is therefore a decidedly egalitarian dignity.

The predominant source of Kant's ideas on dignity may be found in the *Groundwork of the Metaphysics of Morals* (1785). For Kant, dignity refers to the absolute, inherent and inalienable moral worth or value[62] which characterises the human being. This worth is based upon the fact that Kant views human beings as intrinsically rational. On account of this rationality, human beings are able to exercise autonomy, enabling them to create and adjudicate moral laws. They are then able to universalise these moral laws as maxims, which may be followed through choice and respected in others. Kant argues that "the dignity of man consists precisely in his capacity to make universal [moral] law, although only on condition of being himself also subject to the law he makes" (in Beyleveld & Brownsword, 2001:52).

The basis of Kantian moral theory is his *Categorical Imperative*, which may be construed in varying ways in accordance with the slightly differing uses to which it is put in his work. However, the most prevalent interpretations of the Categorical Imperative are generally presented as *The Formula of Universal Law* and *The Formula of the End in Itself*. The first

[61] Häyry explicates this view, and posits that Kantian dignity, as a *dignity of reason*, does not require respect in terms of its status as God-given, "[w]hat we respect in ourselves and in others is not divine creation, but the moral law dictated by our intellect" (2004:9). Rosen also argues that, for Kant, "the moral law which we must acknowledge as binding upon us is 'self-given'" (2012:25).

[62] Kant uses the German word *Würde* for dignity which may be equated with worth or value (Rosen, 2012:19). Therefore, the meaning of human dignity, as utilised by Kant, is best encapsulated by the untranslated, German word *Menschenwürde* (human worth/value).

formula states that one should "[a]ct only in accordance with that maxim through which you can at the same time will that it become universal law" (Kant, 2002:37). In other words, one's actions and behaviour should be guided by a rule which requires one to reflect upon what would occur were everyone else to act or behave in a similar way[63]. The second formula states that one should "[a]ct so that you use humanity, as much in your own person as in the person of every other, always at the same time as an end and never merely as a means"[64] (Kant, 2002:151)

What is the relevance of these laws then, for the way in which Kant utilises the notion of dignity? Kant argues that:

> [i]n the realm of ends everything has either a **price** or a **dignity**. What has a price is such that something else can also be put in its place as its *equivalent*; by contrast, that which is elevated above all price, and admits of no equivalent, has a dignity…Now morality is the condition under which alone a rational being can be an end in itself, because only through morality is it possible to be a legislative member in the realm of ends. Thus morality and humanity, insofar as it is capable of morality, is that alone which has dignity (emphasis added. Kant, 2002:52-53).

In the *Metaphysics of Morals* (1797), Kant further clarifies this position by arguing that the dignity of the human being lies in the fact that:

> he raises himself above all other beings in the world that are not human beings and yet can be used, and so over all things. But just as he cannot give himself away for any price (this would conflict with his duty of self-esteem), so neither can he act contrary to the equally necessary self-esteem of others, as human beings, that is, he is under obligation to acknowledge in a practical way, the dignity of humanity in every other human being. Hence there rests on him a duty regarding the respect that must be shown to every other human being (Kant in Beyleveld & Brownsword, 2001:52-53).

It is immediately clear in the above writings: the extent to which many of Kant's ideas inform, not only contemporary notions of morality[65], but also their presence in many of the arguments

[63] Here, "acts that are prohibited, according to Kant, are prohibited either because we cannot even think of their maxims (the principle behind them) being a universal law of nature or because we cannot will that their maxims become laws ('because such a will would contradict itself')" (Rosen, 2012:87).

[64] These formulae contain implicit duties, namely, a duty to oneself and to others (Rosen, 2012:87). The duty to others arises from the fact that whilst I as an individual am able to pursue my own ends, the freedom to do so is circumscribed by the fact that others have this same right, and thus cannot be impinged upon by my endeavours. Kant posits that "any action is right if it can coexist with everyone's freedom in accordance with a universal law, or if on its maxim the freedom of choice of each can coexist with everyone's freedom in accordance with a universal law" (Kant, 2002:24).

[65] The idea that one should treat others as you would wish to be treated is a modern day version of the Categorical Imperative. Treating others in such a fashion should, however, not be motivated by the desire to secure a positive outcome, or out of fear of a negative outcome. For Kant, doing the right thing is a duty that is required by us as rational beings, regardless of outcomes.

within the bioethics arena[66]. However, it is also evident that there is a tension in his conception of dignity, which due to the fact that the Kantian conception of dignity has endured, continues to plague its contemporary bioethical usage. As Beyleveld and Brownsword note, Kantian dignity on the one hand, advocates **empowerment**; which in terms of bioethics, would be relevant to the area of informed consent or patient autonomy. On the other hand, it implies **constraint**; which in terms of its bioethical use, is relevant for arguments which seek to restrain biotechnological practices which are deemed problematic including abortion, any practice which utilises and destroys embryos, such as stem cell research and of course genetic enhancement, and in particular transhumanism (2001)[67].

The source of dignity as empowerment lies in Kant's view of human dignity as the source of the worth of human beings. This worth is equally shared by all human beings, and bears an intrinsic relationship to their autonomy and rationality, which in turn grounds the call for the respect of equality of human rights. In this way, "the Kantian idea of human dignity involves and consists of a certain cluster of interrelated attributes, which together confer on persons a certain *status*" (Bedau in Beyleveld & Brownsword, 2001:53). This status entitles the individual to be treated in a particular manner. The Kantian source of dignity as constraint is of course evident in his formula of the end in itself, which regulates against the treatment of others purely as means to specific ends, but also importantly admonishes against actions which could be judged as compromising one's own dignity, by utilising oneself as a means, and thus objectifying oneself . For Kant, "our bodies are not things we own, items that are indistinguishable, in principle, from other sorts of alienable property" (Shell, 2009:339)[68].

Kant's work is a continuation of the enduring philosophical endeavour, mentioned above, which seeks to identify the unique quality possessed by human beings that distinguishes human existence from animal existence. In Kant's case, it is the possession of rational autonomy which manifests as an ability to formulate and abide by moral codes, which marks

[66] As explicated by Beyleveld and Brownsword, Kant's view may be used to condemn any form of "commercialisation of the human body [as] an affront to dignity (by putting a price on something that is beyond price)" (2001:53). In addition, arguments against transhumanism which claim it instrumentalises the human body, as a means to some end or by attempting to ultimately do away with it, can be viewed as originating in Kantian notions.

[67] In terms of its use in bioethical debates, Shell posits that "[f]or the liberal and secular left, [dignity] is generally associated with personal autonomy and expanded individual choice. For the conservative and religious right, it is generally associated with the sanctity of 'life' and related limits on such choice" (2009:333).

[68] The tension between dignity as empowerment and dignity as constraint and its implications for arguments against practices such as transhumanism will be explored further in Section 4.4.3.

the distinction, and is thus the source of human dignity. However, Kant's conception of the exempted status of human beings does not amount to a form of *speciesism*, referring to "an arbitrary privileging of the human species per se" (Beyleveld & Brownsword, 2001:53). As Wolbert argues, for Kant, human dignity is not grounded upon species membership "but on…moral capability" (2005:2). In other words, the capacity or potential for moral reflection and action is what gives human beings an intrinsic worth and thus dignity. Whilst it is presumed by Kant that only human beings happen to possess such moral capabilities, the focus on moral capacity, rather than species membership, implies that any other being who may be shown to possess such a capacity for moral reflection and action, will too be said to possess dignity in the Kantian sense.

This linking of worth or dignity with moral capabilities, of course, brings us to the crucial problem that is posed by Kant's moral philosophy, namely, if worth and thus dignity are linked with the capacity for moral thought and action, what is the status of human beings who do not possess such abilities? Examples of such cases would be foetuses and infants who have not yet acquired such capacities, patients in persistent vegetative state (PVS) and the mentally disabled who have either lost these capacities, through illness or accident, or have never possessed them. Here we meet with the limitations of utilising Kantian moral theory, or a purely deontological moral theory[69], without qualifying certain aspects that may result in problematic outcomes. The Kantian conception of human dignity has nevertheless influenced contemporary applications of dignity enormously. This will become increasingly evident as we move on to the next developments in the historical trajectory of the notion of dignity, as well as in Section 4.4 in which the conflicting interpretations of dignity will be addressed.

4.2.5 Dignity in the *Long Nineteenth Century*

As outlined by the Marxist historian Eric Hobsbawm, the long nineteenth century may be understood as the period commencing with the French Revolution (1789) and culminating

[69] This refers to the rule based theory of morality which is developed upon a Kantian foundation, and advocates the uncompromising adherence to specific rules, reflecting the view that actions have "*inherent* moral worth" (Van Niekerk, 2011:25). The obvious problem with deontologically based moral theories lies in their rigid adherence to particular rules. For example, such a theory would view lying as wrong in all circumstances, even if telling the truth in a specific situation produces dire outcomes. The common example which is generally provided to illustrate this point is that of the murderer who enquires as to the location of his prospective victim. Deontology would require that one furnish this murderer with the truth, which would lead to the death of his victim (ibid.). Deontology is therefore not an outcomes-based moral theory; rather, what matters is the intrinsic rightness or wrongness of specific actions.

with the onset of the First World War[70]. The societal changes wrought by the industrialisation of Europe and the rise of Capitalism, as well as political upheavals, such as the French Revolution and the anti-slavery movement which occurred during this period, may be viewed as the direct foundation upon which modern contemporary society is built (Rosenberg, 1995). These events inevitably impacted upon conceptions of human dignity, which moved towards becoming solidified as the grounds for affirming the equality of all human beings. The work of Kant, who has been described as "the philosopher of the French Revolution" (Smith, 1989:238), was integral to the changing political landscape during this time. This was not only due to his "uncompromising insistence on the freedom and dignity of man, but also for his rejection of all authority that does not stem from man's own critical rationality" (ibid.).

The use of dignity was however not unilaterally accepted during this period, being subject to critique not only by Schopenhauer, as mentioned in footnote 54, but also by other influential thinkers. In reaction to the use of the phrase, "the dignity of man", Marx argued that [s]uch 'empty phrases' about dignity amount to '[taking] refuge from history in morality'" (Marx in Rosen, 2012:41). The most vociferous attack on the use of the concept of dignity, however, came from Nietzsche who argued that "[s]uch phantoms as the dignity of man, the dignity of labour are the shabby products of a slave mentality hiding from its own nature" (in Lukacs, 1952). Despite such critiques, recourses to notions of dignity continued to grow in popularity during this period. However, actual clear definitions of the concept, so readily utilised, were virtually non-existent. Thomas Paine(1791), for example, refers to "the natural dignity of man" (in Foster, 2011:40) as the basis of his political theory whilst Schiller (1798) posits that if basic human material needs are met, "dignity will follow by itself" (in ibid.). Neither of the two however, offers any definition for the term.

The influence of the growing importance and belief in the equal dignity of all during this period was also felt in the anti-slavery movement in the United States. The third president of the United States, and primary author of the nation's *Declaration of Independence*, Thomas Jefferson, recognised a "built in ethic of dignity which all must recognise" (Montgomery,

[70] Hobsbawm explicates this entire period in his trilogy, *The Age of Revolution* (1962), *The Age of Capital* (1975) and *The Age of Empire* (1987).

2004:5). Jefferson allegedly[71] viewed slavery as a "hideous evil" (ibid. 6), and signed the law prohibiting the import of slaves into the United States in 1807. Whilst there was therefore a ground swell towards the adoption of this Kantian inspired, egalitarian notion of dignity, there is still evidence of the use of alternate interpretations of dignity during this period[72]. In addition, religious hierarchical interpretations of dignity remained prevalent, particularly within the Catholic Church. Dignity in this regard, was associated with the assuming of a particular place within society, the family and the church; rather than received simply as a result of being a rational, autonomous human being[73].

From this exposition of the historical development of the concept of dignity, it is clear that the notion is not a new one. Rather, its various interpretations and uses can be dated from classical antiquity through to the contemporary popularity it now enjoys. However, the watershed event which solidified dignity's importance in the human rights lexicon, occurred during the twentieth century with the atrocities perpetrated during the holocaust. After this catastrophic world event, calls for the respect for human dignity, or human dignity as the foundation of human rights, were incorporated into most of the international human rights documents and charters. It is to the use of notions of dignity in the twentieth century that we now turn.

4.2.6 Dignity in the Twentieth Century

As mentioned above, the twentieth century is the period in which the notion of human dignity was solidified as the primary justification for a host of secular human rights instruments and national constitutions, founded in reaction to the genocide of the holocaust. Whilst the contexts in which the term appears during the twentieth century are varied, it is clear that the Kantian conception of equally shared, "unearned human worth" (Debes, 2009:49), represents the dominant interpretation of dignity. In this regard, dignity has great appeal as "a core

[71] Historians are divided as to the precise nature of Jefferson's views on slavery, which is reflected in the sizeable literature dedicated to the subject. Whilst he held progressive views regarding equality and the eventual abolition of the ownership of slaves, Jefferson was, in fact, a Virginian plantation, slave-owner himself.

[72] An example of this is De Tocqueville's *Democracy in America* (1840), in which he posits that "[t]rue dignity in manners consists in always taking one's proper station, neither too high nor too low, and this is as much within the reach of a peasant as of a prince" (De Tocqueville in Rosen, 2012:47).

[73] The views of Pope Leo XIII illustrate this interpretation of dignity. In 1880, Pope Leo utilised the term to argue that women should submit to the will of their husbands in order that their "obedience shall be wanting in neither honour nor dignity" (in Rosen, 2012:49). Dignity in this regard, is associated with particular behaviour and may be possessed in degrees, signifying that it is dignity as a quality that is being referred to.

concept getting at what is distinctively human, commanding special moral attention" (Rolston, 2009:129). In addition, calls for the preservation of dignity wield a powerful and succinct message, as is posited by Woolman, who argues that the use of notions of dignity in the German constitution conveys the message of "never again"[74] (in Hale, 2009:103), and in the Israeli constitution of "never forget" (Barak in ibid.).

i) Dignity in Post-World War Two Human Rights Instruments

In the immediate aftermath of the Second World War, several prominent human rights instruments were drawn up, which either explicitly mention dignity as the foundation or justification for all human rights, equate it with other human rights or contain both interpretations. The *Charter of the United Nations* (1945), aims to "reaffirm faith in fundamental human rights, [**and**] in the dignity and worth of the human person" (in Schulman, 2009:12). Here, dignity is presented as an entitlement, alongside general human rights, and distinct from human worth with which it is prevalently equated. This document was followed by the *Universal Declaration of Human Rights* (UDHR) (1948), which argues for recognition "of the inherent dignity and of the equal and inalienable rights of all members of the human family…[as] the foundation of freedom, justice, and peace in the world" (ibid.). Here, we can see that dignity, together with human rights, is utilised as a justification for the awarding of particular entitlements. In both the *International Covenant on Economic, Social and Cultural Rights* (1966) and the *International covenant on Civil and Political Rights* (1966), viewed collectively along with the UDHR as the *International Bill of Rights*, human rights are not juxtaposed with dignity, but are rather posited as founded **upon** the inherent dignity of the human being (Beyleveld & Brownsword, 2001:12).

In addition, the notion of dignity is present in the *Geneva Convention* (1949), which is comprised of four conventions and three protocols. The Convention aims at establishing specific inviolable humane standards for war and has been endorsed by 194 countries. Article three of the third convention, addresses "outrages upon personal dignity, in particular, humiliating and degrading treatment" (in Rosen 2012:59), in terms of establishing a protocol for the treatment of prisoners of war. Such calls for the *dignified treatment* of individuals,

[74] Woolman extends this statement of 'never again' to include South Africa, whose constitution contains multiple references to dignity, which can be seen as a reaction to the country's history of apartheid (in Hale, 2009:103).

imply that to treat someone with dignity is to treat them with a respect owed to them by virtue of their humanity. In all of these human rights instruments however, dignity is referred to minimally after initial allusions to it, and thus it operates in the background, whilst human rights and what they entail serve as the primary vehicle of engagement[75].

ii) Dignity in Twentieth Century National Constitutions

The notion of dignity, whilst present in a limited number of pre-Second World War national constitutions, is explicitly mentioned in thirty seven post-World War Two national constitutions[76]. Of these references to dignity, we can identify four ways in which the notion is used. The first two utilisations were mentioned above, namely, dignity is alluded to in the preamble, implying its role as the foundation of what is to come; or, secondly, dignity is portrayed as a distinct human right itself. In accordance with the Geneva Convention's use of the term, dignity may also be used in connection with criminal justice, in terms of the just treatment of individuals; and lastly, dignity may be related to the economic realm, in terms of the just treatment of workers on both a macro and micro level (Human Dignity, 2011).

The presence of the notion of human dignity in national constitutions is most clearly illustrated by its role in the German *Grundgesetz* or *Basic Law* (1949), which as Rosen argues, represents the most pronounced legal entrenchment of dignity in existence to date (2012:77). The Grundgesetz opens with the statement, "[h]uman dignity is inviolable. To respect and protect it is the duty of all state authority" (in Schulman, 2009:12-13). The second clause states that "[t]he German people **therefore** acknowledge inviolable and inalienable human rights as the basis of every community of peace and of justice in the world" (emphasis added, in Weithman, 2009:435). It is clear that human dignity here is viewed as the foundation of all human rights, rather than merely as one of many rights. In terms of the practical application of the principles of dignity outlined in the Grundgesetz, the

[75] After appearing in the preamble to the UDHR, dignity appears only two more times in the entire document. The first instance states that "the realisation of economic, social and cultural rights is indentified as 'indispensible for [the] dignity [of the individual]'"; whilst the second claims that "the right to just and favourable remuneration for work is…essential for 'an existence worthy of human dignity'" (in Mann, 1998:31). Both uses of dignity here imply its foundational role, rather than its sharing an equal status with other human rights.

[76] Instances of the use of human dignity as a foundational right in pre-World War Two constitutions include: the constitutions of Estonia (1919), Ecuador (1929) and Nicaragua (1939). In 2000, a study found that 70% of all national constitutions contain references either to human dignity or the 'dignity of man' (Human Dignity, 2011).

notion has been employed by the German constitutional court in a number of cases[77], and also as a means of restricting particular practices that are viewed as impinging upon human dignity, namely, "torture, slavery, genocide, subjection to humiliating or inhuman punishment, kidnap, stigmatisation, the destruction of so-called 'valueless life,' and human experimentation" (Rosen, 2012:78). Whilst the above examples demonstrate the various ways in which the notion of dignity may be applied, it nevertheless occupies a background, or foundational, role in the Grundgesetz and receives scant explication.

The South African constitution however, is interesting, in that dignity is employed both as a foundational notion, as well as a right or entitlement which requires protection. The constitution states that "[e]veryone has inherent dignity [implying a background idea] and the right to have their dignity respected and protected [implying a foreground claim]" (Beyleveld & Brownsword, 2001:13). This latter claim for the respect of dignity as one of many existing human rights, immediately invokes the question regarding what actions must be performed or avoided in order to ensure the respect and protection of dignity, or refrain from its violation. Such questions may, however, only be answered if the concept of dignity itself has received adequate explication; which, in the human rights instruments and constitutions mentioned above, is conspicuous in its absence.

There are a number of possible reasons for this dearth of clarity regarding instruments which employ dignity and yet fail to adequately define it. The initial and obvious response would be that the concept is just too difficult to define; owing to competing interpretations, all of which claim equal validity in different contexts, and in accordance with the way in which the concept is employed. Another more interesting explanation for this, specifically in the context of human rights instruments, may be that the lack of definition is intentional. Schultziner argues that

> while human dignity in these documents plays the role of a supreme value on which all human rights and duties are said to depend, the meaning content, and foundations of human dignity are never explicitly defined. Instead their affirmations of human dignity reflect a political consensus among groups that may well have quite different beliefs about what human dignity means, where it comes from, and what it entails. In effect, 'human dignity' serves here as a placeholder for 'whatever it is about human beings that entitles them to basic human rights and freedoms'. This practice makes a

[77] Examples range from the rejection of "life sentences with no possibility of release, plac[ing] limits on surveillance of private residences, to block the proposed compulsory gathering of census data, to uphold bans on peep shows, as well as, recently, to strike down a law permitting the shooting down of hijacked airliners to prevent their being used by terrorists in suicidal attacks" (Rosen, 2012:78).

> good deal of sense. After all, what mattered most after 1945 was not reaching agreement as to the theoretical foundations of human dignity but ensuring, as a practical matter, that the worst atrocities inflicted on large populations during the war (i.e., concentration camps, mass murder, slave labour) would not be repeated. In short 'the inviolability of human dignity' was enshrined in at least some of these documents chiefly in order to prevent a second Holocaust (in Schulman, 2009:13).

Glendon concurs with this observation, arguing that in terms of the UDHR:

> the drafters of the declaration were keenly aware that their goal was a political consensus, not a philosophical or moral treatise on human nature and the rights and dignities attending human nature. Given the enormous cultural, religious, intellectual, and ideological diversity of those involved, a political consensus was a great achievement" (in Neuhaus, 2009:218).

Such explanations, which attempt to account for the lack of clarity regarding definitions of the notion of dignity despite its prevalent usage, seem to make intuitive sense, in terms of the particular twentieth century context in which the concept was thrust to the foreground. This lack of definition is nevertheless problematic, due to the fact that recourse to human dignity has not receded into the background. On the contrary, there has been a resurgence in the utilisation of the notion of dignity in the last thirty years, particularly in the field of bioethics. The notion, whilst readily employed, is nevertheless still plagued by ambiguity, and a distinct lack of consensus in terms of what it actually refers to. Before commencing with a conceptual analysis of the term however, it is necessary to firstly discuss the use of notions of dignity in bioethics.

4.3 Bioethics and Human Dignity

4.3.1 Dignity in Bioethics Instruments

Bioethics, as a particular delineated realm of focus, may be viewed as coming into existence primarily as a result of the atrocities related to human experimentation that were perpetrated by various Nazi medical practitioners in the concentration camps during the Second World War. The *Code of Nuremberg* (1947) and the *Declaration of Helsinki* (1964), were drawn up in order to entrench a clear code of conduct in the biomedical and scientific professions. These codes aimed at instilling an overall respect for human rights, in terms of an emphasis on informed consent and the autonomy of the patient, in all matters pertaining to research and treatment. The latter declaration explicitly states that "it is the duty of physicians who participate in medical research to protect the life, health, dignity, integrity, right to self-determination, privacy, and confidentiality of personal information of research subjects" (in

Foster, 2011:91). Dignity is also explicitly referred to in the *International Code of Medical Ethics* of the World Medical Association (1949). The code outlines the duties of physicians and emphasises the provision of "medical service in full technical and moral independence, with compassion and respect for human dignity" (ICME, 1949). Whilst the notion of dignity is thus present in a very general and undefined sense in these founding bioethical documents, a distinct shift in its utilisation is evident in the bioethics instruments that came into existence in the 1990s.

In these later documents, the call to respect human dignity is explicitly and extensively stated; rather than serving as a background mechanism, akin to its role in post Second World War human rights instruments and national constitutions. In order to illustrate this point it is necessary to discuss certain relevant examples. The Preamble to The Council of Europe's *Convention on Human Rights and Biomedicine*[78], argues that "the misuse of biology and medicine may lead to acts **endangering** human dignity [therefore it is imperative to] take such measures as are necessary to **safeguard** human dignity" (emphasis added. Oviedo Convention, 1997). The *Explanatory Report* for this document states that "human dignity…constitutes the essential value to be **upheld**…[and] is at the basis of most of the values emphasised in the Convention" (emphasis added. In Beyleveld & Brownsword, 2001:30)[79].

UNESCO's *Universal Declaration on Human Rights and Biomedicine* (2005) and its *Universal Declaration on the Human Genome and Human Rights* (1997) both contain extensive calls for the respect of human dignity. The former declaration is imbued with the underlying emphasis that "human dignity should not be a casualty of scientific progress" (in Foster, 2011:89). In article one of the latter declaration, quoted in the opening pages of this thesis, it is specifically posited that "the human genome underlies the fundamental unity of all

[78] The full name of this convention is: *The Convention for the Protection of Human Rights and Dignity of the Human Being with Regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine.* It is generally referred to as *The Oviedo Convention*.

[79] Further separate protocols to the Oviedo Convention were created. The *Additional Protocol to the Oviedo Convention, concerning Biomedical Research* states that "biomedical research that is contrary to human dignity and human rights should never be carried out…[and that] parties to this Protocol shall protect the dignity and identity of all human beings" (Oviedo Convention, 1997). The Protocol which legislates the *Prohibition of Cloning Human Beings* (1998) states that cloning represents the "instrumentalisation of human beings…[and is thus] contrary to human dignity" (ibid.). *The Protocol concerning Transplantation of Organs and Tissues of Human Origin* (2002) and *The Protocol concerning Genetic Testing for Health Purposes* (2008) address the areas of transplantation and genetic testing as requiring specific guidelines due to their vulnerability to affronts on human dignity (ibid.).

members of the human family, as well as the recognition of their inherent dignity and diversity. In a symbolic sense, it is the heritage of humanity" (UDHGHR, 1997). This passage is ubiquitously cited in the anti-enhancement literature; particularly in the work of bioconservative thinkers. UNESCO's *International Declaration on Human Genetic Data* (2003), states that its aims are "to ensure the respect of human dignity and protection of human rights and fundamental freedoms in the collection, processing, use and storage of human genetic data" (IDHGD, 2003).

4.3.2 The Utilisation of Notions of Dignity in Bioethics Instruments

The examples above, list but a few of the many bioethical instruments which take extensive recourse to notions of dignity. The purpose of having detailed these various usages is to illustrate the change, referred to above, in the role given to dignity in these documents. Not only has dignity moved from a background role and brief mention in the preamble, as was the case in the older human rights documents; but it is now alluded to extensively. In addition, it is now clear that dignity is employed as a means of constraint, regarding certain practices deemed offensive, rather than utilised in an empowering capacity, in terms of it being an entitling force which secures human rights. Dignity itself, is now presented as something which requires protection, as evidenced by the emphasised words on the previous page. This constraint is particularly evident in the way in which the various documents approach beginning of life cases, as well as their prescriptions regarding autonomous actions or behaviours performed by individuals which are deemed problematic, in terms of their effects on the dignity, not only of the individual in question, but of humanity as a whole.

In terms of the protection of nascent human life, during the drafting of the Oviedo Convention there was disagreement regarding the point at which a foetus may be awarded protection in terms of an observance of its human rights. This issue was resolved by Article One which states that the convention protects "the dignity and identity of all human beings and guarantee[s] everyone, without discrimination, respect for their integrity and other rights and fundamental freedoms with regard to the application of biology and medicine" (in Beyleveld & Brownsword, 2001:31). By distinguishing between **everyone** and **all human beings**, this implies a compromise between those who challenge the view that the foetus is a bearer of rights, and those who argue for the recognition of rights from conception. Whilst it may be contested that **everyone** (ie the foetus) is a bearer of rights, it is agreed that **all human beings**

(including unborn human beings) require protection in terms of their dignity alone. As Beyleveld & Brownsword argue, "what human dignity does is to offer a *direct* justification for protection (human life having dignity)" (2001:33), rather than previous usages of it which juxtaposed it with human rights and thus utilised it indirectly to award protection to the human being. Dignity here is presented as fundamental and prior to human rights; it now stands alone.

The new utilisation of dignity as a form of constraint, not only serves as a means of protection against assaults on the dignity of individuals, but also against possible self-infringements of one's own dignity. In this conception, we arrive at the heart of the conflict between the utilisation of dignity as a source of empowerment versus dignity as a form of constraint; which is of utmost relevance in terms of the way in which the latter is utilised in arguments against transhumanism. It does not seem to be mere coincidence that dignity, which had always occupied a background and empowering role in human rights instruments, came to be emphasised as a primary mechanism, and in particular as a means of constraint, in bioethics instruments. This increasing use of dignity as a form of constraint has coincided with growing unease regarding the nature and effects of emerging biotechnologies, in particular genetic interventions[80] (Beyleveld & Brownsword 2001:10).

An additional reason for the turn from an emphasis on dignity as empowerment to dignity as constraint, may be due to a perceived need to counteract the dominance of the principle of autonomy in bioethics (ibid. 41). As previously mentioned, the notion of human dignity was able to serve as a symbol of what was violated during the Second World War. The autonomy of millions was of course what was utterly disregarded, and its future protection was therefore the goal of ensuing legislation. Thus, conceptions of dignity as empowerment, associated with autonomy, came to predominate. However, the appeal of human dignity lies in its ability to signify what is valuable about human beings, and therefore, its propensity to capture something more fundamental that had been violated in these circumstances. What was at

[80] Kraynak has argued that contemporary bioethics "policy debates revolve around a few moral principles that might be summed up in three terms – utility, the advancement of knowledge, and human dignity…[the first refers to] promoting the greatest happiness of mankind by relieving human suffering and improving the human condition…the second [refers to] progress…[and the third] is often raised to slow down or prohibit scientific experimentation on the grounds that it 'violates human dignity'" (2009:61-62). Kraynak's association of human dignity with constraint rather than empowerment, typifies the bioconservative use of notions of dignity. Thus, for the purposes of this thesis, which is to address arguments claiming that transhumanist aims are an affront to human dignity, it is clearly notions of dignity as constraint that represent the point of entry with which we must engage.

stake after the Second World War was not only the protection of human rights, including human autonomy, but ultimately the protection of human value and worth. Dignity was the most powerful means through which this protection would be ensured.

This strong historical association of human dignity with autonomy has resulted in formidable opposition to uses of the concept in bioethics, on the grounds that appeals to human dignity are nothing more than disguised appeals to respect for the autonomy of individuals[81]. It must however be noted, that this shift from a focus on empowerment to constraint in bioethics does not mean that the former interpretation is no longer employed. In fact, one of the sources of the confusion which plagues the concept arises from the fact that both interpretations continue to coexist. The interpretation of dignity as empowerment is still very much present, as a means of both protecting and affirming the rights of the individual patient against the collective might of the biomedical profession, but it now has a competitor, in the form of dignity as constraint. This emphasis on dignity as empowerment is however beset by the same predicament as that of autonomy, mentioned in Section 4.2.4, which addressed Kantian dignity. In other words, if our dignity is linked to our autonomy, then how may it advise us on a course of action in cases where individuals have not yet developed a capacity for autonomy, have lost it or have never and will never possess it?

An alternative way of formulating the above interpretation of the importance placed on autonomy, would be to reframe it in terms of the fact that it has resulted in an overemphasis or "over-correction in favour of individual choice…[at the expense of collective] flourish[ing] relative to the standards of a civilised society" (Beyleveld & Brownsword, 2001:41-43). Dignity interpreted as constraint is a means of removing the emphasis from the individual human being to humanity in general, and thus, aims to restore balance in this regard. Whilst, as Rendtorff argues:

> dignity refers to the inviolability of individual human life [a dignity as empowerment interpretation…i]t further expresses the moral responsibility of the human person. This idea of dignity must be respected in the intersubjective relations of the kingdom of ends-in-themselves [a dignity as constraint interpretation] (2002:237).

The latter understanding of dignity is therefore, a means of limiting or preventing actions regarded as problematic or taboo, in order to direct human behaviour in a manner in which

[81] This matter will be discussed in Section 4.3.4.

civilised coexistence in society is ensured. Thus, we see a major tension between the use of dignity as a tool to promote individual autonomy, on the one hand; and on the other hand, to "assert collective control over the exercise of autonomy…or individual choice" (Beyleveld & Brownsword, 2001:44). Dignity as constraint, in terms of its ability to attenuate the perceived excessive focus on autonomy, is nowhere more clearly evident than in the position assumed by members of the President's Council for Bioethics in the United States in the first decade of the twenty first century.

4.3.3 The President's Council for Bioethics

The President's council for Bioethics was created in 2001 by the current president of the United States at that time, George W. Bush, and dissolved in 2009, when President Barack Obama came into office[82]. The council was initially headed by Leon Kass (2001-2005), who was succeeded by Edmund Pellegrino (2005-2009). During its tenure, the council approached bioethical issues from a decidedly bioconservative position, prodigiously invoking the concept of human dignity as a means of opposing particular technologies, for which it received an immense amount of criticism. Criticisms focused upon the absence of the council's clarification of the concept of human dignity[83], and the use of the concept as a metaphysical or religious 'tool' to reject any practices deemed problematic from the Judeo-Christian viewpoint, such as "abortion, embryo research, cloning, stem-cell research, assisted suicide, and human enhancement" (Meltzer, 2008:660). Kass himself describes one of the purposes of the formation of the council as: a means of protecting human dignity from "shallow 'scientistic' thinking" (2009:299). In particular, he states that the council aims to protect:

> the dignity of human difference, threatened by research that would produce man-animal or man-machine hybrids…the dignity of psychic integrity, threatened by chemical interventions that would erase memories, create factitious moods, and transform personal identity; the dignity of human self-command, threatened by methods of behaviour modification that bypass human agency; the dignity of human activity and human excellence, threatened by reliance on performance-enhancing or performance-transforming drugs, the dignity of living deliberately and self-consciously, mindful of the human life cycle and our finitude, threatened by efforts to deny or eliminate aging and to conquer mortality (ibid. 298-299).

[82] The reason given for its dissolution was President Obama's preference for a practical approach to biomedical issues and policy formation, rather than the more philosophical approach which had been assumed by the council during the Bush Administration.
[83] The most notable example of such criticisms is Ruth Macklin's essay mentioned in Section 4.1

The aims listed above are, of course, those associated with enhancement, and more specifically transhumanism[84]. The various publications produced by the council include the anthologies, *Human Cloning and Human Dignity* (2002) and *Human Dignity and Bioethics* (2009). These volumes have received much criticism; the latter, for the affiliation with, or employment by, religious institutions, of more than half its authors, as well as the fact that a substantial number of its authors have written articles for bioconservative journals. The bioconservative approach taken by the council, and their power over biomedical policy decisions during their period of tenure, has been viewed by many as directly responsible for the impediment of important advances in medicine in the United States, such as stem cell research. In addition, the council's extensive use of the concept of human dignity, without attempting to clearly define it, seems to have provided a solid example of the supposed inherent flaws of the concept. This has led to doubts regarding the efficacy and credibility of the concept as a tool in bioethics, bringing it into disrepute. However, the fact that the concept may have lost credibility, leading to calls to dismiss it from bioethics, is complicated by the fact that this call for rejection is not unanimous; which is evident from the extensive engagement with it in bioethics literature. In addition, its enduring presence in the bioethical and human rights instruments, discussed above, as well as in legal settings; and its ongoing usage in everyday settings, is a further complication. Furthermore, those who are skeptical as to the usefulness of the concept as a tool for assisting in bioethical matters do not disavow the importance of the idea of human dignity itself. As Ashcroft argues, "dignity skeptics mount their critique by attacking dignity based theories, rather than dignity as such" (2005:679). What then are the varying positions held in the field of bioethics regarding human dignity?

4.3.4 The Different Positions in Bioethics Regarding Dignity

i) Dignity Cannot be Defined and is Therefore Meaningless

Ashcroft identifies three positions assumed by bioethicists regarding their views on the concept of human dignity[85]. The first approach, epitomised by scholars such as Ruth Macklin, posits that the use of dignity is "incoherent and at best unhelpful, at worst

[84] The dignity arguments of President's council members, Kass and Fukuyama, will, of course, be discussed in great detail in the following chapter.
[85] Ashcroft presents four positions rather than three. However, the distinction he makes between the second and third position will be conflated here, due to the fact that both approaches are based upon the view that dignity is being used as a substitute for other values.

misleading" (Ashcroft, 2005:679). Macklin argues that "appeals to dignity are either vague restatements of other, more precise, notions or mere slogans that add nothing to an understanding of the topic" (2003:1419). She posits that rather than utilising the concept as a replacement term to signify ethical concerns derived from principles such as the respect for persons or autonomy, which is she argues, how it is generally utilised, it may be "eliminated [from medical ethics] without any loss of content" (ibid. 1420). Macklin's highly influential critique of notions of human dignity in bioethics has resulted in what Kirchhoffer describes as a crisis for the validity and perceived efficacy of the concept of human dignity (2011:141).

Other influential thinkers who have developed Macklin's views on dignity include: Peter Singer, Steven Pinker, John Harris and Helga Kuhse. Singer views the use of dignity as an "alternative to proper analysis…[utilised by] those who have run out of arguments" (in Foster, 2011:59). Harris argues that whilst it is understandable that recourses to notions of dignity are alluring, "they are also comprehensively vague" (1989:163). He discusses the way in which dignity is utilised to condemn the practice of human cloning as an example of 'olfactory moral philosophy', referring to the practice of utilising "moral sentiments, or…gut reactions [as a means of determining] what is morally permissible" (ibid. 166). This notion bears similarity to Kass's idea of the wisdom of repugnance, mentioned in Section 3.1. However, unlike Kass, who posits the relevance of such intuitions, Harris is highly critical of this type of 'wisdom' due to the tendency of such feelings of moral outrage to be linked to what are little more than idiosyncratic preferences, discriminatory tendencies or blatant intolerance. Such positions, which cite violations of dignity, are Harris argues, not based upon coherent argumentation; which becomes clear if one enquires as to "whose dignity is attacked and how?"[86] (ibid. 163). Kuhse argues that "dignity is a 'slippery' concept that draws 'moral boundaries in the wrong places', and that 'it…might be better if [human dignity] were once and for all purged from bioethical discourse" (in Van der Graaf & van Delden, 2009:152).

Pinker describes dignity as a "squishy, subjective notion, hardly up to the heavyweight moral demands assigned to it" (2008). He argues that dignity contains three features which prevent

[86] An example of how the answer to this question can reveal the flaws in particular arguments is the position that views human cloning, in terms of its replication of the genome of an individual, as a violation of dignity. Harris posits that if one claims that the dignity of the cloned individual, or the clone, is violated due to the replication of the genome of the original, then one must explain how it is that monozygotic twins share a genome without any concern for the possible impairment of their dignity.

the concept from being of genuine use in bioethics. Firstly, "dignity is relative" (Pinker, 2008), referring to the fact that its meaning is subject to contextual and historical change. Secondly, "dignity is fungible" (ibid.). In other words, whilst it is presented as inviolable by those who view it with reverence, Pinker argues that most individuals exchange their dignity for things that are viewed as more important[87]. Thirdly, "dignity can be harmful" (ibid.), referring to the fact that the vague nature of the concept allows it to be utilised in support of repressive agendas. Pinker does however investigate the possibility that there are aspects of dignity that may be of use. Firstly, the concept represents "one of the interests of a person, alongside bodily integrity and personal property, that other people are obligated to respect" (Pinker, 2008). In terms of bioethics, dignity would operate as a guideline for the respectful treatment of patients. However, as Pinker points out, close analysis may lead to this interpretation of dignity being equated with autonomy, due to its emphasis on "treating people in the way that they wish to be treated" (ibid.). Secondly, whilst the concept is problematic, it is clear that individuals possess a clear conception of what it means for dignity to be violated. In this way calls to disregard dignity may be dangerous.

Other thinkers such as Bagaric and Allan argue that dignity is used as a foundation for human rights by those who eschew consequentialism, but realise the tenuous ground upon which their calls to respect human rights lie, in the absence of reasons which are based upon the maximisation of utility as their foundation (2006:260). In such cases, the answer given to why or upon what basis human rights should be respected is dignity. Bagaric and Allan posit that rather than being the panacea of those searching for means other than consequentialism to shore their rights claims, dignity is a term "so elusive [that it is] virtually meaningless…[and is] used by academics, judges, and legislators when rational justifications have been exhausted" (ibid. 260). The most acute cause for concern regarding the concept, however, lies in the vastly different uses to which it may be put, based on its conflicting interpretations; in other words, the fact that it may be used coherently in support of opposing positions in an argument[88]. Here it is clear that Bagaric and Allan are referring to dignity's use as a means of

[87] Examples given by Pinker here, concern the undignified aspects of behaviours people freely engage in; such as sexual acts or permitting decidedly undignified medical procedures to be performed on oneself for health reasons.

[88] An example of such an instance is the role of dignity in arguments both for and against voluntary euthanasia, in cases where patients are subject to extreme suffering due to a terminal illness. In such cases, it is argued, on the one hand, that unnecessary suffering violates the dignity of the individual in question and therefore, as an autonomous human being they ought to be permitted to decide whether or not to choose to end their own lives and thus their suffering. This position is opposed on the other hand, by the argument which claims that because

either empowerment or constraint. Ashcroft regards this first approach to dignity as the predominant view held by American and British bioethicists.

ii) Dignity is Equivalent to Autonomy or Other Human Rights

The second prevalent view of human dignity argues that when we refer to a respect for human dignity, what we intend by this is a respect for human autonomy. Dignity is therefore "reducible to autonomy" (Ashcroft, 2005:679). Arguments in this regard, generally proceed by establishing that human dignity is founded upon the intrinsic worth of all human beings. This intrinsic worth implies, or is manifested as, the right to freely pursue a life characterised by flourishing. Beyleveld and Brownword espouse this view in their overarching argument that dignity is enmeshed with the human right to choose freely, and thus with human agency (2001). In order to ensure the respect of one's personal agency, one must, of course, behave in a consistent manner, which is manifested as respecting and not infringing upon the agency of others. This position would therefore argue that if we are asked to explicate what we mean by dignity, this meaning will ultimately be associated with autonomy and thus, we may abandon the use of the concept of dignity in favour of autonomy. It must be noted however, that it is a dignity as empowerment interpretation that is arguably synonymous with autonomy. The conflation of dignity with autonomy does not necessarily apply to a dignity as constraint interpretation.

In a similar vein, dignity may also be viewed as belonging to a group of similar concepts, related to "capabilities, functionings, and social interactions" (Ashcroft, 2005:679), and is typified by the work of Amartya Sen and Martha Nussbaum. This approach to dignity is connected to the previous approach in that thinkers who view dignity in such a way, conflate it, or link it, with other principles. Nussbaum, for example, concurs with Rawls that it is extremely difficult to utilise dignity alone as a foundation for other rights, due to its conflicting interpretations and therefore, it is only meaningful when understood in terms of certain political principles. In her dignity-based capability approach, Nussbaum outlines ten basic capabilities which are "necessary conditions of a life worthy of human dignity" (2009:351), and without which, flourishing will not be possible.

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all human beings possess a dignity or intrinsic worth, to end any human life prematurely is violation of this, and should thus not be permitted.

iii) Dignity is the Foundation of Human Worth and Thus of Human Rights

The final approach encompasses a number of diverging views regarding dignity with the unifying factor consisting in the view of dignity as having some form of 'objective' existence[89]. This approach is generally held by those who regard dignity as either religiously or metaphysically founded, and posits that its importance as a "property possessed by all and only human beings,…which serves as a foundation for moral philosophy and human rights" (Ashcroft, 2005:679) is a self-evident truth which is intuitively known. In terms of religious interpretations, as discussed in Section 4.2.2, human dignity originates in our having been created in the image of God. Whilst bioethics has emerged as a secular discipline, thinkers such as Gelernter argue that concepts such as human dignity, which are utilised in this area, are profoundly and inescapably religious, and any calls to respect it may be equated with a call to respect human sanctity (2009:395). Human dignity, according to this argument, is thus a secularised version of human sanctity that has attempted to disguise its religious foundations. The problem here, Gelernter argues, is that such a call must be founded upon something; and without a religious foundation the call to respect human dignity has no answer to the question which asks *why* it must be respected (ibid. 397).

The notion of human dignity is also utilised extensively by those who would argue for its objective existence without recourse to religious foundations. In terms of its secular use, the emphasis on dignity as inherent to all human beings entrenches the view that because dignity and the human rights it grounds are not given by an external source or "authority…[it] therefore may not be taken away" (Schachter, 1983:853). Applied in a bioethics context, the inherent dignity possessed equally by all human beings is the foundation and justification for the individual human right to be treated in a specific way in a medical context. However, a contradiction once again rears its head with the coexisting view that this inherent human dignity as a collectively shared value requires protection from biotechnology itself. This final approach which views dignity as a useful concept, and therefore one which is able to offer

[89] This approach would be consistent with a cognitivist view of ethics; in particular, with moral realism. Cognitivism refers to the view that propositions assert facts and can thus be true or false. Moral realism, or ethical cognitivism, thus states that ethical statements are propositions and may therefore be true or false. Moral realism may be distinguished from another cognitivist view, namely, moral subjectivism. Whilst this view also posits that sentences containing ethical claims are propositions and can thus be true or false, this truth or falsity is posited as having arisen originally from human custom and attitudes. Thus, whilst both moral realism and moral subjectivism are regarded as cognitive theories of ethics, they differ in that the former position argues that values possess existence independent of human sentiment; whereas, the latter would view values as a product of human judgement.

guidance in bioethical conundrums, is posited by Ashcroft as the predominant view held by European bioethicists (2005:679).

The work of Kass, which will be discussed in detail in the following chapter, provides us with a clear example of how dignity is utilised in this regard. In particular, Kass's work illustrates how dignity is used by bioconservative thinkers who appear to present clear arguments but nevertheless, may be seen to make a metaphysical leap at some point in their arguments. Kass's view is metaphysical in that at its deepest foundation it aims for a safeguarding of the special moral status of human beings; or argues that human beings ought to behave and be treated in particular manner "solely because of their humanity" (Kass, 2009:298). Kass does build an interesting argument regarding the reconciliation of the opposing notions of dignity as empowerment and dignity as constraint; however, he cannot escape his assumption regarding the special status of human beings, as an intuitive given.

Arguments lodged against transhumanism which view it as a violation of human dignity generally utilise this seemingly secular notion of dignity. These arguments are therefore stating that attempts to transform ourselves, through the utilisation of various technologies, which may result in us no longer being human in terms of our physiological, emotive and intellectual capacities; are at odds with a respect for our human dignity and the dignity of humanity in general. Human dignity, according to such arguments, seems prima facie to preside in an acceptance or preference for the physiological form in which we find ourselves. To effect changes to ourselves by utilising external interventions in order to restore ourselves, if we are operating below a particular level of functioning to one that is congruent with a species typical level of functioning, is deemed not only acceptable but desirable. To improve somewhat beyond this level, utilising external interventions, is acceptable to a certain extent; but this acceptance would not necessarily be uniform and is dependent upon the nature of these external interventions. On the other hand, improvements to ourselves that are effected entirely through our own volition, striving or effort, are wholly admired. Improvements utilising external interventions which aim to go beyond a certain level, particularly those improvements which would result in noticeable changes in our physiology, capabilities or behaviour, are viewed with mistrust, a profound uneasiness or outright condemnation. This uneasiness, which increases at the prospect of further change, is what is associated with violations of human dignity.

A respect for human dignity seems therefore, to be associated with a particular attitude we assume towards ourselves. This attitude is one of acceptance and respect for what is given, of a striving to reconcile ourselves with certain aspects of our humanity, in particular our own mortality, and the way in which we exist as members of a collective humanity. According to this interpretation, to possess dignity is to display such an attitude. In this regard, whilst the concept may defy easy definition and is subject to contesting ideas, it is nevertheless a powerful one in that "[n]o other ideal seems so clearly accepted as a universal social good" (Schachter, 1983:849). Due to this association, the use of a dignity argument is a particularly effective tool to supposedly safeguard against any practice deemed demeaning or offensive; because the notion is unequivocally associated with the good. This association immediately presents the practice against which such invocations are used in a pejorative light, prior to any form of argumentation having taken place.

These three approaches serve the purpose of broadly illustrating the competing interpretations of dignity that are at play in its utilisation in bioethics. All three interpretations bear relevance to the discussion in the following chapter which will explicate and critique the dignity arguments employed by particular thinkers against transhumanism. Before commencing with this task however, the remainder of this chapter will investigate the concept of human dignity further, by elucidating several oppositions present in contemporary interpretations of the notion.

4.4 Defining Dignity: Congruencies and Conflicts in Interpretations

The preceding historical analysis of the notion of dignity, including its recent development in bioethics, presented a variety of interpretations of the concept which accord with particular purposes to which it has been put since its appearance in antiquity. However, before we address the seemingly inherent oppositions with which the concept is characterised, it must be noted that there are four underlying commonalities which may be identified regarding the various ways in which the term has been employed historically.

Firstly, dignity has generally signified the "**special status**" of human beings in some way; whether resulting from a particular societal position in antiquity, as a result of a divine relationship in a religious context or due to the possession of distinct human capacities (Van der Graaf & Van Delden, 2009:158). Secondly, dignity is founded on, or associated with,

"**essential human characteristics**" (Van der Graaf & Van Delden, 2009:158) such as the display of valour, moral rectitude and excellence, or similarities shared with the divine through the Imago Dei, and later with the possession of rationality and autonomy. Thirdly, human beings as "**bearers of dignity have to live up to this value**" (ibid.). This refers to the fact that there are duties or responsibilities associated with dignity which must be maintained through the actions and behaviour of individuals, such as a particular comportment regarding one's societal position or relationship with one's creator, or an attitude of respect for oneself and others. An emphasis on this aspect of dignity accords with its use as a means of constraint. Lastly, dignity refers to something that is a "**vulnerable human quality**" (ibid.) in that one's dignity may be diminished or lost completely. This may occur, for example, through a failure to perform one's duties adequately, due to the display or absence of particular behaviours or actions, as well as through the actions and behaviours of others[90]. In other words, my personal dignity may be violated not only by others, but also through my own actions.

These four characteristics of the notion of dignity seem to be present in virtually all historically documented uses of the concept; both in notions of human dignity and dignity as a quality, which will be discussed next. The matter that requires resolving is: whether these similarities point to a means of establishing one coherent concept of dignity; or are merely symptoms of a confusion and inconsistency regarding the way in which two historically constructed and distinct notions of dignity have been employed. At stake therefore, is whether or not the charges regarding the irrevocable vagueness of dignity, cited by thinkers such as Macklin, Singer, Harris, Kuhse and Pinker, are valid. If such charges are shown to be well-founded, then, the legitimacy of the use of the concept in bioethical dilemmas will be called into serious question. A symptom of this vagueness has already been alluded to above; namely, the fact that the concept may be used successfully on opposing sides of the same argument. The remainder of this chapter will thus be occupied with the explication of these oppositions.

[90] There are of course differences of opinions regarding whether or not dignity may be lost or not. Such confusion may arise from the conflation of distinct types of dignity which will be discussed below. However, at this point, it can be said that even if one argues that due to it being inherent, dignity cannot be lost, it is nevertheless clearly a quality that is vulnerable in some way, otherwise there would be no point in attempting to protect it. Positions which assume the inviolability of dignity generally also call for its respect or protection; implying that a failure to do so would render dignity vulnerable in some way.

4.4.1 Dignity as a Status (Human Dignity) vs Dignity as a Quality (Dignity)

The first opposition that will be discussed is the conflict between interpretations of dignity as a status and dignity as a quality. For our purposes, dignity as a status is synonymous with human dignity or *Menschenwürd*e, alluded to in footnote 62, which perhaps encapsulates its meaning more succinctly. Dignity as a status is inherent and unconditionally possessed by all human beings on account simply of their being human. It is also associated with the possession of – or with the potential for the possession of – particular human capacities, such as autonomy or rationality[91]. Dignity in this sense, concerns "what is distinctively valuable about 'being' human, by which is meant something like the experience of being human" (Debes, 2009:48). Dignity as a status is, of course, the type of dignity which is associated with a dignity as empowerment interpretation, and is thus employed as the foundation of human rights and certain bioethical instruments, discussed above.

Dignity as a status or human dignity must, of course, be distinguished from dignity as a quality. Dignity as a quality encapsulates a variety of interpretations which lend the notion a complexity that is not necessarily the case with dignity as a status. Bostrom defines dignity as a quality as referring to: "the **quality** of **being** worthy or honorable; worthiness, worth, nobleness, excellence" (emphasis added. In 2005c:6). This type of dignity thus possesses an active element in that it is made evident through the actions or behaviour of individuals or groups. In addition, what is interpreted as signifying the qualities associated with this interpretation of dignity is, of course, influenced by various contextual factors, and thus, dignity as a quality is a relatively subjective notion. The views of two thinkers, Kolnai and Nordenfelt, which have become canonical in the dignity literature, are able to further elucidate the nature of dignity as quality.

[91] Whilst there are thinkers who posit that dignity may be possessed by non-human animals, it is generally the case that this type of dignity is associated with human beings only, due to particular capacities they possess. This view does not however, exclude the possibility that if it was discovered that a particular species possessed certain capabilities, such as rationality or autonomy, members of this species could be viewed as bearers of an inherent dignity akin to human dignity. As Debes points out, in order to avoid charges of speciesism, or the arbitrary privileging of the human race, the possession of human dignity must be portrayed as "a distinctive value belonging to humans. This is not equivalent to [basing the possession of dignity upon] a value that belongs distinctively to humans" (2009:61). Avoidance of such confusion enables a focus rather on what the consequences of the possession of human dignity are, as opposed to who or what may be said to possess dignity or not.

Kolnai also distinguishes between dignity as a quality and dignity as a status. He argues that whilst dignity as a quality "bears an essential and inseparable evaluative note" (1976:257), it is predominantly a descriptive notion in that there is nothing inherent in the conception of dignity as a quality that insists that "it ought to be prized, praised, admired or revered". In order to explain this point, Kolnai distinguishes dignity as a quality from human rights, which he argues are prescriptive in that "disrespect of a right constitutes an offence; [whereas] indifference to dignity is only a defect, as is any lack of adequate response to a value" (ibid.). Human dignity, or dignity as a status, on the other hand, he views as ascriptive. Calls to respect it may accord with calls to respect human rights; however:

> it has something about it of a faceless and inchoate quasi-quality we 'ascribe' to persons as such, independently of their distinctive virtues, modes of bearing, and mental levels and attitudes. It demands respect, but its meaning does not consist just in that demand. 'Human Dignity' is not, like 'Dignity as a Quality', a matter of more of less, not a matter of virtue, accomplishment or refinement; rather, it seems to be something 'inalienable' much like the 'Rights of Man', and yet not quite in the same manner. Whereas the 'Rights of Man' can only be disregarded, negated, insulted, violated or 'suppressed', 'Human Dignity' can actually be impaired and destroyed, temporarily or irreversibly, like any real 'quality'. (Kolnai, 1976:258).

Nordenfelt explicates the concept of dignity by establishing four meanings that may be associated with the notion; all of which may be said to enjoy contemporary usage in one way or another. Firstly, "**Dignity as Merit**" (Nordenfelt, 2004:71) is based upon the ancient interpretation of the term that associates it with dignified conduct, as well as "excellence and distinction" (ibid.), in terms of the holding of a particular esteemed position, rank or office in society. Within this category, Nordenfelt distinguishes between "**formal dignities of merit**" (ibid.), which entail the conferring of respect through official recognition, and "**informal dignities of merit**" (ibid.), by which individuals are accorded respect due to their achievements. Examples of the former category would include: doctors, judges, members of the monarchy and parliament, military officials and positions of leadership within the church. Typical examples of informal dignities of merit include: those who excel in some way, such as in the areas of sports, the arts or academia. Such individuals do not possess official rights by way of their achievements, but nevertheless, are generally "treated as if they had such rights" (ibid. 72).

The second type of dignity as outlined by Nordenfelt is "**dignity as moral stature**" (ibid.). There are similarities between dignity as merit and dignity as moral stature in that both elicit respect as a result of particular behaviours or actions of the individual in question. The salient

difference between the two resides in the fact that the dignity of moral stature does not result in the awarding of any official rights. In a sense, this dignity is dependent upon the fact that its display is **not** associated with the conferring of privileges (Nordenfelt, 2004:73). Examples of individuals who may be viewed as possessing dignity as moral stature are: Nelson Mandela, Florence Nightingale, Gandhi and Mother Theresa, to name but a few.

The third type of dignity explicated by Nordenfelt, the "**dignity of identity**" (ibid.), is highly relevant for bioethics in general, and more specifically for arguments both for and against transhumanism. This type of dignity is wholly different from the preceding types of dignity due to its vulnerability which arises from the possibility that it can be removed "by external events, by the acts of other people as well as by injury, illness and old age" (ibid. 75). The dignity of identity arises through the formation of a coherent, independent sense of self, which encompasses the sum total of our past experiences and relationships as well as our projected future aspirations. It could be articulated as our sense of self-worth arising from the belief that our identity is a self-determined amalgamation of actions, decisions, experiences and values. This type of dignity, whilst associated with a sense of self, is, of course, relationally constructed in that our self-worth, based upon how we view ourselves, is inextricably linked to our relationships with others and our perceptions of how we are regarded.

It would seem that when references are made to violations of dignity occurring as a result of, for example: practices of torture, degrading treatment and physical or psychological abuse; this is the type of dignity that is in question. Furthermore, in a medical setting, the way an individual's identity may be compromised by the enforced assumption of the role of the patient, how others react to such a redefinition, as well as the indignities that must be endured as a result of a debilitating illness, are all characteristic of the dignity of identity. The dignity of identity also encompasses a particular type of dignity which is generally expressed in terms of the effects produced by its violation. This type of dignity includes an interesting class of cases in which the individuals in question are wholly unaware of any violation to their dignity, such as patients in PVS or mentally disabled patients, as well as the respect or reverence which is accorded to dead bodies. The concern which may be expressed for the dignity of those who are wholly unaffected by such violations; points to an interest in something that extends beyond the individual, to a desire to protect an abstract, collectively shared value. This value is intrinsically connected with human worth and implies the deeply communal nature of dignity. However, when articulated in such a manner, it is difficult to

discern between this type of dignity and human dignity or dignity as a status which is the final type of dignity explicated by Nordenfelt.

The difference between *Menschenwürde,* or human dignity as a status, the final type of dignity described by Nordenfelt and the preceding three types of dignity, lies in the fact that dignity in the first three may be gained or lost, as well as possessed in varying degrees. *Menschenwürde,* however, because it is possessed simply on the basis of being human, is inviolable; in that, "it cannot be taken from the human being as long as he or she is alive" (Nordenfelt, 2004:78).

In addition, Nordenfelt distinguishes between dignity as objective and dignity as subjective (2004:71). Dignity would be considered objective if it is not dependent upon external reinforcement or adjudication for its importance or 'existence'. Dignity as subjective, on the other hand, is generally contextually bound, in accordance with particular qualities or behaviours that may be esteemed by a specific group, culture or historical milieu. The four types of dignity explicated above, may be viewed on a continuum of increasing objectivity, in the sense presented by Nordenfelt. The dignity of merit most closely resembles a subjective dignity, due to the fact that the respect associated with specific official positions and particular achievements is subject to contextual variation. The dignity of moral stature moves from a subjective towards an objective dignity as there is greater synchronic and diachronic uniformity in what are viewed as morally admirable qualities. The very real implications of violations of the dignity of identity render it predominantly objective[92]. *Menschenwürde;* then occupies the furthermost position of objectivity on the continuum, due to the fact that the equating of human life with value seems to be a universally held idea.

For the purposes of this section, the dignities of merit and moral stature are clear cases of dignity as a quality, whereas *Menschenwürde* is, of course, equated with dignity as a status.

[92] The immediate problem with Nordenfelt's dignity of identity is whether or not it reflects merely, "a feeling or sense of worthiness…a psychological fact, i.e. the self-confidence or self-respect of the person" (2004:75). Nordenfelt argues that whilst such a dignity appears to be subjectively based, it is however, an example of objective dignity because violations to individual dignity have objective consequences in the form of genuine changes to the identity of an individual. An example of this is the manner in which "one's physical identity is radically transformed and one's autonomy has been extremely diminished" (ibid. 76) in cases of illness and diseases, producing very real consequences for the individual. Becoming disabled is a clear example, but another relevant instance occurs through the process of aging in which the individual is forced to confront drastic bodily changes, the ravages of which are an assault on the physical and mental identity of the individual. Nordenfelt posits that describing such cases in terms of a loss of dignity encapsulates the quality of what it is that has been lost or violated, more effectively and powerfully than any other term in existence.

The dignity of identity, on the other hand, seems to possess characteristics which would enable its inclusion in the categories of both dignity as a quality and as a status. Nordenfelt's highly original notion of the dignity of identity is generally not explicated as a distinct dignity, but rather conflated with dignity as a status. This conflation arises in much confusion and is perhaps the source of the contradictions that seem to plague the concept of human dignity. The separation of the two concepts however, immediately problematises the efficacy of notions of human dignity or dignity as a status, particularly if human dignity is posited as inviolable, which will be discussed next. It could be that critics, such as Macklin (2003), are correct that human dignity is too abstract and vague to serve any useful purpose. Jordan also makes this point in his argument that the principle of human dignity is:

> applicable primarily in the abstract…[and thus unlike principals such as] respect for autonomy, beneficence, and justice…it is of little utility in resolving particular moral problems…the goods it is supposed to protect are intangible. Those who use human dignity as a category of moral evaluation are concerned with general cultural attitudes toward moral virtue and the 'meaning' of human life and various human activities" (2010:185).

Human dignity utilised to ground calls for the respect of human rights might better be replaced by *Menschenwürde,* or simply 'human-worth' which rather than concealing itself under a cloak of vagueness, implies that rights ought to be respected because human lives have worth or value. A claim of human worth must of course still answer the question pertaining to why it is that human beings have worth but *Menschenwürde,* or *human-worth,* seems to be a less opaque notion than human dignity. An additional problem with the concept of human dignity however, pertains to disagreement regarding whether or not it is inviolable.

4.4.2 Dignity as Inviolable vs Dignity as Violable

In terms of the bioethical uses of dignity, the predominant complication with the opposition between the interpretation of dignity as either inviolable or violable, arises in arguments which cite a particular practice as an affront to human dignity. To give an example, condemnations of transhumanism as an attempt to fundamentally alter humanity, argue that it jeopardises or will result in a loss of our dignity. Such arguments generally imply a risk to, or loss of, what is viewed as intrinsically valuable regarding our humanity, represented by the notion of human dignity. The confusion arises in these arguments when human dignity is defined, if at all. Generally, definitions of human dignity in this regard are vague or presumed as intuitively known. However, many arguments do define dignity as referring to something

which extends beyond the individual, is held collectively by humanity, does not admit of degrees and is inherent and inviolable. It seems a clear case of contradiction however, to assert that human dignity is inviolable, on the one hand, as is the case in many human rights documents that utilise the notion, and on the other hand, to condemn particular practices on the basis of their being a violation of human dignity.

If it is the case that human dignity is inviolable, then the question immediately arises as to how useful the concept really is as an action guiding principle in bioethics. In other words, we may ask what purpose is served by admonishing a practice such as human cloning or transhumanism as an affront to human dignity if the latter is portrayed as something that cannot be lost due to the fact that it is intrinsic to all human beings! Could it not be that the type of dignity in question in bioethics cases, particularly where dignity is used as a means of constraint, is actually akin to a dignity of identity or dignity as a quality, masquerading as inviolable, inherent human dignity?

Debes explains the conflict between the competing notions of the violability and inviolability of dignity as possibly occurring due to confusion between "the expression of dignity and the value 'dignity'" (2009:59). In other words, dignity manifested as a positive mode of conduct visible in the actions of an individual which can be more or less present; as opposed to dignity as the abstract value which is used to guide this action. This may be an effective means of resolving the seemingly irrevocable distantiation between dignity as a quality and dignity as a status, as well as the violable/inviolable paradox; in that it could be established that the two types are actually two components of one general notion of dignity. Kolnai pursues this avenue of thought by describing human dignity as signifying:

> Worth or Worthiness in some 'absolute', autonomised and objectivised…sense [as opposed to conceiving it in terms of] Worthiness, Value or the quality of being 'good'…in the sense open to any further determination as expressed by 'worthy of…'" (1976:251)

The difficulty with reframing dignity in such a way is that for the concept to be of any use, the problem of fully defining the value component would remain, as would the need to obtain consensus regarding this definition in order for it to serve as a clear and coherent means of action guidance.

These differing interpretations illustrate that there is a decisive need for greater clarity regarding arguments which utilise notions of dignity, as well as to establish what type of dignity is actually implied in bioethical debates. Is it the dignity of identity, which appears, prima facie, to be a more useful and concrete concept in directing action; or simply a call to refrain from performing a particular action based on a far too general argument claiming the value of human beings as its basis? This matter, and its impact upon arguments from dignity against transhumanism, will be examined in further detail in the next chapter. It is now important that a third major conflict which characterises recourses to notions of dignity be addressed. This conflict refers to the fact that dignity may be used by opposing positions in the same argument; either as a means of constraining a particular action, or in order to emphasise the autonomy of the individual.

4.4.3 Dignity as Empowerment vs Dignity as Constraint

The fact that the notion of human dignity may be used in support for vastly opposing positions has, of course, already been discussed at some length in Section 4.3. The conflicting interpretations of dignity as either a means of empowerment or constraint were shown to have resulted from specific historically relevant, contextual factors, as well as due to possibly being informed by different notions of dignity. Dignity as empowerment is closely linked with autonomy and founded upon the notion of the inherent worth which is possessed equally by all human beings as individuals. An emphasis on human dignity as supporting the rights of the individual, or its corollary the dignity of empowerment, serves as a means of ensuring the protection of the individual against any violations of their autonomy. As argued by Raz, a respect for human dignity, according to a dignity as empowerment interpretation, "entails treating humans as persons capable of planning and plotting their future. Thus, respecting people's dignity includes respecting their autonomy, their right to control their future" (in Beyleveld & Brownsword, 2001:15).

In diametric opposition to dignity as empowerment which is employed to secure the autonomy of the individual, dignity as constraint is used to limit it. In keeping with the aims of the context in which an emphasis on dignity as constraint arose, namely, the rapid biotechnological developments towards the end of the twentieth century, it serves as means of trammeling certain potential changes to the human being and human *being* that are deemed

problematic. In this regard, dignity operates as a symbol of what it is about humanity that should be revered, respected and maintained. Dignity as constraint propounds the view that:

> human dignity represents an 'objective value' or good (reaching beyond the individual) such that, if an act violates this value, human dignity is compromised irrespective of whether the party so acting freely agrees to perform the act in questions…where human dignity so conceived is at stake, free choice is irrelevant (Beyleveld & Brownsword, 2001:34).

It is thus clear that dignity as constraint is associated with an emphasis on the protection of the dignity of humanity, viewed as something valuable in itself, and thus, as a good thing for human beings as a collective. This is in contradistinction to dignity as empowerment, which is directed towards the protection of human beings as individuals by way of awarding them particular rights, due to the fact that they possess inherent dignity. The grounds for interpreting human dignity as a means of constraint are therefore founded upon **duties** rather than **rights**; which may be presented in terms of "duties to others, duties to oneself, and duties to the community" (ibid. 37). In other words, dignity awards particular privileges to the individual, namely, the benefits afforded by the protection of their individual human rights. However, privileges are concomitant with particular duties, namely, a responsibility to respect the value of dignity itself, manifested by refraining from particular actions.

Beyleveld and Brownsword discuss whether or not calls to respect human dignity, and in particular the notion of dignity as empowerment, are characterised by "epistemological contingency" (ibid. 22). In other words, if the question is asked regarding how it is that human dignity serves as the justification for human rights, the answer given generally focuses on the axiom that human beings possess dignity due to their inherent value, their *Menschenwürde*. There is thus a necessity for mechanisms which recognise and protect this value, in order that human beings may lead lives in which flourishing can take place. The complication here, of course, is that in order for rights to be respected, there must be consensus regarding the principle that human beings have value, which manifests as a particular "attitude of respect" (Feinberg in Beyleveld & Brownsword, 2001:22). This is problematic because then human rights are founded "entirely on contingent acceptance…[or] the right attitude, namely a human rights attitude" (ibid.). However, as Beyleveld and Brownword argue, any epistemological contingency "might well be of philosophical rather than practical concern….so long as the culture of human rights prevails" (ibid. 27).

The second point regarding the opposing notions of dignity as empowerment and dignity as constraint, addresses the possibility that these conflicting uses arise as a result of their being based upon different concepts of dignity, rather than reflecting an inherent contradiction within the concept itself. If we distinguish between the dignity of identity, as an offshoot of dignity as a quality, and human dignity, or *Menschenwürde*, then arguments which utilise notions of dignity as a means of empowerment may be founded upon an interpretation of what the notion of human dignity/*Menschenwürde* signifies. In opposition to this, arguments utilising dignity as a means of constraint could be viewed as attempting to articulate what is at stake in the dignity of identity. However, neatly categorising the conflicting notions of empowerment and constraint in terms of distinct sources, namely human dignity and dignity as a quality respectively, seems to be an attempt to avoid addressing the complexity of the concept. There are aspects of empowerment and constraint that may be argued as congruent with both sources of dignity. This will be made evident in the dignity arguments against transhumanism, which will be discussed in the following chapter. Both of the arguments against transhumanism which will be presented are informed by dignity as constraint interpretations. However, in both arguments the appeal to constraint is based upon the preservation of human worth, of what is valuable and unique about human beings.

A more effective means of reframing these opposing notions may be to view them in terms of the above mentioned interpretation of *dignity as an action guiding value*. In other words, the opposition between empowerment and constraint may be viewed as two conflicting interpretations regarding what action is called for by human dignity as a value. This interpretation still results in a conflict; however, there is a shift from viewing the conflict as founded upon two seemingly irreconcilable notions of dignity to one which may be resolved through the force of the more effective argument. Furthermore, if the predominant purpose of a human dignity as empowerment argument is to ensure a respect for autonomy, or the concept is in any way interpreted as synonymous with autonomy, then there is a clear case, as advocated by the dignity critics, that this aspect of the interpretation of *dignity as an action guiding value* may be eradicated in favour of simply using the concept of autonomy itself. In addition, utilising the dignity of identity as an action guiding principle may be an effective means of adjudicating the efficacy of dignity arguments against transhumanism which are mired in essentialist notions and supposedly intuitive presuppositions. As discussed by Jordan, there is a tendency to assume clarity regarding what is meant by "'x is an affront to human dignity' and 'respect for human dignity requires y'" (2010:181). If the kind of dignity

which is being implied in such cases is akin to a dignity of identity then there is a far stronger case that may be made in terms of its employment as a means of constraint.

4.4.4 Collective Human Dignity vs Individual Human Dignity

The fourth and final opposition, which has been alluded to at various points above and has received scant explication in the dignity literature, arises due to the fact that human dignity may be viewed either in terms of individual human dignity or collective human dignity. This apparent contradiction arises in accordance with dignity's interpretation as a means of empowerment, leading to an emphasis on the protection of the rights of the individual, or as a means of constraint, leading to an emphasis on the protection of the collective dignity of humanity. This difference in focus produces results that may of course be wholly at odds with one another. In other words, what may be considered highly desirable in terms of individual preferences, may lead to undesirable aggregate consequences for humanity as a whole.

However, if we are to articulate this opposition in terms of what is at stake, in other words, by identifying what is being protected, then it appears that different entities are being referred to. As mentioned above, an emphasis on dignity as constraint attempts to protect human dignity as a value inherent to humanity collectively. In other words, it is the preservation of the dignity of humanity, of that quality which is the source of human value and worth, which is at stake in dignity as constraint interpretations. Dignity as empowerment, on the other hand, is first and foremost a means of protecting the rights of individuals, namely their autonomy. Dignity in the latter case serves an instrumental purpose; it is a means to the end of securing individual rights; whereas, in the former case dignity is viewed as a good which is inextricably linked with humanity, and which requires protection itself.

It appears that if we wish to engage with the value of dignity itself, rather than its distillation into what is essentially the value of autonomy, then it is more coherent to interpret it in terms of how it operates at a collective level. This position accords with the majority of interpretations found within the dignity literature where the individual/collective opposition is alluded to. Jordan posits that "[h]uman dignity is generally promoted or hindered at the macrolevel, not in interactions between persons or groups of persons" (2010:184). As discussed in Section 4.3, the prevalent usage in bioethics of the concept of human dignity seems to be concerned with using it as a form of collective constraint. In other words, the use

of notions of dignity, in such contexts, serves the purpose of maintaining overarching socio-cultural norms pertaining to conceptions regarding the human being, and of controlling, or preventing, practices which may impinge upon such conceptions. Problems, of course, arise when dignity as constraint is utilised to further a particular agenda regarding what is deemed as 'the good', and is foisted upon those who may not share such a perspective[93].

Whilst certain thinkers posit that the abstract nature of dignity is such that it may only be intelligible in terms of how it operates on a macro or collective level, other thinkers focus on the intensely relational aspect of human dignity. Mann argues that dignity is inherently social due to the fact that it arises, on the one hand, as a result of how one views oneself, and on the other hand, as a result of how one believes one is viewed by others (1998:32). The former is of course highly influenced by the latter, or as argued by Mann, "the common denominator is the fact of being seen and the perceived nature, or quality of this interaction" (ibid.). Jacobson posits that one of the predominant historical conceptions of dignity is the position which views it as "an attribute that pertains to humanity as a collective entity" (2009:3). She distinguishes between human dignity and social dignity, viewing the former in accordance with prevalent views of the notion discussed above. The first component of social dignity is the "**dignity-of-self**" (ibid.), referring to the value one places on oneself, or the esteem in which one holds one's personality, qualities, behaviour and identity, akin to the dignity of identity discussed above. The second component of social dignity is "**dignity-in-relation**" (ibid.), encompassing historical and cultural interpretations of dignity which result from socially constituted norms as well as through the interactions between individuals. Jacobson views human dignity as inviolable whereas social dignity, because it is contextually dependent, is "contingent [and may] be measured, violated, or promoted" (ibid.)

Finally, Schachter succinctly draws a distinction between the empowerment/individual versus the constraint/collective dichotomy by describing dignity as:

> involv[ing] a complex notion of the individual. It includes recognition of a distinct personal identity, reflecting individual autonomy and responsibility. It also embraces a recognition that the individual self is a part of larger collectivities and that they, too, must be considered in the meaning of the inherent dignity of the person (1983:851).

[93] A clear example of this would be cases in which dignity is utilised to further a bioconservative agenda resulting in the thwarting of valuable research deemed problematic according to this agenda. Such was the case as a result of the power wielded by the President's Council for Bioethics, which halted stem cell research during its tenure.

The above discussion serves to illustrate that if the concept of dignity is to be used in a cogent manner to determine the moral status of transhumanist aims, there must be absolute clarity regarding which interpretation of dignity is being utilised. The types of dignity arguments typically lodged against transhumanism, which will be discussed in the following chapter, arise from a position of concern for the general or overarching moral consequences that may be wrought by radical transformations to the human species. The dignity at stake in this regard therefore, is clearly a collective dignity. Whilst collective and individual dignity are, of course, not disparate; they are, as discussed above, based on different emphases of what is deemed important, leading ultimately to different conclusions. It is the legitimacy of these conclusions which must be established.

4.5 Conclusion

This chapter has consisted of three approaches regarding the explication of the notion of dignity. Firstly, the concept was discussed in terms of how it has been historically interpreted and employed. The origins of the concept were traced from its use in antiquity and its various subsequent permutations through to the surge in its popularity in the twentieth century in post Second World War human rights instruments. This exposition revealed several distinct interpretations of dignity, all of which may be argued are still existent in the contemporary lexicon.

Secondly, the concept was discussed in terms of how it is utilised in late twentieth century bioethics instruments and contemporary bioethics; a use which was shown to be at odds with the manner in which it is employed in human rights instruments. The dignity utilised in bioethics associates it with a constraining of individual autonomy, with regards to practices or behaviours which are posited as undermining general human dignity. This interpretation of dignity is at odds with the dignity of human rights instruments which emphasises individual choice as based upon the intrinsic worth or dignity of human beings. This section concluded with an investigation of the three ways in which the concept of dignity is approached in bioethics. In this regard, a distinct polarity is evident between those who propose the abandonment of the concept due to its irrevocable vagueness, and those who view it as the foundation of inherent human worth.

Thirdly, a conceptual analysis of the notion of dignity was conducted by means of identifying certain congruencies, as well as the predominating conflicts which are apparent in its utilisation in the contemporary milieu. The oppositions pertain to whether dignity may be construed as an inviolable or violable status, or as a quality which admits of degrees; and whether it is used to empower individuals, or to act as means of constraint upon endeavours which may result in problematic changes to humanity. It would appear that much of the ambiguity with which the concept is charged, lies in the unwitting conflation of aspects of these two distinct interpretations.

The purpose of highlighting the different interpretations and oppositions contained within the notion of dignity, serves to establish whether or not the concept is a viable means of critiquing the aims of transhumanism. In other words, is it possible to formulate an intelligible understanding of what the statement: 'transhumansim is an affront to human dignity' is attempting to articulate? The conclusion in this regard, is that if there is a possibility of using dignity arguments in a way that is based upon more than intuitive presupposition and essentialist rhetoric, it must established whether construing dignity as an action guiding value, which is intrinsically connected with what it is about humanity as a whole that is viewed as valuable, is able to articulate what it is that is possibly threatened by practices such as transhumanism. The claims in this regard, whether enabling or constraining, must be decided by the force of the more effective argument, as based upon the distinct character of this action guiding value. It is also necessary to investigate whether the concerns encapsulated by the dignity of identity are able to be of any assistance in the explication of dignity as an action guiding value. The following chapter will therefore discuss the effectiveness of the three most renowned dignity arguments which have been employed in the transhumanism debate, and identify with which interpretations of dignity they are informed in order to address the above concerns.

5 Dignity Arguments For and Against Transhumanism

5.1 Introduction

As discussed in the previous chapter, the notion of human dignity has been plagued by charges of ambiguity and vagueness, due to the lack of consensus regarding its definition. As a result, the concept may be easily adapted to provide either condemnation or support for the same activity. This tendency has led many thinkers to argue that use of the concept should be abandoned altogether. These difficulties aside, the previous chapter established that despite the diverse interpretations regarding the precise nature of what it is that is viewed as providing human beings with dignity, there are, of course, commonalities present in the use of dignity arguments.

A common thread in such arguments is that the notion of dignity appears to operate as an action guiding value which is intrinsically connected with, and aims at protecting, what it is about humanity as a whole that is viewed as valuable, worthy and unique. Dignity arguments against transhumanism must therefore identify this valuable and unique quality or capacity that will be threatened by radical enhancement, and how this may occur. In order to do so, both deontological, as well as consequentialist approaches are required. Deontology as concerned with the intrinsic moral status of an action or practice in accordance with universally stipulated rules, is the paradigm from whence concepts such as human dignity arise[94]. However, in order to mount an adequate argument based upon the use of such a notion, it is necessary to illustrate why and how the principle/s which inform the concept will be violated by a particular practice or action. This requires a discussion of the consequences that may occur, and an illustration of how these consequences could be said to violate the notion in question, namely, human dignity.

In the context of transhumanism, the consequences discussed in dignity arguments are generally based upon some form of extrapolation from empirical observations of human behaviour which is used to predict how radically enhanced beings would behave, and the problems that would arise in this regard. Of course, because such arguments engage with

[94] The injunction that an action must not be permitted if it violates human dignity, is clearly deontological in nature. Such an injunction requires an identification of not only what human dignity is, but also why it is said to be possessed by all human beings.

future states of affairs, they are largely speculative and must be assessed in terms of whether or not they are sound arguments. However, as discussed in the previous chapter, dignity arguments in bioethics are invariably utilised in opposition to some practice and tend to rely upon emotive persuasion at best, and shock tactics at worst, rather than upon coherent argumentation. The extensive use of the *Brave New World* hypothesis as a worst case prediction of a posthuman world is an example of this. In addition, the majority of dignity arguments focus almost exclusively upon the possible negative consequences that may arise from the practice or action to which they are opposed, and neglect what is meant by human dignity itself. This tendency is most likely attributable, not only to the difficulties associated with explicating the concept, but also due to the fact that its vagueness is part of its appeal. Not only does the concept's ambiguity permit it to be used as a means of supporting a particular agenda; but due to the fact that there is great regard for the idea that the dignity of all human beings is something that should be respected, the concept of human dignity is able to be used as a trump card which possesses the power to halt argumentation in its tracks and conceal the relatively weak arguments with which it is associated.

In order to illustrate how the notion of human dignity is employed in opposition to transhumanism, the two most renowned and frequently cited arguments, those of the bioconservative thinkers Leon Kass and Francis Fukuyama, will be discussed in detail in this chapter. Kass's argument and his interpretation of the notion of human dignity is generally viewed as founded upon, or at least strongly informed by, religious sentiments; whereas Fukuyama mounts a secular argument against transhumanism as a violation of human dignity. Both thinkers are however, essentially arguing that the use of GNR technologies "might undermine our human dignity or inadvertently erode something that is deeply valuable about being human but that is difficult to put into words or to factor into a cost-benefit analysis" (Bostrom 2005c:203). More specifically, both arguments are constructed around a particular interpretation of human nature or a human essence as something intrinsically valuable and inextricably linked with human dignity; and both arguments include a discussion of the consequences of radical enhancement for human dignity. Fukuyama's argument however, pays scant attention to the notion of human dignity itself, and is rather concerned with establishing a case for the existence of a definite human nature, and the consequences associated with its alteration. Whilst Kass on the other hand engages extensively with the notion of human dignity, his argument is plagued by circular assumptions, contradictory conclusions and conflicting interpretations of the concept of human dignity itself. This

chapter will therefore outline the positions of these two thinkers as seminal examples of the use of dignity arguments, thereby examining the efficacy of utilising such arguments against transhumanism.

A third dignity argument, namely, that of the eminent transhumanist Nick Bostrom, which offers a response to the above arguments, will also be discussed. Bostrom engages almost exclusively with the possible consequences of radical enhancement, attempting to show that good reasons exist to support the claim that posthumanity would retain its inherent dignity. His argument however, displays a lack of adequate engagement with what the notion of human dignity itself entails. Whilst it must be noted that his position is, of course, outlined in an essay rather than a book, which is the case with Kass and Fukuyama's arguments; it is nevertheless necessary that the concept receive adequate explication if it is to be used to mount an effective argument in support of a practice such as transhumanism.

5.2 Kass – Transhumanism as Dehumanisation: Human Dignity and Human Essence

> Human nature itself lies on the operating table, ready for alteration, for eugenic and psychic 'enhancement', for wholesale redesign. In leading laboratories new creators are confidently amazing their powers and quietly honing their skills, while on the street their evangelists are zealously prophesying a post-human future. For anyone who cares about preserving our humanity, the time has come to pay attention. (Kass, 2008:6).

5.2.1 Basic Position

Leon Kass is the thinker most closely associated with the use of dignity arguments in bioethics. Therefore, any account regarding the manner in which dignity arguments are employed to critique transhumanist aims would be incomplete without an investigation of his views in this regard. His position has, of course, been alluded to several times in the preceding chapters, particularly in terms of his role as chairman of the President's Council for Bioethics in the United States during the Bush administration, discussed in Section 4.3.3 of the previous chapter.

As mentioned above, there are a variety of ways in which arguments may be constructed in opposition to transhumanist aims. If one is to survey the literature, arguments generally focus either upon the supposed intrinsic 'wrongness' of transhumanist aims, or they engage with a variety of possible negative outcomes that could occur if transhumanist aims were realised.

The former area is the realm in which dignity arguments such as Kass's are located; with typical concerns including the implications for human dignity of fundamentally altering human nature or our human 'essence', and the attitude of arrogant mastery and pursuit of an elusive perfection that this endeavour represents. On the other hand, arguments which focus upon the consequences of achieving transhumanist aims, and subsequently the creation of a posthuman world, engage with a wide variety of issues ranging from the risk factors involved, to concerns with distributive justice as well the question of autonomy[95]. Kass regards the focus upon consequences, and in particular the concern for issues of distributive justice, referring to the potential augmentation of inequality which may arise due to lack of access to enhancement technologies, as problematic. This is due to the fact that such concerns are based upon a presupposition that enhancements represent a good which ought to be equally shared, and thus, the question of the moral status of the aim to enhance in the first place, remains unanswered (Kass, 2003:15). Kass argues rather, that against transhumanism aims[96]:

> [n]either the familiar principles of contemporary bioethics – respect for persons, beneficence, and justice – nor our habitual concerns for safety, efficacy, autonomy, and equal access will enable us to gauge the true promise and peril of the biotechnology revolution" (2007:54).

For Kass, transhumanist aims elicit a feeling of great 'disquiet', an intuitive reaction of concern, the basis of which he argues is difficult to identify but has "something to do with the essence of the activity itself…with what is natural, or what is humanly dignified, or with the attitude that is properly respectful of what is naturally and dignifiedly human" (2003:17). Kass associates the unease evoked by transhumanism with the *wisdom of repugnance*, referred to in previous chapters[97]. He argues that the wisdom of repugnance, which results in

[95] There are a variety of concerns related to autonomy. Firstly, as discussed by Kass, there are questions regarding the implications of the control of one generation over subsequent generations. Such concerns are articulated not only in terms of the parent/child relationship, referring to the *designer baby problem* by which parents would have the option of selecting particular traits for their offspring on the basis of personal preferences, but also with reference to the problematic nature of the wielding of power of one generation over future generations (Kass, 2003:16). In addition, the concern with autonomy includes the possibility of pressure being placed upon individuals to enhance themselves which could be manifested in various permutations.

[96] In his writing, Kass rarely utilises the term transhumanism itself; however, his arguments are clearly directed towards any endeavour which aims to fundamentally alter human beings, which is, of course, a possibility viewed as unproblematic by most transhumanists. At certain points he does however argue specifically against "a new field of 'trans-humanist' science [which] is rallying thought and research for the wholesale redesign of human nature, employing genetic and neurological engineering and man-machine hybrids, en route to what has been blithely called a 'post-human future'" (2007:54).

[97] Kass admits that a reaction of repulsion towards a particular practice does not necessarily serve as incontrovertible evidence for its moral condemnation; there are of course many examples of practices once deemed abhorrent which are now accepted. An example of this is the destigmatisation of homosexuality, which was discussed in Footnote 8. This of course weakens his use of such arguments considerably.

an opposition to a variety of practices viewed as taboo[98], as well as "voluntary acts of self-degradation"[99] (2007:53) is itself fundamentally based upon the desire "to uphold human dignity" (ibid.). In this regard, Kass argues that whilst there are a variety of different areas of concern regarding the possible negative consequences of the project of enhancement, this opposition to the transformation of the human being that would be the result of radical enhancement, is at heart, informed by the deep-seated conviction that what is at stake is human dignity. Furthermore, Kass posits that calls to respect human rights in general, are evidence of a concern for human dignity, because at its most fundamental level, the respect for human rights is an injunction to treat "human beings as they deserve to be treated solely because of their humanity" (ibid.). Thus, for Kass, a respect for dignity is the foundational principle upon which human rights are constructed.

Kass's opposition to the aims of transhumanism is motivated by the concern that their attainment will result in a *Brave New World*, referring to Huxley's dystopic novel. For Kass, a world such as this in which human beings have remodeled themselves to their own specifications, would result in absolute "dehumanisation and degradation" (2002:9); but not due to the violation of personal autonomy which characterises this brave new world. Kass argues that such a world would not require authoritarian enforcement due to the fact that it would provide individuals with "health, safety, comfort, plenty, pleasure, peace of mind and length of days" (ibid. 6). In this way, the *Brave New World* is characterised by what Kass views as the perils that are concomitant with an excessive focus on "partial goods" (ibid. 5). Partial goods, because they are contingent upon other factors, may lead to negative consequences, and may be distinguished from absolute goods which are considered intrinsically valuable. Kass argues that human dignity is an example of an absolute good. He posits that the ultimate tragedy of a brave new transhumanist world would lie in the fact that there would be no awareness of the dehumanisation which would have occurred, and thus, no remorse for the humanity which will have been lost. Kass argues that what has been lost in Huxley's *Brave New World* is the dignity of the human race (ibid. 16). It is clear therefore, that according to Kass, dehumanisation is synonymous with a loss of human dignity.

[98] Examples of taboo practices which Kass provides are "incest…bestiality,…the mutilation of a corpse, [cannibalism],…rape and murder" (2002:150), all of which elicit reactions of condemnation based upon the wisdom of repugnance. Whilst it may be impossible to provide a cogent argument regarding why these practices are viewed as morally repulsive, Kass argues that the absence of such an argument does not generally result in a questioning of the reaction they elicit.

[99] Here, Kass includes "prostitution, drug addiction, and self-mutilation" (2007:53), as examples of self-degrading acts.

Kass argues that a brave new posthuman world will be enabled by a number of factors. Firstly, the faith in "technological automatism" (2002:7), which refers to the view that the advancement of technology is compelled by an unavoidable forward momentum, resulting in the belief that little control exists in this regard. This position of course accords with Kurzweil's view of the law of acceleration, discussed in Chapter 3. In addition, this self-perpetuation of technology is conceived as signifying 'progress' itself, and is thus viewed in a positive light. Secondly, the overemphasis on autonomy in western liberal society results in the belief that all individuals possess particular rights, all of which will function together to ensure the research, funding and adoption of transhumanist aims[100] (ibid.). Thirdly, Kass argues that enhancements will be enabled as a consequence of the great esteem placed upon biomedicine due to its ability to protect and ensure what are viewed as "the supreme values of modern life…[the capacity to] cure disease, prolong life [and] relieve suffering (ibid.). In this regard, other values are bound to be forfeited or overshadowed and enhancement will arise as an extension of the possibilities afforded by biomedical treatment.

Fourthly, the attitude of "cultural pluralism and easy-going relativism" (ibid.) has manifested in a culture which advocates respect for diversity of opinion, leading in turn to the tendency to avoid proclamations regarding the moral permissibility of certain endeavours. This, Kass argues, will prevent the possibility of unanimity regarding whether or not the enhancement project as a whole should be permitted to occur. In addition, this matter is complicated by the fact that there is a tendency to react to and assess the moral status of individual technological advancements as disparate or seemingly unrelated areas, resulting in either resistance to or endorsement of their adoption. Such possibilities should rather be viewed in terms of their location within the total project of enhancement in order to assess the nature of what this project as a whole signifies for humanity (ibid. 2). The fifth factor concerns the fact that science, including biomedicine and biotechnology, is inextricably linked to market forces which impel it inexorably forward, but are devoid of moral considerations. The sixth and final factor is Kass's primary focus, and is related to the *Brave New World* risk mentioned above, namely, that our conceptions regarding what it means to be human have been distorted to such an extent by the "scientific-technological approach to the world and to life" (ibid. 8), that such changes are no longer viewed as problematic or are welcomed.

[100] Such rights or freedoms are "the freedom of scientists to enquire, the freedom of technologists to develop, the freedom of entrepreneurs to invest and to profit, [and] the freedom of private citizens to make use of existing technologies to satisfy any and all personal desires" (Kass, 2002:7).

Of course, it must be pointed out that all the factors provided by Kass, with the exception of the sixth, may be viewed as evidence only for the inevitability of the development and use of transhumanist technologies in order to transform humanity into posthumanity. It is not an automatically given fact that technological automatism, an emphasis on autonomy, the esteem for biomedical treatment and the ethos of cultural pluralism, coupled with the presence of market concerns will produce a *Brave New World*. For that matter, it is not an automatically given fact that if at some point in the future, a posthuman state is reached, that posthuman beings will be degraded and inferior in comparison to their human predecessors. This point aside, the sixth factor bears relevance to Kass's argument, namely, the concern that degradation and dehumanisation will be enabled due to the way in which the scientific-technological approach has distorted our conception of what it means to be human. This fundamental change to what is described as our human essence, and the ensuing dehumanisation or loss of human dignity that Kass argues will be the result of radical enhancement, is his primary point of engagement.

5.2.2 Science and Technology

In order to elucidate Kass's critique of transhumanism, it is necessary to discuss his views regarding science and technology. The comprehensive discussion in Chapter 3 of the GNR technologies with which transhumanists hope to achieve their aims, served to illustrate the strength of the relationship between transhumanism and technology. In addition, as discussed above, transhumanism fulfills the first and second criteria regarding the inevitability of a posthuman world. The transhumanist faith in the ability of technology to rescue humanity from its biological limitations, coupled with its emphasis on the autonomy of the individual to decide whether or not to utilise such technologies; is absolute. Kass views transhumanism as driven by the technological imperative, referring to the view that "what *can* be done justifies what *is* done…[rather than] what *should* be done" (Jones, 2007:33-34). According to such a view, the utility and success of technology lies in its ability to transform the environment, rendering it increasingly useful to the needs and comfort of human beings. The problem with this view however, is that the drive to technologise is unable to differentiate between the objects of its attention, and therefore, results in the transformation not only of the environment, but ultimately of the human species as a whole (Kass, 2002:32).

Kass argues that the preoccupation of a technological approach with the mastery of everything that is unpredictable and seemingly uncontrollable, is based, not only upon fears related to the frailty of the human form; but is also informed by a focus not on "what things are...[but on] how things work" (2002:35) in an instrumental sense. This implies an attitude of objectification, which encompasses the self and leads to the project of self-mastery. The promise of technology lies in its ability to supposedly address **both** aspects of the ancient distinction between physical factors, including biological or worldly elements, and "psychic and spiritual" (ibid. 39) factors, as posing the primary barriers to human flourishing[101]. In this regard, technology becomes the self-created god of humankind; but a more powerful god, in a sense, due to the fact that this god requires no supplication or moral restrictions. Kass argues however, that this is a mistaken perception due to what will be lost in the process.

In this regard, Kass argues that the aim to master both internal and external nature which is the ultimate goal of technology, will fail in the first place, due to the unanticipated consequences of this endeavour[102]. In the second place, whilst technology is presumed to be driven by humanity in service of fulfilling our ultimate aims, namely, to free us from the strictures of nature's determination, thereby ensuring "happiness and human flourishing" (ibid. 42) in terms of our own preferences; we will nevertheless remain servile to nature's decrees. In other words, we will exchange the rule of nature for the "rule of arbitrary human will" (ibid. 43), the latter of which if the history of humankind is to be taken into account Kass argues, is in no way sure to be a world in which one would wish to reside. Furthermore, the technological achievements in question do not in any way issue accompanying ethical guidelines and are therefore, unable to comment on the moral status of the driving aim which is to master internal and external nature (ibid. 44).

Finally, Kass argues that the above considerations ensure that the drive to control every aspect of existence is doomed to "tragic self-contradiction" (ibid. 46) in that its "failure is imbedded in…[its] success[es]" (ibid. 49). Each success, in terms of a fulfillment of a desire, creates fresh needs and expectations which in turn enslave us. The control that we seek will always

[101] This view of technology accords with the discussion in Chapter 2, Section 2.2.1 regarding the enlightenment origins of transhumanism.

[102] Examples of these consequences which Kass provides are: the destruction of the environment leading ultimately to its inability to sustain human life as well as the negative outcomes associated with the project of self-mastery, such as the ensuing dehumanisation and loss of dignity (2002:41).

elude us. In this regard, transhumanism may be seen as the epitome of the drive to technological mastery. However, Kass argues that whilst such mastery is sought:

> homogenisation, mediocrity, pacification, drug-induced contentment, debasement of taste, souls without loves and longings – these are the inevitable results of making the essence of human nature the last project for technical mastery. In this moment of triumph, Promethean man will become also a contented cow (2002:48).

Furthermore, Kass posits that transhumanism will result in dehumanisation, not only due to the way in which humanity will be irrevocably altered through the use of technology, but also as a result of the way these changes will be conceived in accordance with the scientific approach. This approach which is "evolutionist[ic], materialist[ic], determinist[ic], mechanistic, and objectif[ying]…leave[s] no room for soul, life's animating principle" (Kass: 2008:7).

Kass does, of course, offer the obligatory concession that science, and in particular biomedicine, are a source of tremendous good, an example of which is the latter's ability to treat debilitating illness and disease. In this regard, he argues that "no friend of humanity today can be the enemy of science and medicine" (ibid. 5). However, in terms of his above position, this ability to do tremendous good is perhaps wherein Kass would posit the danger of the technological project lies; in that the line between technology that liberates, and that which will lead ultimately to enslavement, is one over which little consensus exists. The question regarding how it is that the transhumanist project by way of its inextricable connection with technology will lead to dehumanisation and ultimately the loss of dignity is however, yet to be answered.

5.2.3 How may Human Dignity be Violated?

Kass's understanding of the notion of dignity is not explicitly stated but must rather be gleaned from the manner in which he employs it in his arguments against enhancement endeavours. In this regard, we may find clues relating to his understanding of dignity by investigating how Kass posits human dignity may be violated or lost. As alluded to above, Kass seems to associate a loss of dignity first and foremost with the widespread negative changes to the human being that transhumanism will bring about. He argues that the "changes in our practices, our institutions, our norms, our beliefs and our self-conception"

that will arise from radical enhancement (2002:129), are all "challenges to our dignity and humanity" (ibid.). In addition, it seems that for Kass, it is the sum total of various changes and concerns rather than one identifiable event which will result in the erosion of our dignity. In this way, Kass argues that the likelihood of a posthuman species is ensured by the fact that the changes effected by radical enhancement will occur gradually without our necessarily being aware of them and thus, there will be no decisive opportunity or moment in which it will be possible to halt the process (ibid. 141).

An example of a change that Kass views as problematic: is the possibility that the drive towards mastery of the human form will provide particular human beings with a 'godlike' power over life itself, without at the same time ensuring the observance of any moral guidelines, other than the aim of 'improvement' (ibid. 129-131). Of course, it could be argued that if our ancestors were able to observe the current 'powers' possessed by humanity in the twenty first century, we would surely appear 'godlike' to them too! Kass argues that the notion of improvement requires the grasp of an original state of affairs by which any measures taken may be assessed; as well as the grasp of a clear value system in order to assess the degree to which the measures taken to improve may be judged. An example of this could be: species typical functioning in a particular area, such as health, in which assessments are made according to what is valued by human beings. Kass argues however, that the possibility of radical change to our human form will disrupt not only our grasp of a constant baseline level of functioning, creating an inexorably upwardly shifting level of functioning, but will also result in a concomitant shift in our values or our standards regarding what is viewed as good or as an improvement. In the absence of a relatively static conception of, for example human memory or the human lifespan, the notion of improvement will become meaningless[103]. In this regard, Kass concludes that those who drive the process of improvement will be motivated only by the conviction that "all innovation is by definition progress, no matter what is sacrificed to attain it" (ibid. 133). However, this conclusion does not logically follow from the argument which Kass has presented. It is one thing to posit that at some point the notion of improvement may be altered, but quite another matter to conclude

[103] Here Kass implies that what would be considered to be an improvement in a particular area of functioning, such as memory recall, of a radically enhanced being could be construed as a debilitating condition in comparison to an original or baseline level of functioning which by this point would have been long forgotten. In this way, so-called improvements could leave us worse off. Kass asks the question, if "memory is good, can we say how much more memory would be good for us?" (2002:132).

that this implies that all other human values and goods will automatically be jettisoned in favour of an all-consuming drive to improve.

This drive to improve is connected to an additional change which Kass argues will occur. Whilst the original intention regarding the project of enhancement may be based upon an altruistic desire, in other words, the desire to alleviate or eradicate human suffering; it will be unable to achieve the latter due to the fact that any improvements will simply displace suffering in accordance with rising expectations (Kass, 2002:133). Expectations would rise in much the same way that they have in recent decades, despite the improvements to health and thus life expectancy now afforded by advances in medical science in comparison with a century ago. An example of this phenomenon is the possibility of life extension; whereby any increase in life expectancy will immediately lead to a desire for further increases. In this way, the project of radical enhancement will not only fail to eradicate human distress, it will "lead not to human fulfillment but to human debasement" (ibid. 134). For Kass, human debasement is synonymous with dehumanisation and leads to "flattened souls" (ibid.) which occurs as a result of the fact that:

> [t]the joys and sorrows of human attachment and achievement are replaced by factitious ecstasies that come from pills. Procreation is replaced by manufacture, family ties are absent, and people divide their time between meaningless jobs and meaningless amusements…life in its immediacy, vividness and rootedness – has been replaced by an utterly mediated, sterile and disconnected existence" (ibid.)

Kass admits that his view is of course a pessimistic conjecture of the future. He posits however, that such a state of affairs is the inevitable outcome of viewing the human being as primarily a malleable biological entity which must be rescued from the mindless contingencies of the evolutionary process. In other words, if human beings are viewed simply as "biological rather than cultural and moral beings" (Kaye in ibid. 136), then the goods that will ultimately be most vulnerable are those that are associated with what distinguishes us from animals, with what Kass views as our human essence, namely, notions such as "freedom and human dignity" (ibid. 137). The argument here is presumably that freedom will be lost because the drive to self-mastery will become all-consuming, whilst dignity will be lost because human beings will lose the qualities held to be worthwhile. Of course, it could be claimed that Kass's conjecture that control over human biology will automatically lead to debasement and a loss of human dignity is evidence that he himself is guilty of genetic and biological determinism and thus, of viewing human beings primarily in terms of their biology

rather than as cultural or moral beings. Kass is assuming that such biological control will result in a definite negation of the influences of environment, interpersonal relationships, culture and moral beliefs; and thus, he himself is disregarding the importance that such factors play in constituting the particular nature of human identity.

Kass's work is proliferated with claims, such as the quote above, that enhancement is dehumanising as it will alter, damage or destroy the qualities which provide human existence with its value, worth or meaning, producing shallow human beings, devoid of true emotional and ethical sensibilities. This destruction of valuable human qualities or capacities, what Kass would describe as our human essence, is for him a violation of human dignity. This is because for Kass, a respect for human dignity is, in a sense, a respect for our human essence or for those factors which are considered valuable in human existence. If it is claimed, which it would appear is precisely Kass's argument, that human dignity arises from or is synonymous with our human essence, or that a respect for human dignity entails a respect for our human essence, then the argument that the quest to change our human essence is immoral because it is a violation of human dignity, has a vaguely circular tone to it. It amounts to arguing that we should refrain from changing our human essence for the reason that it is wrong to change our human essence; or, that in order to respect our human essence we should not change it. Whilst the latter formulation is somewhat less circular it gives no reason as to why we should respect human essence.

It may be that the absence of substantive definitions in the literature regarding the notion of human dignity could be attributed to the fact that the notion is covertly used as substitute for something resembling human essence, where this may be understood as those qualities which are perceived to provide humanity with its valued status. Utilising the notion of human dignity rather than human essence provides legitimacy to the quest to preserve those distinctly unique human qualities that the discredited notion of human essence does not possess. Kass could, of course, formulate his argument in terms of a dignity as a quality interpretation, referring to the display of dignity or dignified conduct discussed in the previous chapter. In this regard, rather than arguing that transhumanism would violate human dignity, in terms of altering our human essence, the argument could be made that it could lead to undignified or demeaning behaviour. Of course, this interpretation lacks the prescriptive power of the argument from human dignity; but it is a more coherent position and therefore, Kass's

argument must be explored in terms of whether aspects of a dignity as a quality argument are present.

5.2.4 Human Dignity and the Sanctity of Human Life

Kass associates human dignity not only with a human essence, but also with human sanctity or a type of respect which he argues human beings must be accorded. He posits that whilst the two are frequently viewed as conflicting values, "human dignity and the sanctity of life not only are compatible, but if rightly understood, they go hand in hand" (2002:234). The conflict which Kass is referring to, is clearly that of dignity as empowerment versus dignity as constraint. Kass elucidates this opposition by reframing it in the context of the euthanasia debate, which was briefly discussed in footnote 88. In the case of the practice of euthanasia, a call for constraint would be based upon the sanctity of human life. On the other hand, an emphasis on empowerment would be founded upon the autonomy of the individual, and therefore, their right to choose the manner of their own death in situations involving terminal illness accompanied by an intense degree of suffering, in order to preserve their dignity.

Kass is vehemently opposed to this opposition because it portrays the matter as a decision that must be taken between the respect for human life or human sanctity, by refraining from untimely terminating one's life, and the preservation of the dignity of the individual, by permitting him/her to prematurely terminate his/her own life. In other words, it pits dignity against human sanctity. For Kass, the two should not be viewed as disparate; although he does not state that they are one and the same. Kass and myriad thinkers who have preceded him, posit that human dignity arises on account of something exceptional and unique which is intrinsic to human existence, distinguishing it from animal existence. This exceptional and unique quality is akin to a human essence, which was discussed in the previous section. Therefore, a brief investigation of Kass's argument regarding why human life is characterised by a special status and must therefore be held as sacred, may elucidate the basis of his view of human dignity and thus answer the question regarding why it is that human essence or human dignity should be respected.

Of course, notions such as the sanctity of life are clearly imbued with religiosity. The sanctity of life is generally attributed to the creation of the human being in the *Imago Dei* and therefore, is associated with the view that human life is intrinsically "holy or sacred,

transcendent, set apart…[or that] life is something before which we stand (or should stand) with reverence, awe and grave respect" (Kass, 2002:234-235). This respect for life, based upon the belief that the individual is created in God's image and therefore contains a seed of the divine, is, of course, the source of the biblical injunction against murder. However, as Kass points out, whilst arguments against murder may be based upon religious beliefs, such convictions do not explain the fact that murder is also condemned by those who do not hold religious beliefs (ibid. 239). Kass explores the basis of the atheist condemnation against murder as a means of explicating a non-religious interpretation regarding what it is about human life that is sacred and merits respect. He argues that the sanctity of human life is "performatively prove[n]" (ibid. 241) and human existence is distinguished from animal existence through the act of instigating and upholding moral laws, whereby human beings move away from a "state of nature" (ibid.). This ability to respect moral rules and laws is itself the definitive evidence "of the superiority of man" (ibid.)[104].

Human capabilities such as "reason, freedom, judgment and moral concern" (ibid. 242), are the means through which human beings follow and express moral convictions. However, the expression of these esteemed human qualities relies upon the sustaining of human life and the integrity of biological human existence[105]. In this regard, Kass implies that the unimpeded opportunity to display such qualities is the source of human dignity. This is evident from his argument which claims that "murder is to be punished in kind because it violates the dignity of such a moral being" (ibid.). In other words, in order for the human being to actualise the qualities that set human existence apart from animal existence and to give full respect to human dignity, it is necessary that the biological processes be unimpeded. In this regard, the practice of euthanasia would not be considered to be a means of respecting the dignity of the human being. Rather, because it would impede the actualisation of the processes which are the source of intrinsic human dignity, it would violate the latter.

As mentioned above, whilst Kass has argued that the sanctity of human life and human dignity should not be viewed as opposing values; he has not stated that they are identical. The question regarding how they differ is not answered. In other words, on the one hand, Kass implies that the qualities associated with human sanctity which elevate human existence are

[104] Of course, in this regard, Kass clearly espouses a Kantian view, as discussed in Section 4.2.4 of the previous chapter.
[105] As Kass argues, "everything high about human life – thinking, judging, loving, willing, acting – depends absolutely on everything low – metabolism, digestion, respiration, circulation, excretion" (2002:242)

the source of our dignity. On the other hand, however, he also argues that "the sanctity of human life rests absolutely on the dignity – the godlikeness – of human beings" (Kass, 2002:242); which implies a distinction between the two and in addition, as was discussed in the previous section, possesses a distinctly circular tone. Is godlikeness, as Kass has attempted to portray it in a non-religious manner, not synonymous with sanctity? Furthermore, circularity aside, if Kass does not in fact view human dignity and human sanctity as the same, the onus is on him to provide an explanation regarding how they differ. If he cannot do this, the question arises as to whether it is at all useful to use the notion of human dignity, which appears to elude definition, when what one is implying is human sanctity.

5.2.5 Two Interpretations of Human Dignity

As mentioned above, in order to elucidate the notion of dignity, Kass discusses it in terms of how it is employed in the argument for euthanasia[106], or death with dignity. For Kass, the position which posits that euthanasia safeguards the dignity of an individual suffering from a terminal illness is misguided. He argues that if we are to define human beings in terms of their possession of a particular status in the world, such as, for example, the fact that they alone are moral agents, then one must oppose all forms of euthanasia, including cases of PVS, as "undignified and dangerous" (2002:250). Kass does not view euthanasia as a form of respect for one's dignity or agency because he interprets the exercising of agency in order to cease one's life as the antithesis of both dignity and agency; as the agency which ends all agency. He asks: "how can I honour myself by making myself nothing?...Even if dignity were to consist solely in autonomy, is it not an embarrassment to claim that autonomy reaches its zenith precisely as it disappears?" (ibid. 251).

In response to the claim that euthanasia protects the dignity of the dying individual, Kass argues that such a position disregards the fact that "there is nothing of human dignity in the process of dying itself, only in the way we face it" (ibid. 245). In other words, whilst he does not deny that some deaths may be characterised by a greater degree of dignity than others, death itself as an absolute end to life is an "extinction of dignified humanity" (ibid.) and thus,

[106] The subject of euthanasia is of course unrelated to the aims of transhumanism; however, a discussion of Kass's views in this regard is necessary as they illustrate the manner in which he views the notion of dignity itself. In addition, it is also necessary to illustrate his views on death with dignity due to the relevance they bear to his argument against life extension and the question of immortality: a decidedly transhumanist endeavour!

a dignified death is itself impossible. By arguing that death may be more or less or dignified, referring both to the attitude of individuals and the way in which they are treated by others regarding their impending deaths[107], Kass implies the presence of a dignity as a quality or dignity of identity interpretation in his argument. At the same time however, the notion of human dignity is also present as that which will be eradicated upon the death of the individual due to the fact that death prevents the expression of the qualities which are the source of human sanctity, which in turn is founded upon human dignity.

Kass is, of course, aware of the presence of conflicting notions of dignity and provides an interesting argument to illustrate how they may be reconciled. He argues that when the term human dignity is employed, it is generally used to refer to "'excellence', [or] 'being worthy' [as] a property of **all** human beings" (emphasis added. 2002:247). More specifically, Kass reiterates that this is the type of dignity he has argued is "the ground of the sanctity of human life" (ibid.). However, he posits that this worthiness or excellence "pays tribute more to human potentiality, to the *possibilities* for human excellence. *Full* dignity, or dignity properly so-called, would depend on the *realisation* of these possibilities" (ibid.). Because human dignity is by definition held by human beings only, dignity is thus linked to human capabilities such as "thought, image making, the sense of beauty, freedom, friendship, and the moral life and [therefore] not the mere presence of life itself" (ibid.). In other words, whilst Kass himself has argued that human dignity is ultimately sourced in the moral capabilities of human beings, he admits that "dignity would seem to depend mainly on having a good moral life, that is, on choosing well" (ibid.)[108]. Viewing dignity in this way as a kind of **ideal** human essence, is of course problematic, in that Kass realises that most would fall short of such an ideal, thus compromising their dignity. He argues therefore, that it is vital "to establish the grounds for thinking that all human beings – whether dignified or not in their

[107] Kass provides various examples of what a dignified attitude in death would consist in. It would entail acceptance of one's impending death, and thus, making adequate preparations in this regard; ensuring that one takes relevant decisions rather than leaving them to others and maintaining connections with other individuals (2002:248). The underlying view here is that a dignified attitude in death is associated with ensuring that one maintains one's agency. Kass posits that a dignified death is however not possible without "respectful treatment from others…[and includes not being] reduced…to 'thinghood'" (ibid. 249) due to the discomfort of others.

[108] In this regard, Kass argues that recognition of the fact that dignity is predicated upon the moral capacities of human beings does not signify that "one should treat other people, including those who eschew dignity, as if they lacked it…[but that i]t may be salutary to treat people on the basis of their capacities to live humanly…[which] would, in the moral sphere at least, require that we expect and demand of people that they behave worthily and that we hold them responsible for their own conduct" (2002:247). This position is of course highly problematic, to the say the least, due to the fact that the manner in which people are 'treated' then becomes dependent upon an interpretation of what constitutes worthy behavior.

conduct – actually have full and equal human dignity, or should be treated as if they did" (Kass, 2007:57).

In order to do this, Kass firstly distinguishes between two aspects of human dignity, "the basic dignity of human *being*, and the full dignity of being flourishingly *human*" (ibid. 54). He views the former as the 'low' and the latter as the 'high', referring to the fact that one is awarded basic dignity simply by existing; whereas, the dignity associated with leading a flourishing human existence admits of degrees and is therefore something to which one aspires. The dignity of flourishing humanity refers to the possession of "something elevated, something deserving of respect" (ibid. 56), examples of which include the display of qualities such as courage and wisdom. Whilst Kass has described this type of dignity as one aspect of human dignity itself, his interpretation in this regard clearly accords with that of dignity as a quality interpretation. What then is the dignity of human *being*, and what are the grounds upon which calls to respect it may be based?

Kass explores a possible fundamental foundation for the claim to an equally shared basic human dignity, or dignity of human *being*, as lying in "our equal membership of the human species. All of us are members of the class Homo sapiens, sharing thereby in whatever dignity adheres to the class as a whole, and especially in contrast with the dignity of other animals" (ibid. 58). Of course, Kass realises that delineating dignity purely on the basis of species membership, immediately leads to the question regarding *why* it is that beings – purely on the basis that they exist within a bounded species – should be respected. Other species clearly exist in a similar manner. The only possible reason that may be given to avoid a charge of arbitrary privileging of human beings, is to reemphasise the qualities, capacities and characteristics which distinguish human from animal existence. In other words, the only means of arguing that human beings merit a special form of respect over and above other species, is by drawing attention to the characteristics which are possessed by human beings only.

A full human dignity is, however, then faced once more with the problem regarding those individuals who are unable to display these distinctly human characteristics: such as infants, children, the aged, those with mental disabilities and patients in PVS. Kass however, regards this result as evidence for the fact that dignity as a quality and human dignity impinge upon one another; and are therefore, not disparate. Dignity as a quality, which depends upon a

particular display of worth, is "universalised and democratised" through the fact that its presence is evident "all around us, in the valiant efforts ordinary people make to meet necessity, to combat adversity and disappointment…[in] hard occasions that call for endurance and equanimity, generosity and kindness, courage and self-command" (Kass, 2002:248). On the other hand, human dignity, traditionally viewed as 'egalitarian', must draw upon "standards of particular excellences" (Kass, 2007:59), traditionally associated with the display of dignity as a quality, for its legitimacy.

It is not clear however, whether amalgamating the concepts in this way helps Kass avoid the problems associated with the use of the concept. The conflation of the two interpretations produces a version of dignity which bears similarity to that which was explicated in Chapter 4 where it was suggested that dignity operates as an action guiding value, ideal or a goal, towards which one strives. In other words, according to Kass's reinterpretation of the term, the emphasis is on the qualities or virtues held to be worthwhile and esteemed by human beings and the striving to emulate these qualities, which is the means through which our humanity is exercised.

It must be noted however, that this version of dignity lacks the impact of the traditional notion of intrinsic human dignity; as dignity becomes one of an array of human values that should be striven for, rather than the fundamental value that founds human life. Furthermore, this reinterpretation would not suffice as the grounds for an argument against transhumanist aims as a violation of human dignity, because an equally convincing counter-argument may be lodged, as will be illustrated in Section 5.4. Moreover, it is not clear that the notion of dignity with which Kass operates, accords with this reinterpretation. Rather, as is evident from the dignity and human sanctity discussion, it is the traditional understanding of human dignity which appears to be the dominant interpretation in Kass's work. Furthermore, an argument could be made that this reformulation of dignity opens the way for abandoning the use of the traditional interpretation of human dignity altogether!

The positive human characteristics and behaviours associated with dignity as a quality are easily identifiable to most. Dignified behaviour is generally associated with a range of demeanours encompassing the way in which an individual reacts to particular situations, events and other individuals, as well as the display of qualities such as temperance, wisdom, perseverance and courage. In this regard, dignity as a quality of individuals is merely one of a

cohort of esteemed qualities or virtues which may characterise human behavior, and towards which one should strive. We can then reformulate Kass's argument against transhumanism in accordance with this new interpretation:

Premise 1: There are a group of distinctly human qualities, examples of which are: dignity, rationality, a capacity for love, a sense of aspiration, an ability to create meaning; all of which may be viewed collectively as evidence of moral agency.

Premise 2: These qualities, and the moral agency they produce, characterise individuals as human and thus, enable them to display their humanity. In other words, these qualities are believed to be the source of what provides human beings with their exceptional status.

Premise 3: If we utilise procedures of radical enhancement, these qualities may be altered or destroyed in a way that we may no longer possess an exceptional status nor be able to exercise our humanity.

Premise 4: These qualities and the exercise of humanity that they enable are viewed as desirable human goods.

Conclusion: Therefore, we should not do anything to jeopardise these qualities.

Kass could, of course, argue that a premise could be inserted between the second and third premise, stating that because human beings are exceptional they should be **respected** in the form they find themselves and therefore not be altered in any radical way. However, the inclusion of the notion of respect, would not in any way require the presence of the notion of human dignity to strengthen its normative value.

Therefore, Kass's reformulation of dignity as a value or an ideal towards which we should strive, enables his argument against transhumanism to be rearticulated clearly without recourse to traditional notions of human dignity. If he were to argue that it is undignified **behaviour** to instrumentalise ourselves and change the qualities which are the source of our exceptional status, this argument is clearly drawing upon a dignity as a quality interpretation, rather than the notion of human dignity. To reiterate the above mentioned point however, whilst dignity as a quality is a more intelligible concept, it lacks the normative power of human dignity. Kass's reframing of dignity enables a reaffirmation of the observation made in the introduction to this chapter regarding the possibility that the concept is utilised as a substitute for other values due to that fact that it possesses greater rhetorical force. However, before this matter may be concluded, it is necessary to examine Kass's views regarding the way in which dignity might be violated by life extension, and ultimately the quest for immortality. In addition, whilst the utility of the notion of human dignity may be in question

due to its incomprehensibility, the charge of dehumanisation as the destruction of valued human capabilities may yet prove to be a valid criticism of transhumanism.

5.2.6 Dignity, Life Extension and Immortality

As discussed in Section 2.4.2, the overarching aims of transhumanism are the improvement of the human condition and indefinite life extension. Transhumanists view the two as mutually implicated in that the ambition to extend the human lifespan would be viewed as futile without ensuring that any increase in longevity is experienced in an optimum state of health and functioning in all areas. Furthermore, transhumanists believe that the basis for an improvement of the human condition, lies with an increase in the range of choices available to human beings who are viewed as capable of adjudicating between various options, in accordance with their preferences. In other words, transhumanists advocate the development of the GNR technologies which would enable individuals to choose to live longer lives in full health; **if** this is what they desire.

Kass attempts to provide a coherent argument against the transhumanist aim to provide the means to radically enhance the capacities of human beings to levels which far exceed present capabilities by arguing that such changes will dehumanise us. In other words, such "challenges to the very meaning of our humanity", (Kass, 2002:257-258) will supposedly alter what it is about us that Kass argues is the source of what distinguishes human from animal existence, reducing us to creatures that resemble the inhabitants of Huxley's *Brave New World*. However, due to the fact that the majority of the radical enhancements which are proposed by transhumanists are not yet feasible, it must be noted, that any discussion of negative, or positive outcomes for that matter, is speculative in nature. The absence of concrete possibilities with which to engage, leads to a tendency to focus on notions such as the existence of a human essence which should not be tampered with. Such arguments are easily dismissed by those who eschew the existence of such essentialist notions in the first place. An aim which is, however, rapidly becoming a possibility, and which thus represents a clearer point of engagement is the project of life extension.

Kass argues that the aim to extend the human lifespan leads directly to a desire for immortality. As is the case with any proposed enhancement of human functioning, the aim of life-extension arises from the biomedical project which bases its quest to treat disease and

illness upon the value accorded to human life and human flourishing. Kass argues that the attempt to conquer the aging process and death is granted moral legitimacy by reframing the former as a disease which may be cured; and in this regard, "victory over mortality is the unstated but implicit goal of modern medical science...anything is permitted if it saves life, cures disease, prevents death" (2002:260-261). Kass clearly states that his focus is not on the possible negative social consequences of life extension; such as the issue of how equal access to relevant technologies would be ensured, or the way in which an increased and longer lived population would affect institutional and social structures with outcomes that would be detrimental to all. In other words, debates concerning negative consequences are, of course, relevant in delineating the moral status of life extension, but they do not address whether the quest for immortality is intrinsically wrong. Such debates sidestep the questions of whether it is "really true that longer life for individuals is an unqualified good…[and] how much more life is good for us as individuals?" (ibid. 262).

In the same way that the dehumanisation of humanity will occur as a result of problematic changes wrought by the radical enhancement of human abilities, Kass argues that immortality too will threaten our humanity. His position in this regard is based upon the view that:

> to argue that human life would be better without death is,…to argue that human life would be better being something other than human. To be immortal would not be just to continue life as we mortals now know it, only forever. The new immortals, in the decisive sense, would not be like us at all. If this is true, a human choice for bodily immortality would suffer from the deep confusion of choosing to have some great good only on the condition of turning into something else. (2002:265).

Kass explicates the value associated with a delimited human lifespan by investigating the human capacities which may be compromised or destroyed by the attainment of immortality. The profound changes to our humanity which Kass posits would arise from the compromising or destruction of these capacities would then presumably be the source of the violation of our human dignity. Firstly, Kass argues that an increase in the human lifespan would not necessarily be accompanied by an increase in the "interest and engagement" (ibid. 266) in the areas which are viewed as valuable and enjoyable. To illustrate this point, we could ask whether an excellent violinist would derive a proportional increase in pleasure from playing the violin in the event that she obtained an additional ninety years of life. In other words, whilst one of the reasons that may be given regarding why an extension of lifespan would be desirable, may be the fact that it would afford individuals more time to engage in activities which are meaningful or enjoyable to them, Kass argues that this would not necessarily be the

case. Whilst Kass may be correct in this regard, his position is speculative; therefore, the opposite could also be the case. An increase in lifespan *may* afford the opportunity to explore not only the activities one enjoys at a deeper level, but also other endeavours that one would not have considered nor had the opportunity to pursue due to a shorter lifespan.

Secondly, regarding the "seriousness and aspiration" (Kass, 2002:266) with which life is characterised, Kass argues that the framework of a delimited lifespan permeates the manner in which life is approached. This implies that life is charged with meaning due to the fact that individuals are ever mindful of the fact that their time is limited. The maxim to live each day to its full capacity is based upon this sentiment, as is the belief that the brevity of life ensures that one should strive to focus on that which is deemed truly good or worthwhile. Kass does acknowledge that areas such as the acquisition of knowledge and the ties of friendship would benefit from an increase in allotted time. However, he argues that the belief that one possesses a finite period in which one may achieve one's goals and fulfill one's desires is the driving force in ensuring that these possibilities may be realised. Whilst this point is, of course, a valid one, it does not necessarily follow that a longer life or even an indefinitely longer life would lead to a loss of focus on the good or an abandonment of what is considered worthwhile. It may be the case that death would not result from old age or disease. However, life would still be characterised by uncertainty due to myriad other possibilities which could threaten it. It has been argued that the possibility of death due to accident would in fact result in an increase in risk adverse attitudes amongst individuals whose lifespan has been increased due to what they stand to lose (Agar, 2010:115). If what is at stake is not the loss of thirty years, but rather, the loss of five hundred years, or an infinite number of years, it is not clear that individuals would assume a cavalier attitude towards their lives. Furthermore, in contemporary society, individuals are generally viewed as developing a deeper moral wisdom in accordance with their ensuing years; therefore, it is not evident why this would not continue to be the case with an increase in lifespan.

Thirdly, Kass argues that immortality would rupture our ability to create and appreciate beauty, as well as to love others (2002:267). In terms of the former, Kass argues that an awareness of the fleeting nature of existence compels the individual to create items of beauty that are impervious to the ravages of time, and in this sense outlive their creator. Appreciation of beauty is heightened due to the fact that is it the antithesis to "the ugliness of decay" (ibid.) which is the fate of mortal existence. It is, of course, difficult to speculate

regarding the nature of a posthuman aesthetic appreciation, due to the fact that what is esteemed in this regard will in all likelihood be founded upon criteria which differ from that of contemporary judgments. In the same way that perceptions of beauty are not static, but are informed by the context in which they are situated, posthuman conceptions of beauty may differ from contemporary notions of beauty.

Our capacity to love is also tied to our mortality, Kass argues. It is our recognition that it is not only the self which will cease to exist, but also the other, those whom we love, which fuels the depth of this emotion according to Kass. He asks "[h]ow deeply could one deathless 'human' being love another?" (2002:267). As for the previous point, the same response bears relevance here. The nature of coexistence in an environment that will never be fully predictable or controllable, is such, that immortality will not necessarily ever be absolutely assured. It may be the case that death would become an infrequent occurrence, but this could then have the effect that fear of accidental death, which may strike at any moment, increases rather than diminishes. This could subsequently result in a greater fear of loss of loved ones. If current modes of being are to be utilised as the source for an extrapolation of future possible modes of being, it would seem that relationships are strengthened with time, rather than diminished. Kass's contention that an awareness of mortality is the predominant source of our capacity to love disregards other relevant factors upon which a regard for the other may be built, such as a shared history of experiences, support and affiliation.

Fourthly, Kass argues that the human capacity for "virtue and moral excellence" (ibid. 267) may be attributed to our mortality. Such qualities manifest themselves through the selfless acts of individuals whose motivation extends beyond their own "attachment to survival" (ibid. 268). This refers not only to situations in which individuals risk their lives for others, but also to the ability of individuals to overcome a focus on their own personal concerns and bodily comforts, all of which are rooted in a survival instinct; in order to assist and support others. Kass argues that "[t]o suffer, to endure, to trouble oneself for the sake of home, family, community and genuine friendship, is truly to live" (ibid.). He therefore posits that some form of sacrifice is necessary for true virtue and moral character, and that an immortal being would not be able to fulfill such a necessity and would therefore, be devoid of such qualities. Whilst selflessness **is** a primary virtue and the basis of a sound moral sensibility, Kass's argument is suspect due to the fact that it does not take into consideration the fact that immortal beings would still be faced with situations in which their survival could be

threatened. Threats to survival may not arise due to disease or the aging process, but unless immortal beings become wholly sedentary and cease interpersonal interaction, there will always be the possibility of accidental death, thus requiring the interventions of others. In addition, there is no good reason as to why virtuous conduct, such as the tendency to sacrifice one's own comfort, desires and needs in order to tend to those of others, would disappear as a result of individuals living extended or immortal lives.

In addition, Kass argues that our "longings for immortality" (2002:269), arise directly from "the conflict between the transcendent longings of the soul and the all-too-finite powers and fleshly concerns of the body" (ibid.). These longings are motivated by the desire for completion or 'wholeness', and some of the means by which their fulfillment is believed to be achievable: are through an enduring, intimate connection with another; through religious or spiritual beliefs; or through the search for understanding of the world. Kass argues that these longings point beyond earthly existence and "cannot be satisfied fully in our embodied earthly life…hence the attractiveness of any prospect or promise of a different and thereby fulfilling life hereafter" (ibid. 270). In other words, we long not for immortality but for completion; and this desire will never be satisfied by "the biomedical conquest of death…We would still be incomplete; we would still lack wisdom" (ibid.).

Of course, the immediate response to Kass here would be to point out that he has just argued that immortality would threaten pivotal human qualities such as: our sense of engagement with the activities and interests we pursue, our aspirations, the opportunity to display selflessness, the creation of beauty, the emotion of love and thus, the possibility to view life as meaningful in general. It could be convincingly argued that such qualities are motivated by a sense of striving or longing, and that as Kass has pointed out, because immortal beings would never be complete, such longings would still be present; and therefore, that the opportunity for the exercise of the above qualities would still exist for immortal beings. The posit that a belief in an eternal life provides a source of possible fulfillment or completion which would not be available to immortal beings, disregards the fact that many individuals do not support such a hypothesis, but nevertheless, manage to view life as charged with meaning.

Kass has identified what he interprets to be the ideal characteristics of a virtuous, truly human existence. Moreover, he implies that these characteristics are, in a sense, the source of our humanity and the modes through which we are able to negotiate a meaningful existence; and

therefore, that an accumulation of changes or threats in this regard would render us no longer fully human, and would thus be a violation of our dignity. The primary threat to these qualities, in terms of Kass's argument, would be immortality. In response to Kass's arguments, attention must firstly be drawn to the inconsistency between his position regarding the death with dignity argument and the mortality argument. In terms of the former, he argues against euthanasia due to the fact that the cessation of life deprives the individual of the opportunity to fully realise their dignity in terms not only of the dignified manner in which they may face their death, but also in terms of the manifestation of qualities associated with human sanctity. In terms of the latter, Kass argues against the quest for immortality positing that extended existence may rob individuals of those qualities most closely associated with what distinguishes human from animal existence. If there is a substantial basis for the distinction between his opposition to premature death, on the one hand, and his support for acceptance of the natural human lifespan, on the other hand, it is nowhere evident in his argument. His arguments rather appear to have been constructed on the basis of his personal moral beliefs, as well as an attitude of faith that things should be left the way they are. In other words, the fact that Kass views the premature cessation of life as a violation of human dignity, on the one hand, whilst on the other hand, arguing that what he takes to be an excessive or infinite prolongation of life would destroy human dignity, appears to point towards the presence of a distinct status quo bias rather than a sound argument.

5.2.7 Concluding Remarks

Kass's argument is founded upon the deep conviction that the project of radical enhancement will result in changes to our human essence that will ultimately dehumanise and degrade us. For Kass, our human essence refers to the qualities and capabilities which distinguish human existence from all other forms of existence and provide it with its exceptional status. Our dignity is inextricably linked with our human essence in that we view ourselves as possessing this intrinsic dignity on account of the fact that we are endowed with capacities unique to human beings. The implicit view underlying Kass's argument, is that the presence of these capacities should elicit a particular attitude of respect, not only from others, but also from ourselves; and therefore, that attempting to radically alter these capacities would not be deemed respectful. Kass fears that the decisions of individuals to radically enhance themselves will result in aggregate changes which will violate and possibly destroy the

dignity of humanity as a whole, and in this regard, his concern is not for individual, but collective dignity.

There are however, a number of inconsistencies in Kass's position which have been discussed above. Firstly, he presupposes the existence of a human essence as the source of human dignity which he claims should be respected as it is and therefore, should not be altered. As mentioned briefly above, those who eschew the existence of a human essence, of which there are many, would find no further point of engagement with Kass's argument. Secondly, there is an element of circularity in his calls to respect this human essence as the source of our dignity due to the fact that the basis of this call is self-prescribed. In other words, the concept of human dignity, as Kass interprets it, and perhaps in general, is founded upon epistemological uncertainty. The response that would be provided to the question regarding why it is that we should not change our given human essence, would be required to draw attention to the fact that these changes would violate our human dignity. This would then lead to the question regarding the foundation of human dignity itself. There are a number of ways of avoiding this lack of founding for calls to respect human dignity.

We may admit, as Kass does at certain points, that the concept serves a pragmatic purpose in that it is commonly believed that human beings possess an intrinsic human dignity, and therefore, we act as if we do in fact possess this dignity; and in this regard, its existence is self-fulfilled. Alternatively, the source of human dignity may be closely associated with human sanctity; which in turn would imply a religious or metaphysical explanation regarding why respect is warranted for human essence, as it is given. Kass's argument contains evidence of this position in that his conviction that our human essence should not be altered in any way implies a respect for what is given, and that which is given, in turn, implies a giver. Lastly, human dignity may be reframed as something akin to dignity as a quality, or dignity as an action guiding value, which is also an avenue which Kass explores. However, this reformulation does not escape the epistemological uncertainty with which notions of intrinsic human dignity are characterised as dignity interpreted in such a way simply becomes another important value by which human beings order their lives and aspire to what is deemed valuable, and thus, lacks the strength of the alternative interpretation.

The third and final problem with Kass's argument lies in the contradictory nature of his opposition to euthanasia, and thus the premature cessation of life processes as a violation of

human dignity on the one hand, and his opposition to any life extension over and above that which may occur through environmental and nutritional improvements as a threat to our human dignity, on the other hand. The distinction he draws implies an acceptance of the way in which we find things which is evidence of a passive or accepting, rather than a proactive approach to the world. In this regard, Kass's argument contains the distinct presence of a status quo bias. A point of engagement with Kass's argument may also lie in his claim regarding the manner in which the changes wrought by radical enhancement would dehumanise us, in terms of transforming us into beings reminiscent of Huxley's *Brave New Worlders*. The possibility of this occurring is, of course, a highly relevant concern. It is however, a line of argumentation which does not necessarily require the utilisation of notions of human dignity. Thus, it would be vulnerable to counterarguments based on the premise that there is as strong a likelihood that the changes to humanity could result in positive outcomes. Bostrom's argument, which will be discussed in Section 5.4, is a good example of such a response. Before commencing with this investigation however, it is necessary to discuss the other renowned human dignity argument, namely, Francis Fukuyama's account regarding the manner in which important human goods such as human dignity may be impacted upon by attempting to change human nature.

5.3 Fukuyama – Human Dignity and Human Nature

> The people in *Brave New World* may be healthy and happy, but they have ceased to be *human beings*. They no longer struggle, aspire, love, feel pain, make difficult moral choices, have families, or do any of the things that we traditionally associate with being human. They no longer have the characteristics that give us human dignity…Their world has become unnatural in the most profound sense imaginable because *human nature* has been altered" (Fukuyama, 2002a:6).

5.3.1 Basic Position

Whilst, as mentioned above, Leon Kass is the thinker most closely associated with the use of dignity arguments in various areas of bioethics, Francis Fukuyama is renowned for utilising the concept in conjunction with the notions of human rights and human nature to lodge an argument specifically against radical biotechnological enhancement, and the possibility of a posthuman future. In this regard, Fukuyama has established himself as one of the foremost opponents of transhumanism. In the collection of essays written by various thinkers entitled *The world's most dangerous ideas* (2004), he argues that transhumanism must be viewed as the primary threat to future humanity.

Fukuyama was a member of the President's Council on Bioethics from 2002 to 2005, during the Bush Administration[109], which was also the period during which Kass served as chairman of the Council. Whilst his stance regarding various bioethics issues is identified as congruent with the bioconservative agenda of the President's Council, his position in certain areas is not as unyielding as that of Kass. He has argued that bioethics has allowed itself to become diverted from genuine "threats to human dignity" (Fukuyama, 2002b:44), posed by the uses to which advances in biotechnology may be put. This is due to its overriding focus on "the moral status of embryos" (ibid.) relevant to areas such as preimplantation genetic diagnosis (PGD) and embryonic stem cell research; both of which result in the destruction of embryos. Fukuyama has also declared publicly that he is not motivated by a religious agenda and is not necessarily opposed to abortion, arguing that 'it does not make sense to treat embryos as human beings with the same kinds of rights that infants possess" (2002a:176). Furthermore, he has argued that the way in which the debate concerning the ethical implications of radical enhancement has been characterised, as a confrontation between science on the one hand and religion on the other, is perilous; due to the fact that it implies that "the only reason one might object to certain advances in biotechnology is out of religious belief" (ibid. 12). In this regard, Fukuyama's argument against radical enhancement, in distinction to Kass's, is absent of religious assumptions and motivations.

Fukuyama's argument against transhumanism proceeds firstly, with an explication of the manner in which the process of evolution: viewed as the adaptation of biological human processes in reaction to environmental factors, has resulted in the development of a specific human nature. He argues that this human nature is the source of human values, which in turn have shaped how human rights are constructed, and thus, the political structures of societies. Human dignity, which Fukuyama describes as *Factor X*, is accorded to human beings due to the specific qualities which have come to comprise human nature and which, as a complex whole, grant humanity its unique status. The argument therefore states that altering our genetic or biological structure will produce a series of changes to our fundamental human nature. These changes will then impact upon and transform human values, threatening the way that human equality and thus human rights are viewed. As a result, the existence of liberal democracy, and thus societal structure and functioning as we know it, will be

[109] Towards the end of his term on the President's Council, Fukuyama however publicly declared his withdrawal of support from the Bush administration and the Republican Party due to their conduct in Iraq, and the stance they assumed against the War on Terrorism. As a result, he endorsed Barak Obama's campaign for presidency of the US in 2008.

jeopardised. Human dignity as founded upon the qualities explicated by Fukuyama, will thus be compromised and possibly destroyed. Of course, in order to fully understand and be able to critique Fukuyama's position, and in particular his notion of human dignity, the various notions he employs in his argument must be explicated. The concepts of human nature and human dignity, or Factor X, as well as the human rights which are argued by Fukuyama to arise from human nature, will be discussed briefly before investigating the changes to human nature which he views as particularly problematic.

5.3.2 Human Nature as Species Typical Behaviour

The existence of a quintessentially human nature has been a keenly debated subject since antiquity. Its formulation is generally attributed to Aristotle who viewed human nature as comprised by the physical or material body and the soul. The soul, also described by Aristotle as the form of the body, "informs, that is, organises [the body as matter] and constitutes the essence of the body" (Ortmann, 2004:181). In other words, the soul, form or essence is what identifies an entity as something in particular, in this case as a human being[110], and provides it with its unique nature. This interpretation of human nature, which prevailed throughout the Middle Ages, was challenged with the advent of modernity, and in particular by the work of David Hume. Hume posited that human behaviour does not arise from intrinsic human capacities, such as an innate rationality, but is rather the product of empirical sensory impressions, and thus interactions with the external world which register on the *tabula rasa* of human consciousness.

The uneven historical trajectory of popularity of the notion of human nature, has therefore been linked to the status of the conflicting halves of the *nature/nurture* binary. An emphasis on the influence of biological or genetic processes as the predominant determinant of human behavior is congruent on the one hand, with the view that human beings by way of their genetic structure possess a distinct and innate human nature. On the other hand, the nurture aspect of the debate refers to the posit that environmental or contextual influences play a much greater role then biological processes or are the sole determinants of human behaviour.

[110] Aristotle argues that not only human beings, but animals and plants too, have a form or a soul due to the fact that they are living entities and require some form of sustenance to survive. Because they possess mobility as well as sensory perceptions and awareness, animal souls are, of course, more complex and operate at a higher level than the vegetative souls of plants. The human soul or form lies at the pinnacle of living entities due to the fact that it possesses unique functions of cognition and rationality (Ortmann, 2004:181).

Of course, the contemporary view is more nuanced in terms of an acknowledgement of the importance of both nature and nurture in determining a variety of outcomes pertaining to human beings, including behaviour and health. However, Fukuyama argues "the balance [remains] in favour of nurture arguments" (2002a:129); despite the presence of distinct scientific evidence illustrating the powerful role of genetic or biological determinants in shaping human behaviour[111].

Fukuyama defines human nature as "the sum of the behaviour and characteristics that are typical of the human species, arising from genetic rather than environmental factors…[where typical refers to] species-typical behaviour" (ibid. 130). He acknowledges the influence of environmental, and thus cultural factors, in contributing towards the diversity exhibited in human behavior; but argues that "there are limits to the degree of variance possible…that are set genetically"[112] (ibid. 132). Due to these limits, it is possible to determine "something close to the median of distribution of behaviour or characteristics" (ibid.). Fukuyama argues that typical criticisms lodged against its existence are not successful in refuting the clear presence of an enduring human nature. Such criticisms include the claim that any proposed characteristics must be present in **all** human beings, and therefore, that due to the fact that examples may always be found of cases in which supposedly universal characteristics are not present, the hypothesis of the existence of a universal human nature is false. Fukuyama's response to this line of argumentation is to draw attention to the fact that "a characteristic does not need to have a variance (standard deviation) of zero to be considered a universal, since almost none exist[113]" (ibid. 134)

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[111] An additional reason for the opposition to the recognition of the role played by genes in determining human behaviour and characteristics is due to the association of nature arguments with the eugenics movements of the twentieth century which based blatantly prejudicial claims upon the supposed genetic differences inherent to the groups they sought to discriminate against. The 'final solution' of the Nazis, and the ensuing holocaust perpetrated during the Second World War, may be viewed as the most extreme example of the eugenics movement.

[112] An example of such a limit discussed by Fukuyama is that of height. Whilst the median height of individuals has increased in accordance with external influences, such as improvements in dietary habits and living conditions, there is a limit to the effect on height that increases or decreases in these areas may produce. In other words, lack of adequate nutrition over a period of time will result in a decrease in median heights, but its reduction beyond a certain point will result in starvation and death. Conversely, improvements in nutrition will produce a longitudinal increase in median heights. However, beyond a certain point this will produce excessive weight gains in a population, rather than increases in height. Furthermore, such improvements will never result in the height of women exceeding the height of men due to the fact that such variables are genetically determined (2002a:132).

[113] Fukuyama argues that "all natural characteristics show considerable variance within the same species…This is particularly the case with cultural animals like human beings: since behaviours can be learned and modified, the variance in behaviour is inevitably greater and will reflect the individual's environment to a greater extent than for animals incapable of cultural learning" (2002a:130).

In terms of his identification of the actual characteristics which comprise human nature, Fukuyama posits that an obvious candidate is **cognition** which enables, among other things, the capacity to acquire language proficiency. The possibility of language acquisition arises due to the possession of "deep structures underlying the syntax of all languages [which are] innate, genetically programmed aspects of brain development" (Fukuyama, 2002a:140). This theory was, of course, put forward by the linguist Noam Chomsky and supported by research in the field of cognitive neuroscience. Cognition also facilitates "innate human emotional responses that guide the formation of moral ideas in a relatively uniform way across the species" (ibid. 142). Furthermore, the presence of some form of **reciprocity**, as well as evidence of **parental love**, have been identified as existing in all human cultures studied by anthropologists. Other characteristics that Fukuyama identifies are the human ability to:

> see colours, react to smells, recognise facial expressions, parse language for evidence of deceit, avoid certain dangers,…pursue revenge, feel embarrassment,…feel repulsion for incest and cannibalism, attribute causality to events, and many other things as well, because evolution has programmed the human mind to behave in these species-typical ways. As in the case of language, we must learn to exercise these capabilities by interacting with our environment, but the potential for developing them, and the ways in which they are programmed to develop, are there at birth (ibid. 143).

Fukuyama argues that whether or not one accepts the hypothesis of the existence of human nature, the treatment and essentially the conferral of particular rights upon, not only human beings but also animals, is based upon an observation of a perceived nature, understood as species typical behaviour (ibid.). In other words, thinkers, such as the ethicist Peter Singer, argue that animals, particularly primates, should be awarded rights due the fact that they possess many characteristics, over and above the ability to suffer, including: "language, culture, reason [and] consciousness" (ibid. 144) which were traditionally posited as specific to human beings. It is **because** of the possession of such characteristics that a clear case is said to exist for the argument that animals warrant humane treatment, and thus must be accorded some form of rights. The important point here, is that "if animals have a 'right' not to suffer unduly, the nature and limits of that right depend entirely on empirical observation of what is typical for their species – that is, on a substantive judgment about their natures" (ibid. 146).

It is also an observation of species typicality that provides the grounds for the declining of particular rights not only to animals, but also to those human beings lacking the cognitive capacities, and thus, the moral reasoning to fulfill specific societal roles and functions. We do not permit animals or children to vote, and the latter group is required to live under protective

adult supervision until they are deemed to have reached an agreed upon state of maturity due to the fact that their requisite cognitive capacities are absent or not yet formed (Fukuyama, 2002a:146). Of course, as Fukuyama points out, the fact that one belongs to a particular species "does not guarantee that one's individual characteristics will be close to the median for that group…but it is a good enough indicator of ability for practical purposes" (ibid. 146-147). Interpreted in this way, a claim for the respect of a set of rights attributed to human beings by way of their possession of a specific array of capacities is not founded upon an arbitrary privileging of human beings above other creatures; but is rather, "a belief about human dignity that can be defended on the basis of an empirically grounded view of human specificity" (ibid.147).

The obvious response to Fukuyama's adept argument for the indisputable existence of a human nature may, of course, be to question the relevance of this for arguments against radical enhancement. In other words, why does the fact that human beings possess an enduring human nature as a byproduct of evolutionary processes, require us to oppose the opportunity to radically enhance ourselves? This response is resonant with the Humean argument which draws attention to the fact that we cannot evince moral or normative implications from an existing or previously existing factual state of affairs. In other words, as Hume famously posited, one cannot deduce "an 'ought' from an 'is'" (Fukuyama, 2002a:114).

Fukuyama however, lodges a detailed argument against this response, asserting that there is in fact "an intimate connection between human nature and human notions of rights, justice, and…the very grounding of the human moral sense, which has been a constant ever since there were human beings" (ibid. 101-102). Therefore, before discussing Fukuyama's view regarding the connection between human nature and human dignity, his argument pertaining to the way in which the human moral order and human rights are sourced in human nature must be explicated, in order to illustrate why changes to the latter would impinge upon human dignity.

5.3.3 Human Rights as Sourced in Human Nature

Fukuyama argues that a legitimate explication of human rights must be formulated in accordance with an "understanding of human ends or purposes, which in turn must almost

always rest on a concept of human nature" (2002a:106). His primary purpose in explicating the connection between the two is to assert that human nature is instrumental in having created the conditions in which "contemporary capitalist liberal democratic institutions" (ibid.) have been able to flourish. Fukuyama regards the prevalence of such institutions in contemporary society as the most preferable means of ensuring that the conditions under which the characteristics which comprise human nature are able to flourish. He argues that failures of regimes such as: communism, socialism or authoritarian systems in general, may be attributed to the fact that these endeavours were in conflict with what are viewed as basic human rights, and thus at a fundamental level with human nature and the requisite conditions of flourishing[114]. An investigation into what constitutes fundamental human rights in liberal democratic societies would therefore be able to elucidate those aspects of human nature that are intrinsic to humankind and should not be tampered with.

Three possibilities are generally posited, regarding the justification or origins of human rights. Rights may be validated by religion; viewed as a product of social construction, and thus performatively or pragmatically illustrated and therefore 'proven'; or they may be derived from human nature, also known as natural rights (ibid. 111). Fukuyama dismisses religious justifications, not only due to the fact that religious beliefs are of course not universally held, but also because the diversity of existing beliefs are such that a uniformity regarding what would constitute the ensuing human rights would be impossible to accomplish. The second option, which interprets rights as contingent upon the societal context or milieu in which they are located, is, of course, plagued by the problem of relativism, and therefore, the fact that according to such an interpretation, universal human rights or moral standards do not exist.

In terms of the third option, Fukuyama attempts to provide a case for a reintroduction of natural rights based upon a perception of human nature, despite the fact that such accounts have been discredited due to the critique that they are guilty of the naturalistic fallacy. The naturalistic fallacy may be viewed as a reformulation of Hume's position, mentioned above, regarding the fact that normative moral conclusions may not be obtained from an examination of a factual state of affairs. In other words, the argument is that just "because human beings are genetically inclined to behave in certain species-typical ways does not imply that they

[114] Examples here include communism's attempts to abolish affiliation and identification with family and friends, as well as the eradication of the right to own private property. Fukuyama argues that such rights and tendencies arise from the nature of human beings, and therefore attempts to eradicate them are ultimately doomed to failure (2002a:127).

should behave in that manner" (Fukuyama, 2002a:114-115). Furthermore, even if we are to concede the existence of a clear human nature and utilise this as a framework for normative moral approbation and disapprobation, this disregards the fact that human nature contains aspects which are arguably unpleasant, "ugly, amoral, or indeed immoral" (ibid. 115).

Regarding the naturalistic fallacy, MacIntyre has presented a counterargument which claims that whilst it is impossible to "deduce moral rules from empirical fact in a logically apriori way…the 'ought' and the 'is' [are] bridged by concepts like 'wanting, needing, desiring, pleasure, happiness, health' – by the goals and ends that human beings set for themselves" (in Fukuyama, 2002a:115). In other words, individuals perform, or refrain from performing, particular actions in accordance with the congruence or incongruence of these actions with specific desired outcomes. This observation does not however imply that actions are weighed in accordance with a simplistic utilitarian calculus of pleasure maximisation and pain minimisation, or purely upon the fulfillment of needs.

Whilst Utilitarianism gives credence to human nature, its overwhelming focus upon utility above all else, fails to account for the sheer "complex[ity of] social feelings…[and] the human emotional system" (ibid. 117). Deontology is also found wanting in this regard, because it is rooted in the Kantian idea that "the good is a matter of the will *overcoming* nature" (ibid. 119) and thus it would disregard the importance of the role of an existing human nature. In other words, a Kantian account of morality would espouse the suppression of natural inclinations, drives and emotions due to the posit that they interfere with the capacity of the human rational faculty to access the good. Despite this characteristic of deontological theories, Fukuyama argues that they nevertheless generally rely upon implicit, and therefore unacknowledged, conjectures regarding human nature[115].

The second criticism argues that human nature is not a suitable basis for human rights due to the fact that it contains undesirable aspects. Fukuyama responds by positing that the key to the bridging of the two, lies in the use of philosophical discussion and reason which may not produce "apriori…truths…[but] does, however, allow us to begin to establish a hierarchy of

[115] An example of this is Rawls' theory, which argues that society should be constructed as if from behind a hypothetical *veil of ignorance*, whereby individuals would ensure accessibility to adequate conditions for flourishing for all levels of society, in order to ensure that should they occupy the lowest stratum of society, such a position would be bearable. Fukuyama argues that whilst this theory is regarded as deontological in nature, it relies, among other things, upon the view "that human beings are risk-averse [and would therefore] choose a strictly egalitarian distribution of resources for fear of ending up on the bottom of the social ladder" (2002a:121).

rights and, importantly, allows us to rule out certain solutions to the problem of rights that have been politically powerful in the course of human history" (2002a:125). An example of a negative characteristic of human nature which Fukuyama discusses, is the human disposition to commit violence. Whilst the presence of violence is universal to all known human cultures, so too are the existence of sanctions and measures aimed at mediating and thus preventing such actions (ibid.). Furthermore, there is a definite emphasis that exists, in favour of the control of violence due to the fact that it is recognised as a threat to esteemed societal goods. Fukuyama concludes that "it is impossible to talk about human rights – and therefore justice, politics, and morality more generally – without having some concept of what human beings actually are like as a species" (ibid. 128). The implication of Fukuyama's argument is therefore, that societal stability and functioning, which are based upon a complex process of development and identification of human values and respect for human rights, are founded in our enduring human nature. Any changes to human nature will therefore disrupt and irrevocably alter social order, and threaten the values by which humanity defines itself. It must be noted at this point, that thus far, Fukuyama has not in any way required the presence of the notion of human dignity for the impact of his argument. Therefore, his view of the role of the latter must be now be addressed.

5.3.4 Human Dignity and Factor X

Fukuyama asserts that the notion of human dignity is generally utilised by individuals or groups to elicit some base-level form of recognition or respect owed to them on account of their humanity. The respect that all human beings merit in equal amounts, is not based upon contingent characteristics such as "skin colour, looks, social class and wealth, gender, cultural background [or] even…natural talents" (Fukuyama, 2002a:149). Whilst characteristics such as these are instrumental in mediating most aspects of our daily existence, calls to respect human dignity are based on the view that:

> when we strip all of a person's contingent and accidental characteristics away there remains some essential human quality underneath that is worthy of a certain minimal level of respect – call it Factor X…You can cook, eat, torture, enslave, or render the carcass of any creature lacking Factor X, but if you do the same thing to a human being, you are guilty of a 'crime against humanity'…Factor X is the human essence, the most basic meaning of what it is to be human. If all human beings are in fact equal in dignity, then X must be some characteristic universally possessed by them (ibid. 149-150).

Fukuyama's claim faces a number of problems; the first of which pertains to what the source of Factor X is. Traditional contenders for this source, briefly discussed by Fukuyama, include religious justifications, as well as the moral autonomy that is possessed by all human beings (2002a:151). Another problem relates to the fact that the notion of human essence, even more so than that of human nature, has been thrown into disrepute since Darwin's findings which led to the realisation that rather than being driven by some ultimate goal, evolution is a blind and somewhat haphazard process. In other words, the way in which human beings are structured, their supposed essence; is contingent, in that it could have been otherwise and therefore does not correlate with any particular moral order. Whilst the notions of human essence and human nature are frequently used interchangeably by thinkers, it is clear that for Fukuyama, the latter is defined with reference to the identification of concrete characteristics, such as species typical behavior, whereas human essence or Factor X is less explicable, and is thus somewhat mysterious.

Fukuyama then investigates a number of explanations for the persistence of faith in the notion of human dignity. Firstly, the enduring presence of recourses to human dignity may be associated with Weber's notion of the "ghost of dead religious beliefs that continue to haunt us" (in Fukuyama, 2002a:156); or simply as an enduring foible of tradition. Secondly, Nazism, as founded upon an explicit disavowal of the view that human dignity is possessed in equal measures by all human beings, provides a horrifying example of what may occur when human dignity is negated. The third possibility forms the core of Fukuyama's argument, namely, that the tenacity of the belief in the existence of a universal human dignity may be ascribed to "the nature of nature itself…[that] moral order comes from within human nature itself and is not something that has to be imposed on human nature by culture" (ibid.). In other words, the tendency to recognise all human beings as deserving of equal respect, and thus a validation of their intrinsic dignity, persists because it is part of human nature.

This quality is what Fukuyama fears will be threatened by future advances in biotechnology, and particularly by the aims of transhumanism. His concern is based upon the contention that radical enhancement will reduce the genetic diversity between individuals, on the one hand, whilst intensifying differences between social groups, on the other hand, due to unequal access to such technologies. Genetic inheritance, or the genetic lottery as Fukuyama argues, is "profoundly egalitarian" (ibid. 157) in that all individuals are equally vulnerable, irrespective of their social or economic position, to the inheritance of defective genes which

may produce undesired outcomes. The eradication of the genetic lottery will result in genetic inheritance ultimately coming to be viewed as product of choice. Fukuyama argues that this will ultimately erode important human values, such as empathy for others who are at the mercy of the genetic lottery, as well as the humble appreciation that one has by the vagaries of chance avoided the inheritance of defective or undesirable genes. Such a concern will only be circumvented by way of government intervention, which seems unlikely to occur in the context of liberal democracy due to negative associations with the state driven eugenics movements of the past (Fukuyama, 2002a:159).

Of course, Fukuyama's explication of the risks for equality and human rights posed by attempts to alter human nature, and thus this mysterious Factor X or human essence, has not yet informed us in any way of the nature of this Factor X by which human dignity is awarded to all human beings. In addition, the notion of human dignity itself has not been explicated; other than stating that it implies a call for respect or equal recognition. The means of identifying Factor X are posited by Fukuyama as lying in an investigation of the conditions by which consciousness as a product of evolutionary development was able to arise. The explanation in this regard, lies in the nature of complex systems and the relationship of parts to wholes (ibid. 162).

The human being, and in particular human consciousness, is complex; in that an identification of the constituent material components of the human brain is not able to inform us how consciousness itself arises. Human consciousness as a whole, emerges in some way as a result of the combination of the various processes of the brain, in a similar manner in which water is an emergent property of the combination of hydrogen and oxygen. In addition, the interactions between parts of complex systems, such as human consciousness, are non-linear. This refers to the fact that changes to what may appear to be an insignificant component, or functioning of the system, may produce large and unpredicted results[116]. The implication of this for radical enhancement is not only that the nature of complex systems is such that altering them in any way may produce unforeseen, and possibly catastrophic, results; but also that this complexity exhibited by human consciousness may be the source of human uniqueness or Factor X.

[116] An analogy which is used to illustrate the idea of non-linearity is the notion of 'the butterfly effect'. This refers to the posit that the movement of the wings of a butterfly can produce a hurricane at a location thousands of miles away from this original location.

It is not only the human brain, and thus consciousness, which exhibits complexity, but human capacities in general. If we are to identify particular human traits, such as the disposition to structure the world in accordance with political thought which was argued by Aristotle to reflect the essence of humankind, it becomes clear that such a tendency has only been able to emerge due to the presence of "human sociability and human language" (2002a:165), and their refinement over a protracted period of evolutionary development. In this regard, Fukuyama argues that "[h]uman politics, though natural in an emergent sense, is not reducible to either animal sociability or animal language, which were its precursors" (ibid. 166)[117].

Furthermore, there is another emergent human quality which adds an additional layer of complexity to the problem of comprehending human consciousness, namely, the workings of human emotion. The contemporary trend in the field of cognitive neuroscience is to interpret the workings of consciousness in terms of mechanistic models of the brain, where the brain is viewed as resembling a highly complex machine. Work conducted in the field of AI, in particular Kurzweil's work which was discussed in Chapter 3, is driven by the expectation that it is only a matter of time before human intelligence will be duplicated computationally. This leads to the impression that possibilities such as computational uploading of the human mind are inevitable. Fukuyama asserts however, that whilst the emulation or surpassing of human intelligence is a distinct possibility, "it is impossible to see how [machines] will come to acquire human emotions" (ibid. 168). The basis upon which human beings, during their evolutionary development came to possess emotions remains an unfathomable mystery.

Whilst evolutionary biology would, of course, explain the presence of various emotions, in terms of their ability to ensure the survival of the species, it is the "particular subjective form that the emotions take…[and the fact that] there are no obvious reasons this form should have been selected for in the course of evolutionary history" (ibid.), that seems to remain a mystery. Fukuyama argues that rather than traditional assertions which associate the human essence or Factor X with human rationality or moral autonomy, human distinctiveness lies in the fact that our:

[117] Whilst it may be argued that particular animals, such as primates, possess similar capacities, albeit at a more rudimentary level, Fukuyama posits that viewing human political structures as akin to the gregariousness displayed by animals, is a clear example of the conflation of parts and wholes (2002a:165). He does not elucidate this point in great detail, but it is clear that what he implies by this is that sociability which is also displayed by animals, forms but one part of a complex human whole, which includes other distinctly human capacities such as the propensity to "formulate, debate, and modify abstract rules of justice" (ibid.).

> consciousness…combine[s] human reason, human language, human moral choice, and human emotions in ways that are capable of producing human politics, human arts, or human religion. All of the nonhuman precursors of these human traits that existed in evolutionary history, and all of the material causes and preconditions for their emergence, collectively add up to much less than the human whole (2002a:170)

In other words, it is not sufficient to claim that because the genomes of human beings, and particular primates, are virtually identical[118], that there are no substantive differences between the two species; and therefore, that there is no unique human essence. This is because the non-linearity of complex systems, such as human consciousness, is such, that seemingly unappreciable or minute divergences are able to produce major and unpredicted effects. At some point during the evolutionary development of the human being, there was an "ontological leap [that took place]…It is this leap from parts to a whole that ultimately has to constitute the basis for human dignity" (ibid.). Of course, as Fukuyama points out, if dignity and an elevated moral standing above all other species are attributed to humanity by way of this complexity, then it is obvious that Factor X cannot be identified with any specific or single human capacity or quality. Factor X is rather the whole which possesses something over and above the combination of its constituent parts, namely, the individual human abilities and characteristics which ground human dignity (ibid. 171). Fukuyama argues that the human genetic structure is the blueprint which enables each individual to manifest Factor X, and therefore, that the risks posed by tampering with this structure may, as a result of the mechanisms of non-linearity, result in devastating consequences for human dignity.

5.3.5 The Implications for Human Dignity of Altering Factor X

Factor X therefore refers to the development of human beings into complex entities, whose capacities and abilities exceed explanations associated with their constituent biological parts and processes. This implies that the constituent biological parts and functions which produce factor X are interrelated, and therefore, that, as Fukuyama argues, "none of the key qualities that contribute to human dignity can exist in the absence of the others" (ibid.). An example of this is the way in which human rationality is impacted upon by various emotions which are able to either impede it or sharpen it. The capacity to articulate human values and pursue an ethical course of action is thus made possible due to both human rationality and emotional

[118] The difference between the human and chimpanzees genome is between 1.24 and 0.07%. Thus, there is a similarity of roughly 98.8% (Feng-Chi, C. & Wen-Hsiung, L. 2001:444).

proclivities. In addition, all these capacities are impacted upon by various contextual factors, including the emotional and rational disposition of others (Fukuyama, 2002a:172).

Fukuyama's ultimate purpose in articulating the existence of an unmistakable human nature associated with the uniquely human possession of Factor X, is to identify what is threatened by radical enhancement. His answer to this question is that it is "the full range of our complex, evolved natures against attempts at self modification [that requires safeguarding]. We do not want to disrupt either the unity or the continuity of human nature, and thereby the human rights that are based on it" (ibid.). Because the source of humanity's unique status is factor X, or human complexity, attempts to reduce this complexity, which Fukuyama posits will be the inevitable result of radical enhancement, are of the utmost concern. Fukuyama argues that biotechnology will sacrifice everything to its overriding imperative which is the eradication of all forms of physiologically based discomfort, affliction and suffering. The implication is that this biotechnological drive, due to the fact that it focuses on one component of human functioning only, disregards the complex whole.

Fukuyama argues that the facet of human complexity which is most vulnerable to radical enhancement is the range of human emotions. The evidence for his concern lies in the growing strength of the Neuropharmacology industry which enables the diagnosis and eradication of problematic affective states and emotions. Whilst Fukuyama is not mounting a critique against the use of treatment by those who require medication to address pathological levels of functioning, his concern lies with the indeterminate nature of the treatment/enhancement distinction. The blurred lines of this distinction will in all likelihood be the means through which enhancement endeavours will be introduced, and ultimately be legitimised. In addition, the biotechnological imperative, mentioned in the previous paragraph, tends to frame affective states in terms of negative or positive, desirable or undesirable categories. Fukuyama's contention is that the various supposedly negative affective states are inextricably linked to, or enable, the manifestation of positive emotions. He argues that:

> what we consider to be the highest and most admirable human qualities, both in ourselves and in others, are often related to the way that we react to, confront, overcome, and frequently succumb to pain, suffering, and death. In the absence of these human evils there would be no sympathy, compassion, courage, heroism, solidarity, or strength of character. A person who has not confronted suffering or death has no depth. Our ability to experience these emotions is what connects us potentially to all other human beings, both living and dead (2002a:173).

Fukuyama views the Neuropharmacology industry as the first step in the path of radical enhancement; and therefore, as laying the way for the kind of transformations to human beings reminiscent of Huxley's *Brave New World,* regardless of whether genetic enhancement ever becomes a possibility. He argues that these changes will ultimately affect and alter political structures. Regarding the latter possibility, Fukuyama develops an argument pertaining to the impact which life extension will have upon societal, and thus political structure. The major problem foreseen here by Fukuyama, concerns the claim that "political change often occurs at generational intervals" (2002a:66). The behaviour and temperaments of individuals are influenced by the era in which they reach maturity, and in this regard, it is virtually impossible to alter entrenched attitudes. As a result, "political, social and intellectual change will occur much more slowly in societies with substantially longer average life spans" (ibid.).

Of course, Fukuyama's concern in this regard is based upon one possible permutation of a society characterised by a larger population of individuals above a certain age. It is not a foregone conclusion that the power to effect change will remain in the hands of older generations, or that younger generations would stand by impassively and relinquish control. There are manifold ways in which societal structure may change to accommodate the enduring presence of older generations, and a variety of alternate avenues which may arise relating to how such individuals could pursue meaningful existences. It is not that Fukuyama's concerns are invalid, but rather, that they are one possible extrapolation, or speculation, regarding the consequences of life extension, and thus are not an adequate basis upon which to dismiss life extension endeavours *in toto*. The purpose of this thesis is however, to examine the efficacy of the notion of human dignity as a means of critiquing transhumanist aims. In this regard, it appears that whilst Fukuyama has presented an interesting and effective argument regarding the risks of altering human nature, he has not in any way adequately defined human dignity itself. In addition, he has not provided compelling evidence regarding the necessity of employing the concept of human dignity for his purposes, rather than alternative notions, such as the notion of **respect**, either for factor X or for human persons due to their possession of factor X. An assessment of his utilisation of the concept will thus follow.

5.3.6 Concluding Remarks

Whilst Kass's utilisation of human dignity in his argument against radical enhancement displays a tendency to conflate dignity as a quality with human dignity, as well as to employ the latter notion in a circular manner when other values might equally suffice, the concept plays an indisputably prominent role in his argument. Fukuyama, on the other hand, bases his entire argument against radical enhancement upon the notion of human dignity, without attempting to fathom its meaning, despite an entire chapter supposedly devoted to this purpose. In other words, dignity here assumes a decisively background role and is employed by Fukuyama intermittently, to add weight to the various conclusions he asserts. This does not imply that his argument to assert the existence of Factor X or a human nature fails, or is inadequate to the task of providing a basis upon which objections to radical enhancement may be lodged. Rather, what is not evident, is what the use of the notion of human dignity, over and above its rhetorical impact, actually adds to his argument.

For Fukuyama, human dignity resides in the possession of Factor X. In this regard, human dignity is strongly associated with the possession of a human nature, interpreted at the deepest level as the complex whole that is Factor X; which in turn distinguishes human beings as capable of devising and abiding by the human rights which characterise liberal democratic society. Dignity is therefore something distinct from Factor X, and yet, despite identifying that it "is one of those concepts that politicians, as well as virtually everyone else in political life, like to throw around, but that almost no one can either define or explain" (Fukuyama, 2002a:148), Fukuyama then proceeds to follow a similar course! The closest that he comes to attempting to define dignity itself is his posit that dignity is employed to assert claims for the respect or recognition of the equality of all human beings. If this is his interpretation of what the concept of human dignity signifies, it is not clear why his argument may not be reformulated by utilising notions such as respect for persons, justice and the equality of all. In other words, if the term human dignity serves merely as a means of articulating the respect that is owed to all human beings equally, and on account of their possession or potential to possess distinct capacities, the nature of which vary in accordance with the views of the individual formulating the argument, why not simply formulate the argument in such a way?

If the difficulty of defining the concept of human dignity is such that an entire argument which is devoted to its protection is not able to elucidate it in any appreciable manner, other

than to claim that it implies a type of respect owing to all human beings, the legitimacy of its use is called into question. Fukuyama's argument could well proceed without the presence of the concept of human dignity. Such an argument would however, have to rely upon its ability to convince its audience of the possible risks involved in altering human nature, and would in a sense not provide the deontological punch associated with the concept of human dignity. Kass and Fukuyama, whilst sharing a bioconservative orientation, have provided two extremely different arguments regarding why the project of radical enhancement ought to be prevented. Their use of the notion of human dignity is questionable, however.

The notion of human dignity has also been utilised as grounds for an argument in defense of transhumanism. Bostrom's argument in this regard will now be briefly discussed. His argument emphasises another problematic aspect associated with recourses to human dignity, namely, the confusion that is produced by the presence of competing interpretations of the concept which further obfuscate its meaning.

5.4 Bostrom: Posthuman Dignity

> Transhumanists…see human and posthuman dignity as compatible and complementary. They insist that dignity, in its modern sense, consists in what we are and what we have the potential to become, not in our pedigree or our causal origin. What we are is not a function solely of our DNA but also of our technological and social context. Human nature in this broader sense is dynamic, partially human-made, and improvable (Bostrom, 2005c:211).

5.4.1 Basic Position

Bostrom presents a concise response to the bioconservative claim that in seeking to utterly transform the human species, transhumanist aims will violate the dignity of humanity. To do this, he engages in particular with the arguments of Kass and Fukuyama, as well as briefly with those of Hans Jonas and Jürgen Habermas. Bostrom argues that whilst the project of not only radical enhancement but also enhancement in general poses potential risks, the possible advantages that may be realised are such, that the development and utilisation of transhumanist technologies is warranted. Rather than prohibiting the development of these technologies, and thus enhancement *in toto*, Bostrom argues that potential problems and concerns should be addressed individually with relevant responses (ibid. 203). Where socio-political concerns relating to the possible consequences of enhancement exist, such as issues of distributive justice or potential polarisation between groups of enhanced and unenhanced

individuals, Bostrom draws attention to the fact that such challenges are already present in contemporary society. He argues that because these are "social problems…[it is] social remedies" (2005c:207) that are required. Bostrom also concedes that there is a great likelihood that transhumanist aims and technologies will result in a future posthuman state, but does not view such a possibility as problematic, or as a reason to forestall their development (ibid. 203). His basic premise in this regard, is that fears regarding the violation of human dignity are unfounded as they automatically imply that posthumans will not possess dignity.

Bostrom also investigates the frequent recourses to Huxley's *Brave New World* present in the work of bioconservative thinkers. The *Brave New World* hypothesis is ubiquitously provided as the warning of what awaits humanity should transhumanists be allowed to pursue their enhancement endeavours. The power of the hypothesis lies in the portrayal of *Brave New Worlders* as complicit in their own dehumanisation. No authoritative control is required to enforce the status quo because the status quo is not only accepted, but embraced by all. In response to this, Bostrom argues that the hypothesis is a wholly inaccurate reflection of transhumanist aims (ibid. 205). The *Brave New World* is undoubtedly a world where dignity is absent but this is not on account of the use of enhancement technologies by its inhabitants or due to their having reached a posthuman state as is posited by thinkers such as Kass and Fukuyama. Rather, Bostrom articulates, their dehumanisation lies in the fact that their society is:

> static, totalitarian, caste-bound; its culture is a wasteland…their intellectual, emotional, moral, and spiritual faculties are stunted…and everyone…[except those who are in control is] barred or discouraged from developing individuality, independent thinking and initiative, and [is] conditioned not to desire these traits in the first place. *Brave New World* is not a tale of human enhancement gone amok but a tragedy of technology and social engineering being used to deliberately cripple moral and intellectual capacities – the exact antithesis of the transhumanist proposal (ibid.)

It is Bostrom's contention that the possibility of such a world will be circumvented as long as a respect for the autonomy of all individuals to decide whether or not to utilise enhancement technologies is entrenched.

5.4.2 The Question of Dignity

Bostrom alludes to the fact that the notion of dignity requires clarification if it is to be utilised coherently, and therefore, provides two interpretations which accord with the dignity as a status and dignity as a quality distinction. According to the first construal, dignity is utilised as a "moral status…[where it justifies] the inalienable right to be treated with a basic level of respect" (Bostrom, 2005c:207). The second interpretation posits "[d]ignity as the quality of being worthy or honorable; worthiness, worth, nobleness, excellence" (ibid.). Bostrom's first formulation of dignity is roughly congruent with its general understanding, and thus, with the way in which Kass and Fukuyama utilise the notion. All three thinkers interpret human dignity as awarded to human beings by way of some specified characteristic/s intrinsic to humanity. In other words, for Kass and Fukuyama, human dignity is intimately connected with, and contingent upon, the presence of a human nature or essence. Thus, if Bostrom is to refute, or at least cast doubt upon, their arguments he must proceed by engaging specifically with their claims, and thus illustrate why they are mistaken. In this regard, he does not fail; and rather than dismissing the concepts of human nature or human essence as irrelevant, he sketches a brief description of the way in which posthumans could too be endowed with both dignity as a status and dignity as a quality.

The erosion of human dignity may be articulated as possibly occurring at different stages. Firstly, dignity may be compromised during the interim or transhuman stage in which individuals who are at different points of the enhancement process exist alongside those who have opted to remain unenhanced. In such cases, the fear is that those who are unenhanced will be viewed as possessing a lower status to that of enhanced individuals, akin to the lower status currently accorded to animals. Due to the fact that the natures of the enhanced will have been altered to such an extent, the values which ground the belief in the equality of all will be transformed, thus unenhanced individuals will be at grave risk. This is, of course, one of Fukuyama's concerns. It would appear however, that such an interpretation is based upon the view that enhancement will automatically create posthuman beings who possess a diminished range of values and an inferior sense of morality. Transhumanism is, however, concerned with improving and developing human beings in all their capacities, including the areas of emotive and cognitive functioning, both of which impact such areas of concern. Bostrom thus argues, that in the same way that human progress has been characterised by a gradual extension of the scope regarding those who are viewed as possessing dignity as a

status which accords them equal respect, so too will this area come to encompass not only posthumans but also encapsulate unenhanced human beings (2005c:206).

Secondly, the dignity of the human race as a whole may be compromised or eradicated as a result of the transformation of humanity as a species into a posthuman species. This concern is generally associated with bioconservative thinkers, and in particular is the concern which motivates Kass's argument. Bostrom does not address this concern in depth as presumably he is of the view that his explication of the *Brave New World* hypothesis as incongruent with transhumanist aims, serves as an adequate response to this line of argumentation. In other words, the violation of the dignity of humanity as a whole will only occur if radical enhancement results in a degeneration of each individual human being, and thus the human race in general, if posthumans are 'less than' their predecessors. Bostrom disagrees that such an event will occur.

Furthermore, Bostrom disagrees not only with the claim that the preservation of human nature in its present form implies a respect for human dignity, but also with the view that human nature may itself be given as the source of human dignity. Bostrom argues that esteeming human nature, which is a product of evolution and thus natural processes, disregards that "[h]ad Mother Nature been a real parent, she would have been in jail for child abuse and murder" (ibid. 209)[119]. It becomes clear here, that because of the absence of consensus regarding the source of human dignity, the concept is difficult to use as the basis of a coherent argument. In other words, there are differing interpretations regarding what provides human beings with dignity. Thus, there is not a clear point of engagement with an argument such as Fukuyama's which presents an intricate account of the manner in which specific changes to human nature will compromise dignity, if there is disagreement that human nature is the source of dignity.

In terms of Bostrom's second interpretation of dignity, he argues that not only will posthumans be able to display the "special excellence or moral worthiness" (ibid. 208) which characterises certain human behaviours; but that posthumans may display a greater degree of

[119] Here Bostrom is utilising the naturalistic fallacy to assert that natural or factual states of affairs are an unreliable or illegitimate source for the grounding of moral values. Fukuyama of course, provides an argument in response to the naturalistic fallacy which was discussed above. Bostrom does not engage with this position however, and presumably views Fukuyama's response as having failed to invalidate the naturalistic fallacy critique.

such dignity. This explication of dignity is, of course, akin to dignity as a quality. Bostrom argues that in the same way that the behaviour of human beings may be viewed as more or less moral, so too will posthuman behaviour be characterised by such differences. However, the fact that some individuals currently lead less than 'worthy' lives is generally not taken as grounds for the removal of their right to autonomy unless others are being harmed (Bostrom, 2005c:209). Bostrom argues that undesirable human behaviour is generally moulded by "countermeasures…[such as] education, encouragement, persuasion, social and cultural reforms. These, not a blanket prohibition of all posthuman ways of being, are the measures to which those bothered by the prospect of debased posthumans should resort" (ibid.).

Of course, Bostrom is correct in his position that there is no reason why the behaviour of posthumans could not be characterised by "excellence or moral worthiness", in other words, by dignity as a quality. However, it must be noted that whilst employing dignity as a quality represents another way in which dignity arguments may proceed; its efficacy as a rebuttal to bioconservative arguments is not evident and it obfuscates Bostrom's position[120]. Whilst arguments such as Kass's may not necessarily articulate this with sufficient clarity, it is not dignity as a quality which represents the primary focus, and thus which is considered to be at stake, but rather human dignity or dignity as a status. In this regard, Bostrom's counterargument is somewhat superficial in its engagement with the afore-mentioned human dignity arguments, and is also problematic due to its inadequate explication of the notion of human dignity itself.

[120] By discussing dignity as a quality in greater depth than human dignity, Bostrom, in a sense, lays himself open to misunderstanding; and has been criticised in this regard for utilising a notion of dignity which is at odds with its general understanding. Its general understanding is, of course, its association with the intrinsic worth, and thus the equality, of all human beings. This is, however, clearly a misunderstanding of Bostrom's position. Jotterand argues that Bostrom's interpretation of dignity contains a "a strong contrast between human dignity and posthuman dignity...[because] transhumanism conceives posthuman dignity in degrees" (2010:47). Clearly, what Jotterand is referring to is Bostrom's explication of dignity as a quality. However, Bostrom has explicitly stated that this second interpretation of dignity is one of "two different senses of dignity" (Bostrom, 2005c:207), where the first interpretation refers to universal human dignity. By including it, he has simply attempted to illustrate that in addition to being able to retain their intrinsic worth or human dignity, there is no reason why posthumans could not **also** display the other interpretation of dignity, namely, dignity as a quality. Chapman also argues that Bostrom's notion of dignity "contradicts three fundamental human rights affirmations…[namely] that human dignity is universal…that human dignity is inherent within human nature and not dependent upon achievements of particular 'excellences';…and that human dignity applies equally to all people, not admitting of different degrees" (2010:62). Here too, it seems that Bostrom's position has not been understood correctly. However, the fact that these misunderstandings have occurred in the first place, serves to illustrate that Bostrom has not adequately addressed the way in which posthumans could retain the first interpretation of dignity, namely, human dignity as intrinsic worth.

5.4.3 Concluding Remarks

Bostrom concludes with the posit that in comparison with our human predecessors, human beings today could be viewed as no longer human, but rather as "posthuman" (2005c:211), due to the utter divergence in all aspects of existence between the two, examples of which include vast differences in knowledge, abilities and behaviour. However:

> these radical extensions of human capabilities – some of them biological, others external – have not divested us of moral status or dehumanised us in the sense of making us generally unworthy and base. Similarly, should we or our descendants one day succeed in becoming what relative to current standards we may refer to as posthuman, this need not entail a loss of dignity either (ibid.).

Whilst Bostrom is justified in his claim that there are good reasons for the assumption that posthumans will retain the dignity viewed as inherent to humanity, his utilisation of the concept of human dignity displays the same error of omission which has caused thinkers such as Macklin to declare the notion undefinable and thus useless. Other than his identification of human dignity as a "moral status…[and] the inalienable right to be treated with basic level of respect" (ibid. 207), Bostrom provides no further explication of the notion. His explication of dignity can be loosely reframed as the claim that because human beings possess something special and unique, they must be treated with an equal level of respect. He is, of course, arguing that it cannot simply be assumed that humanity will lose this special and unique quality, and thus its dignity, as a result of radical enhancement.

Bostrom's formulation of dignity is thus as vague as Kass's, and insubstantial as Fukuyama's. Furthermore, as is the case with Kass's argument, his definition of human dignity does not provide sufficient evidence regarding why the notion operates more effectively as an injunction for or against radical enhancement, than say, respect for the equality of human beings. Of course, Bostrom's purpose is clearly not an attempt to provide an argument in support of transhumanism as founded upon its ability to increase human dignity. He has argued extensively for the benefits of the realisation of transhumanism aims elsewhere. He is also not dismissing the concept of human dignity as an ineffective means of critiquing transhumanism. Rather, Bostrom is attempting to provide a counter-argument for the charge that transhumanist aims will automatically violate human dignity if they succeed in transforming humanity into posthumanity. In a similar manner to Kass and Fukuyama, he has provided a speculative account of the possible, in this case possible **positive**, consequences

associated with radical enhancement, but has failed to shed further light upon the notion of human dignity.

A means of strengthening Bostrom's argument is articulated by Sandler and Basl. They emphasise the fact that arguments which claim that posthumanity is incompatible with human dignity due to the alteration of human nature, or transformation of human beings into another species, are implicitly associating human dignity with human "species membership" (2010:65). Whilst such arguments may outline an account of the unique human capabilities which are the source of human worth, and thus imply that they are basing their claims upon the latter, their inability to accept that posthumans too may possess such capabilities,and thus worth, implies that there is a tacit association of dignity with unchanging species membership. Species membership is, of course, not an acceptable foundation for human dignity due to the fact that such a "distinction…is arbitrary in the same way that a distinction made on the basis of race or gender would be arbitrary" (Singer in Sandler and Basl, 2010:65). Exposing the implicit assumptions which inform dignity arguments against transhumanism is an effective means of revealing such biases which Bostrom has not fully availed himself of. Rather than focusing solely on responding to the bioconservative claims regarding the negative outcomes and consequences which will arise from radical enhancement, it may have been more effective for Bostrom to have provided substance to the notion of human dignity itself and to examine the efficacy of using the concept to critique transhumanism.

5.5 Conclusion

This chapter commenced with a discussion of the arguments of Kass and Fukuyama in order to assess the manner in which they employ the concept of human dignity to argue against the project of transhumanism and its acceptance that the aims it proposes will result in a transformation of the human species into a posthuman species. The counter-argument provided by Bostrom, which posits that there are equally good reasons to assume that a radically enhanced posthuman species would retain the dignity possessed by its human predecessors, was also discussed. Of course, the arguments in opposition to radical enhancement represent a decidedly pessimistic prediction of a posthuman future, whilst Bostrom as an advocate for transhumanism, presents a more optimistic portrayal of what the realisation of the movement's aims could entail. The importance of this discussion for the

purposes of this thesis, however, is to establish the validity of human dignity arguments as a means of evaluating the morality of transhumanism.

Those who use dignity arguments in this context, clearly believe that they are the most effective source of argumentation against radical enhancement; and therefore, that the concept of human dignity is equipped to address the type of concerns elicited by radical enhancement, more effectively than any other existing value or principle. The problem is that it appears that the concept of dignity is not able to operate on its own but requires reference to, and therefore is contingent upon, some other factor. The identity of that other factor is whatever it is that is taken to be the source of human dignity, the presence of which validates the claim that human dignity merits the respect of all human beings as possessing equal worth. Thus, in order for the concept of human dignity to not only function effectively but to make any sense at all, arguments which utilise it generally proceed by stating that human beings have dignity on account of the fact that they possess X or that human beings should be treated with respect as equals due to their intrinsic human dignity, which in turn arises on account of, or is strongly associated with, their possession of X. This requires dignity arguments to stipulate the nature of X, as well as to illustrate why, and how, an alteration of X would impinge upon the equal status of human beings, and/or, depending upon the specificities of the argument, how this would violate human dignity. Such a task presents enormous challenges at various levels with the most obvious example being the identification of the source of human dignity, or the mysterious X, for which little consensus exists.

In addition to the challenges mentioned above, the concept has an alternate interpretation, namely, dignity as a quality of excellence or worthiness exhibited in the behaviour and conduct of individuals, as well as in the way in which individuals relate to one another. This type of dignity is, of course, easier to utilise, define and comprehend and does not require the presence of other values or factors in order to function. However, it lacks the normative power of the notion of inherent, inviolable human dignity due to the fact that, as mentioned in the previous chapter, it is informed by contextual factors. The presence of these two distinct types of dignity, coupled with the challenges discussed above, produce problematic results. In the case of Kass's argument, the result is an argument characterised by circularity and contradictions. Fukuyama, on the other hand, clearly desires the impact that utilising the concept will provide; his argument however, suffers from a lack of adequate explication and engagement with the notion of human dignity itself. Thus, it fails to provide good reason for

the use of the notion of dignity, rather than some other concept such as respect for persons. Bostrom also provides a clear example of the tendency to utilise the concept without adequate explication, which results in confusion regarding which type of dignity informs his position. These examples call into question the efficacy of the notion of human dignity, not only for arguments against transhumanism, but for bioethical dilemmas in general. This matter will be addressed in the conclusion of this thesis, which will now follow.

6 Concluding Remarks

This thesis has investigated the efficacy of notions of dignity as a means of assessing the aims of transhumanism. This included a discussion of the contextual factors which have exerted an influence upon the transhumanist movement; its values and aims, as well as the means through which it posits these aims will be met. The historical uses and conceptual difficulties associated with notions of dignity were also explicated in detail, in order to assess the dignity arguments which have been lodged against transhumanism. The discussion of three renowned dignity arguments served as examples of the ways in which the concept of dignity may be applied, either in opposition or support of transhumanist aims. Each argument was critiqued in turn, in order to illustrate the problems associated with the use of the concept. The conclusion of this thesis will briefly summarise these problems and discuss their implications for the use of dignity arguments in bioethics in general. The possibility of salvaging a useful concept of dignity associated with Nordenfelt's "dignity of identity" (2004:73), which was explored in Section 4.4.1, will also be investigated. Finally, the question of the moral status of transhumanism will be addressed.

6.1 Implications for the Use of Dignity Arguments in Bioethics

Whether or not the aims of transhumanism do, in fact, represent a potential violation of the dignity of humanity depends of course upon how human dignity itself is defined. The task of achieving consensus regarding what such a definition would entail is, however, beset by problems. It is my contention that the difficulties associated with defining dignity arise as a result of what may be viewed as the inherently problematic nature of the concept of dignity itself. Although employed extensively, the concept's meaning is generally either left undefined or is only vaguely alluded to. The use of the concept of human dignity in human rights instruments, national constitutions and bioethics instruments, as discussed in Chapter 4, evidences this lack of definition. In this regard, it would appear that the drafters of such documents either presume that the definition of human dignity is self-evident, or that they have taken cognisance of the difficulties involved in defining the concept, and have therefore avoided this task altogether. An additional reason, which was suggested in Section 4.2.6, is that the vagueness of the concept possesses distinct advantages. This refers to the fact that whilst individual nation states may disagree with regards to the precise nature of human

dignity, and what a respect for human dignity would entail, there is widespread global recognition that human dignity is something which should be respected and protected in some way. Thus, the concept possesses the advantage of being able to unify the drafting of international documents and agreements which require ratification by nation states with seemingly disparate political agendas and structures.

A lack of adequate definition is also evident in most bioethics arguments which utilise the notion of human dignity in some way. This is the primary criticism lodged by the thinkers discussed in Section 4.3.4, who argue that the use of the concept in bioethics should be abolished on the grounds that it is irrevocably vague. Fukuyama's argument against transhumanism, which was investigated in detail in Chapter 5, is an example of an argument which fails to adequately define dignity. There are a number of reasons which may be posited for the absence of clear definitions of dignity in bioethics arguments. Firstly, it may be that the concept is being used to provide normative power or added legitimacy to arguments in which the interpretation of dignity is not integral to the success of the argument, and is thus, simply added onto an existing position. Fukuyama's argument may once again be used as an example of this tendency. He presents an interesting account of the way in which conceptions of human rights may be disrupted due to the realisation of transhumanist aims. However, because he fails to give substance to the notion of human dignity which he employs, it therefore appears as if the concept of dignity has simply been grafted onto his argument; thus obfuscating his position rather than strengthening it.

Secondly, it may be that the concept of dignity is employed mistakenly in some arguments as a means of emphasising the ethical concerns derived from principles such as the respect for persons or autonomy, which accords with Macklin's view (2003:1419). This would be congruent with a dignity as empowerment interpretation in which the concept of dignity is used to give support to a particular action. In other words, such arguments would claim that a particular action ought to be permitted on the grounds of a respect for human dignity. Here, the interpretation of human dignity would imply that because individuals are intrinsically valuable, they therefore have particular rights, one of which is the right to pursue a life characterised by flourishing. This is the position of Beyleveld and Brownsword (2001), who argue that an investigation of what is implied by a respect for dignity will reveal that at its most fundamental level, it may be reduced to human agency or autonomy. The fact that the

concept is open to such different interpretations, however, casts aspersions upon its legitimacy in general.

Thirdly, it is possible that the challenges associated with defining the concept of human dignity are insurmountable due to the fact that the concept is simply too difficult to define. The discussion of Kass's use of dignity arguments against transhumanism serves to illustrate this point. Unlike Fukuyama, Kass attempts to define the notion of dignity he employs. However, in doing so, Kass's argument displays evidence of the irrevocable conflicts which lie at the heart of the concept of dignity itself, and thus falls prey to various criticisms such as charges of circularity and inconsistency.

The first conflict which must be resolved: is that in order to define the concept, the grounds upon which calls to respect dignity are based, must be identified. In other words, whilst dignity is generally grounded in some way upon human worth, with what it is that distinguishes human existence as unique and valuable, it is necessary to articulate the nature of this distinguishing human quality and/or capability. In this regard, dignity does not operate independently, but is contingent upon the identification of what Fukuyama describes as Factor X, and what Kass refers to as the human essence. Whilst the task of identifying this Factor X represents one of the most enduring philosophical endeavours, the differing interpretations which inform the arguments presented in Chapter 5 are evidence that consensus regarding its identity has not yet been reached. In the first place, the success of dignity arguments depends on such consensus.

The second problem associated with the conflicts with which the concept is beset, lies in the different ways in which it may be interpreted. The primary conflict lies in the fact that dignity may either be interpreted as signifying the inherent worth of the human being and humanity in general and thus viewed as an unearned human status; or it may be viewed as a quality which characterises the behaviour, actions or nature of individuals or practices. As identified by Debes, this opposition may be reformulated by distinguishing dignity as either a human ideal or value towards which one strives, from its manifestation or expression (2009:59). This interpretation serves to explicate the other opposition which plagues the use of dignity arguments, namely, whether or not dignity is used as a means of empowerment or constraint. On the one hand, it is possible that dignity as empowerment is simply referring to autonomy, as mentioned above. Alternatively, in accordance with Debes' interpretation, whether or not

one would advocate a particular action or seek to constrain it would depend upon the interpretation one holds regarding dignity as a value, and what is viewed as the appropriate means of expressing this value. The problem with this interpretation, however, is that whilst it may serve as a means of explaining how the two opposing interpretations of the concept of dignity could be united **in theory**, it is unable to assist us in its actual application. This is due to the fact that the nature of dignity, as a value itself, would still require substantive clarification. In order for Debes' reformulation of dignity to avoid a charge of arbitrariness, due to the fact that it would depend upon an interpretation of what would constitute acting in accordance with dignity as an action guiding principle or value, it is necessary to clarify and achieve a modicum of consensus regarding the nature of what dignity as a value would entail.

The third problem associated with the notion of human dignity is one that is, of course, inherent to any deontologically motivated moral claim in general, namely, its epistemological contingency. In other words, because human dignity is a product of a deontological, as opposed to a utilitarian moral approach, calls for its respect must ultimately be justified, not in terms of its ability to secure positive outcomes or maximise utility for humanity, but rather due to the fact that it is a rule by which we choose to live because we view it as a human good. Its validity is therefore pragmatically illustrated. Of course, as pointed out by various thinkers, in the absence of religious or utilitarian justifications the fundamental status of most moral claims must be pragmatically grounded. In other words, we act as if our moral claims were absolute. Thus, the epistemological contingency of dignity is not unique. However, there are difficulties which arise if one asks **why** it is that dignity must be respected. Religious justifications aside, the answer which will be provided, will in all likelihood refer to the fact that human dignity should be respected due to the fact that human life possess worth and is valuable. However, this explanation regarding **why** dignity should be respected is generally provided as the definition **for** dignity itself. When it is defined, dignity is generally viewed as signifying human worth in some way. Thus, the concept's inherent epistemological contingency results in the tendency for arguments, such as Kass's, which attempt a comprehensive explication of its meaning to possess a distinctly circular character.

Despite the difficulties associated with pinpointing its exact meaning, the temptation to employ its powers of persuasion is clearly difficult to resist due to the fact that there is such widespread, dare I say universal, belief in the respect for human dignity itself. In this regard, there is a tendency to separate human dignity itself from the way in which it is conceptualised

and defined. Such a position would argue that whilst the concept is beset with problems and thus is of little use, human dignity itself is clearly a fundamental human good. However, this interpretation of the concept of a phenomenon as a flawed version of the actual ideal phenomenon which instantiates that concept, whilst widely held, implies a distinctly Idealistic or Platonic assumption. In this regard, such a view would share the plethora of problems associated with metaphysically grounded assumptions in general.

It is my contention that the difficulties which have been outlined above, provide clear grounds for the conclusion that Macklin and other thinkers are correct in their arguments that dignity is "incoherent and at best unhelpful, at worst misleading" (Ashcroft, 2005:679). In this regard, it is also my contention that the concept of human dignity is not equipped to deal with the stringent demands that are required of it in the bioethics arena. However, there is a clear place for the type of dignity implied in a dignity as a quality interpretation, and in particular the dignity which characterises Nordenfelt's "dignity of identity" (2004:73). In the context of bioethics, such a dignity would be associated with treating individuals in a dignified manner and thus ensuring that as patients or research subjects they are not subject to humiliating or degrading practices. Dignity construed in such a way is a vulnerable quality, which if violated, impacts upon the self-perception of individuals, and ultimately their sense of self-worth. A respect for this type of dignity is, however, already enshrined in most bioethics documents and thus is not a novel idea. On the other hand, as pointed out by Pinker, dignity so construed is synonymous with "treating people in the way that they wish to be treated" (2008), and thus may be equated with a respect for autonomy. Nevertheless, such an interpretation of dignity, as a means of ensuring the best possible outcomes for vulnerable individuals, will no doubt continue to play a pivotal role in bioethics. The last matter which must now be addressed concerns the moral status of transhumanism itself.

6.2 The Morality of Transhumanism

This thesis has focused upon an assessment of the way in which human dignity arguments have been utilised to either support or oppose the aims of transhumanism. The conclusion is that the concept of dignity is not a suitable means of assessing the moral status of transhumanism, nor is it capable of performing the role which is required of it in the bioethics arguments in which it is employed. The problems associated with the concept of dignity which have been explicated, result in it being used inconsistently or simply as a means of

supporting or opposing a particular agenda, generally one associated with a bioconservative approach. This conclusion does not, however, possess implications for the moral status of transhumanism itself. This matter is still unresolved.

Dignity arguments against transhumanism generally posit that by radically altering ourselves, we will no longer be human, and thus, we will threaten or eradicate some human quality which is valuable and is the source of our esteemed status. Such arguments however, imply that the correct attitude to assume, with regards to any changes that may be effected upon ourselves, is a passive rather than a proactive demeanour. Such arguments also imply that the processes of natural selection are more trustworthy than the possibility of a humanly guided evolution. However, this position is inconsistent due to the fact that certain biological changes which are associated with correcting or treating any 'malfunctions' in the human system, are endorsed in such arguments; whilst any transformations over and above this, are condemned. If one is to hold a truly consistent position regarding the wisdom of natural selection, one should not alter the human genome in any way. In this regard, dignity arguments which oppose transhumanism do not generally elucidate the moral status of transhumanist aims, but rather illustrate the irrational status quo biases held by those who formulate them.

Rather than attempting to use an indistinct notion such as dignity, it may be that the most effective means of examining the moral status of transhumanism lies in the use of immanent critique. This refers to the investigation of a practice or idea by utilising its own logic and aims, in order to establish inconsistences and contradictions. In the context of transhumanism, it would require evaluating whether the radical transformations in the stipulated areas will in fact improve the human condition, as well as whether the aspirations envisaged will accord with the expression of rationality and autonomy, which are held in great esteem by the movement. This will generally be the realm of arguments which present the clearest formulations and extrapolations of the consequences which may be associated with the realisation of transhumanist aims. There is a distinct need to engage with the aims of transhumanism, and thus, the requisite attention in this regard should not be deflected by the obfuscatory characteristics associated with dignity arguments.

7 Appendix – *Brave New World*: Contextual Information

Brave New World is a dystopic novel set roughly seven hundred years in the future. In this world, all individuals are bred in hatcheries, through a process known as Bokanovskification, to belong to one of five classes. The Alpha class as the elite leaders of the unified world state, represent the pinnacle of physical and intellectual abilities; whilst the Beta class occupy skilled professional positions such as doctors, scientists and engineers. The Gamma, Delta and Epsilon classes are the working classes, and are stratified in a downward progression, in terms of their capabilities. The Epsilon class at the bottom level of this hierarchy, are physically and intellectually stunted in vitro, in order to ensure the existence of individuals who are willing to perform the menial tasks required by societal functioning. The children of all classes are raised in group facilities due to the fact that families no longer exist. Childhood is characterised by a process of subliminal and overt conditioning, in order to ensure that each individual accepts and learns the requisite behaviours and duties associated with its class. Typical human emotions, desires and curiosity have been supressed by this process and monogamous relationships are non-existent. The primary means of relaxation and enjoyment in this world is afforded by the consumption of the drug Soma, and through engaging in free sexual encounters with others. Soma produces an effect of happiness, well-being and contentment, and ensures that problematic emotions are kept at bay. Whilst the world state is led by ten world controllers, the process of selective breeding ensures that the necessity to exert control or force is absent. The only opposition to the status quo lies in the reservations inhabited by ‘savages’. The inhabitants of these reservations are the product of procreation and natural childbirth, and live in accordance with the old human ways. One of the world controllers, Mustapha Mond, admits that this brave new world is characterised by an absence of autonomy and individuality; but views this as a worthwhile exchange for the stability now enjoyed.

8 Bibliography

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