Radical Life Extension,

A Consideration of Some Arguments:

Disastrous Enterprise, or Boon to Humanity?

by

Debra Kim Bradshaw

A Thesis submitted to the Faculty of Graduate Studies of

The University of Manitoba

in partial fulfilment of the requirements of the degree of

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ABSTRACT

Recent advances in molecular chemistry and genetics mean that the achievement of radical life extension – longer than the 80 years that is typical of average life expectancy in the developed world, and the 120 years that is considered to be nearing the absolute maximum length of time that a human being can live – seems increasingly likely. This is controversial, and there are outspoken, often emotional, advocates on both sides of the issue. This thesis is an attempt to assess some of the major arguments from both sides.

I conclude that short to moderate term increases in the human lifespan would be desirable because it would both promote self-realization for individuals, and confer a number of benefits on society. In the long term, however, the disadvantages associated with living longer, such as boredom, social stagnation, and overpopulation, seem likely to become overwhelming, making further increases less desirable.

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DEDICATION

This thesis is dedicated to the memory of my Grandmother,

Emma Cooper Jones (1894 -1975)

A light that burned out too soon.

and

Michael David Nickerson (1955 - 1994)

The light flickered, but continues to burn.

CHAPTER 1: INTRODUCTION.

1.0. Summary of the Chapter: In 1.1., I give a historical perspective of the desire for prolongevism, together with comments on the current situation, and why this thesis is significant. In 1.2., sub-sections i. to v. I outline some of the main philosophical positions concerning prolongevism. In 1.3., I introduce my position as discussed in this thesis. In 1.4., I give a brief summary of each of the succeeding chapters.

1.1. A historical perspective: Since the very beginning of recorded history, and drawing on even older narratives, there is written evidence that some human beings have desired to live longer lives than was typically possible. For example, clay tablets from Sumer, circa 3000 BC, relate the Epic of Gilgamesh, the story of humankind's failed attempts to evade death and live longer (Gruman, 1966). Those who subscribe to the position that living longer than is typically possible would be desirable have been labelled "prolongevists", which is a contraction of "prolonging longevity", and is defined as being in favour of "the significant extension of the length of life by human action" (Gruman, 1966, p. 6). More recently, writers such as Margaret Somerville have used the term 'radical life extension,' whereby 'radical' refers to life extension beyond the postulated human species maximum lifespan, which is believed to be about 120 years, and where the extension is brought about by human intervention (2006). I will use the two terms interchangeably. Other writers have been opposed to such attempts, using arguments from the impossibility, immorality and/or undesirability of prolonging life beyond the limit set out by God or Nature. Both historically, and in the present day, there are major philosophers and writers on both sides of the issue. For example,

Benjamin Franklin, William Godwin, the Marquis de Condorcet, Roger and Francis Bacon, Rene Descartes (Gruman, 1966), Julian Huxley (1964), Arthur Caplan (1995), Philip Kitcher (1996), Michael Rose (2005), Ray Kurzweil (2005), Gregory Stock (2002), Robert Naam (2005), Christine Overall (2003), and John Harris (2007) all favour the goal of prolongevism. Aristotle (1962), the Epicureans, Cicero, Marcus Aurelius, Thomas Malthus (Gruman, 1966), Daniel Callahan (1998), Carl Elliott (2003), Bill McKibbon (2003), Leon Kass (2004), Margaret Somerville (2006), and Francis Fukuyama (2002) are all opposed.

A number of civilizations through the course of history have embraced the belief that prolongevism, even immortality, was both possible and desirable, and devoted resources in attempts to bring it about, e.g. Taoist China from 350 BC onwards, for several centuries; European alchemists in the 13th and 14th Centuries, who sought the philosopher's stone, a means of achieving perpetual youth, but rather invented the discipline of chemistry; and European explorers in the early 16th Century, when numerous expeditions went to the New World for the express purpose of discovering the fountain of youth, only to discover Florida (Gruman, 1966). In the latter part of the 20th Century and into the 21st, the prolongevism debate has regained philosophical importance – and large amounts of scientific funding – as the mysteries of the structure and synthesis of DNA have been unravelled. For example, with the culmination of the Human Genome Project, there is now a complete record of every human gene, and considerable progress has been made in identifying their functions. Many reputable scientists now believe that radical life extension will be attainable in

the foreseeable future by means of using this knowledge, coupled with advanced microbiological techniques, in order to alter the metabolic pathways that contribute to ageing, which are known to be genetically mediated – it has been estimated that up to 7000 genes are involved in some way (Perls, Kunkel & Puca, 2002). It is beyond the scope of this thesis to research the specific scientific claims and counterclaims currently being made with regard to life extension, nor am I qualified to assess those claims. It is important to note, however, that credible exponents exist on both sides of the debate, and that considerable resources are now being devoted to pursuing an effective means of achieving radical life extension (Benecke, 2002; Fumento, 2003; Hall, 2003).

The argument often used in the past, to the effect that since prolongevism would be impossible to attain, the desire for it is a diversion and distraction from right living, has thus become less plausible, and therefore largely disregarded in the philosophical literature, although it may yet prove to be the case that radical life extension remains unattainable. Current arguments against prolongevism, therefore, may use consequential arguments stressing the likelihood, for example, of boredom (Williams, 1973), overpopulation, the probable lack of opportunities for youthful generations if elders live longer, and damaging changes to the institution of the family (Kass, 2003), or nonconsequential arguments from the sacredness and intrinsic value of human biology, due to its creation by god or the process of evolution, which ought not therefore to be changed by deliberate human actions (Kass, 2004; Somerville, 2006).

However, the latter tend to devolve into arguments concerning whether such human mediated changes would be too dangerous to undertake.

Those in favour of radical life extension, including myself, argue that, a) in principle the desire for, and the realization of, prolongevism, is legitimate, and b) the probable negative consequences would be, on balance, less than the likely positive consequences. This is coupled with a cautious optimism concerning the safety and use of powerful biotechnologies, and the belief that society would continue to adapt to inevitable changes, as it has done in the past.

Thomas Nagel has noted that part of the purview of philosophy is how to understand and actually live our mortal lives (1979). Laurie Zoloth states, further, that science is relevant to philosophy because it often 'sets the scene' for our philosophical deliberations – new scientific possibilities raise new, and urgent, ethical questions (2002, p. 66). In a deeper sense, science and technology may *cause* these ethical questions, because "technology drives science....[s]cience pushes medicine. And medicine pushes us all into making decisions we never thought of" (Wingerson, 1998, p. 46). Science and technology can come to function as an imperative, such that what can be done, will be done, even if this is potentially damaging, to individuals or society. With specific reference to radical life extension, Kass has asserted that we are "under strong obligation" to raise questions about and deliberate upon new genetic research "*before* the new technology is an accomplished fact, a technology whose consequences will probably dwarf those which resulted from the development of the atomic bomb" (1967; cited in Wingerson, p. 186). Rather than drifting into ethically questionable

activities due to the technological imperative, therefore, it is useful to engage in thought experiments prior to an anticipated event, and engage in a reasoned assessment of the advantages and disadvantages of a particular phenomenon. Thought experiments of this kind are important, in that they highlight and clarify what it is about human existence that is valuable, and the roles that our mortality, and the timing of our eventual death, play in our lives.

Politically, enhancement and the use of biotechnology are divisive issues in North America and Europe. Ronald Bailey (2005) has argued that "the war against biotech" and "biopolitics" will make the twenty-first century an ideological war zone between those who welcome and celebrate new technologies as improving the human condition, and those who would end this research (pp. 17-20). The latter group, whose views have been prevalent and politically influential so far in the early years of the 21st Century, have been memorably described by ethicist Arthur Caplan (2002) as:

> a bizarre alliance of anti-abortion religious zealots and technophobic neoconservatives along with a smattering of scientifically befuddled antibiotech progressives [using] pseudoscience, ideology, and plain fearmongering [to make the case against] manipulating our genes to try to cure diseases and live longer (pp. 30-31).

Those thus described include bioethicist Leon Kass, chairman of George W. Bush's President's Council on Bioethics, and William A. Rushner, a prominent religious conservative, who has stated that "the trumpet for the opening of the third and final battle of conservatism" has already sounded, and the battle commenced, between

science as conceived by modern secular humanists, and by Judaeo-Christian traditionalists. He is confident that the conservative "metaphysical dream of the world that has a central religious component", will triumph (1998, para 2). Similarly, transhumanism is an organized militant movement, that is ideologically charged, and embodies a mix of "a futuristic optimism, individual assertiveness and libertarian denial of limits that has become the hallmark of the current entrepreneurial culture" (Mauron, 2005, S69). As an antidote to these extremes, there needs to be a concerted philosophical effort, utilizing sound ethical reasoning, to assess the positive and negative potentialities of radical life extension. This thesis therefore comprises a philosophical thought experiment undertaken in advance of the possible development of scientific and medical techniques that would be able to extend the human lifespan beyond that which has hitherto been feasible, a prospect that many philosophers are now viewing seriously (Elliott, 2003; Kass, 2005).

1.2. Some philosophical positions: There are five broad philosophical positions, of varying degrees of cogency, concerning the use of biotechnology to change the nature of what it has hitherto meant to be human, including potential lifespan. They can be placed on a continuum, ranging from technophobia to technophilia, concerning the degree of technological control over elements of the human condition that is morally justified, including potential lifespan. They range from one extreme of relinquishing virtually all technology in order to forestall the otherwise inevitable use of biotechnology, which, it is argued, would destroy what it means to be human, to

retaining existing technology but prohibiting biotechnology, to developing and using biotechnology where the benefits would probably outweigh the costs and dangers, to the other extreme of using, simultaneously, a multitude of technologies in order to transcend biology and create posthuman – or transhuman – cyborgs . (I will use these terms interchangeably.) Horrobin's synthesis attempts to reconcile the moderate conservative and liberal positions, and make them 'coherent' in terms of their valuation of being alive, and hence of life extension (2006).

In the thesis as a whole, I will largely be considering arguments from the two central positions, each of which are more moderate forms of their associated extreme. In this section I will give both an explanation, and an abbreviated analysis of the shortcomings of, the two extreme positions and Horrobin's synthesis. These are unacceptable because they do not take into account probable significant negative consequences resulting from the realization of their particular goals in terms of life extension.

i. Anarcho-primitivism or extreme conservatism. This is also termed BioLuddism by its detractors (Bailey, 2005; Hughes, 2004). This position argues that modern technologies cannot be separated into ethical and unethical kinds, because they are part of a unified system "in which all parts are dependent on one another". It is argued that, therefore, it is inevitable that "genetic engineering will be used extensively... in ways consistent with the needs of the industrial technological system" The allegedly inevitable use of genetic engineering would rob human beings of their essential, biologically based humanness, by first manufacturing and then enslaving

them (Kaczynski, 1995, sections 121-124). Jacques Ellul (Wilkinson, trans. 1967) and John Zerzan (2002) also advocate that industrial civilization be abandoned, in order to prevent this development, with a return to a small world population living in peaceful, egalitarian, hunter-gatherer groups. This reflects the Marxist view that industrial technology, allied with capitalism, is oppressive, dehumanizing and alienating, and productive of social, gender, and health inequalities. Marx's solution, however, is different: changing the political system in order to enable more people to utilize the benefits of technology, and pursue self-realization (Elster, 1986).

Noam Chomsky has pointed out two deep flaws in this position. In order to achieve it, it would be necessary to engage in the "mass genocide of millions of people because of the way society is now structured and organised, urban life and so forth. If you eliminate these structures, everybody dies". He goes on to argue that, in fact, most people would not desire to live as hunter-gatherers, because "there are just too many things in life that the modern world offers us" (2008). Certainly, the current world population of over six billion, reliant as it is on massive industrial agriculture, fishing, and stock rearing, would not be able to survive by hunter-gathering. However, the United Nations predicts a radical dwindling of birth rates world-wide by 2050 (United Nations [UN], 2004), and this might eventually lead to a population size that would be able to be sustainable by such a means, in the very distant future, without genocide. Nonetheless, Chomsky is probably correct in his assertion that such a lifestyle would be undesirable, even though a hunter-gatherer lifestyle may have been superior in many ways to that experienced by the majority of the population under feudalism and the

early industrial revolution, and possibly even those in developing countries today, many of whom have been rendered landless and impoverished by globalization (Maddison, 2001). In terms of quality of life, recent research has shown that, surprisingly, early *Homo sapiens,* from about 40 to 10,000 years ago, had low birth rates, very little disease, particularly the contagious variety, and good nutritional status and general health. They even enjoyed a life expectancy similar to those found in modern developed societies, as well as large amounts of leisure time (Sale, 1985; Gowdy, 1998). Those experiencing the myriad distractions and stresses of modern urban life might even find the prospect attractive to some degree, as witness Thoreau's lyrical description of his experiment communing with nature and the simple life on Walden pond, while questioning some of the more dubious aspects of modern striving and consumerism (1965). However, Thoreau abandoned the experiment after two years, suggesting that he had come to view the experiment as tedious, even though he was able occasionally to leave the woods and take advantage of hot baths, palatable food, and access to books, courtesy of his friends and relations. Neither of these options would be available if the whole world returned to hunter-gathering and abandoned technology. As Chomsky notes, most people would not desire to exchange a world with, for example, media such as books, films, personal music players, and the Internet; rapid travel to most parts of the world; effective modern medicine; and abundantly available food, as a short list of the benefits of modern society enjoyed by billions of people, for a life that offered fewer, simpler, experiences and projects, and hence a restricted scope for self-realization, for far fewer people.

ii. Moderate conservatism. This is not a monolithic position, having both secular and theological versions. In both accounts, the biological human being, even without self-consciousness, rationality or autonomy, constitutes an intrinsically valuable person, due to the possession of a spirit or soul, which has been placed there by god, or the process of evolution. Human biology as it is currently instantiated, including DNA, and those features of life influenced by it, such as lifespan, are deemed to be sacred – or the 'sacred secular' if the intrinsic value of the process of evolution is argued for. These ought not, therefore, to be changed by deliberate human actions (Callahan, 1990; Campbell, 1990; Kass, 2004). The new biotechnologies are powerful, unpredictable, and therefore dangerous, as well as qualitatively different from previous technology because by changing the biological basis of personhood, they manufacture and commodify human beings, thereby damaging or destroying the human spirit or soul (Kass, 2003; 2001; 1998). For some conservatives, even apparently benign somatic gene therapy, designed to remedy a particular aspect of a genetic disease, ought not to be allowed, because a slippery slope would inevitably ensue, resulting in heritable germline engineering of fetuses for all manner of avowedly less compelling reasons, such as body type or intelligence. This would be a debasing commodification and manufacture of human beings, and as a result, the ability to live a meaningful life would be impacted. This would not be outweighed by postulated material or medical gains (McKibbon, 2003; Kass, 2001; Lewis, 1947).

Overtly theological forms may deny the need for a longer lifespan because the ultimate purpose of human life is believed to be for the soul to eventually become

immortal in an immaterial realm, after a life of struggle and suffering in the "Vale of Tears" (Genesis 3: 17-23, New International Version) that comprises life on earth (Callahan, 1990; Kass, 2004). Living longer, therefore, would simply defer the ultimate aim of life, to no good purpose, and the desire to do so, it is hypothesized, is a misperception of the true desire to be an immortal being forever in God's presence (Kass, 1985; Rose, 2005).

A finite trajectory to human life, or "life cycle traditionalism", is posited by both the religious and secular adherents of moderate conservatism: "The rhythm of the life cycle...[provides] a biological boundary to medical aspiration", and comprises a semi-circular arc, from birth, to flourishing and reproduction, followed by a decline and death, over a traditional span of between 70 and – rarely – 120 years (Callahan, 1994, May/June; Kass, 2003;). This finite and specific lifespan, whether it is god-given, or the result of the complex processes of evolution (in the secular version) also has intrinsic value, and therefore ought not to be changed. An emphasis on biology and a finite life trajectory is also evident in the conservative view of the good life, which involves submitting to the natural rhythms of life by procreating, rearing young, then dying to make room for the next generation, who will follow suit (Kass, 2005; 2001). Some moderate conservatives argue that changes to the status quo in terms of the human lifespan would be both unnecessary and undesirable, because human beings now have "enough" in terms of life expectancy. Most people, it is argued – in part due to modern scientific interventions – are now able to live desirable and fulfilling lives within the confines of existing life expectancy (Callahan, 1998; McKibbon, 2003).

This argument relies on the premise of human psychological development, and self-realization, as taking place within a fixed life trajectory that is identical to the natural biological lifespan. This means that if years were added they would not be of benefit because the biological lifespan would extend beyond the capacity to further develop human potential, resulting in extreme boredom, and eventual meaninglessness (McKibbon, 2003; Williams, 1973). Both forms also stress respect for tradition, and the "collective voice" (Somerville, 2006) when it comes to decision making and deciding on ethical principles. Conservative virtues, therefore, tend to be passive, stressing obedience, fortitude and patience, rather than taking charge of one's life and experiences to further one's own desires.

iii. Moderate prolongevism. This is based in liberal individualism, and the belief that living longer than is currently possible might conceivably be a boon to humanity, with the benefits outweighing the inevitable costs. It has been termed "progressive incrementalism", in that it "cultivates small, incremental steps in the short run" in order to increase both average life expectancy and eventually lifespan itself, preferably with a concomitant compression of morbidity (Callahan, 1994, May/June, p. 3). For this position, the most important considerations concerning potential technologies, after feasibility, are prudence and equitable distribution (Callahan, 1994, May/June).

The value of personhood may be based in human biology, but does not require a particular formulation of genes, which means that some characteristics typically associated with the human species, such as a maximum lifespan of around 120 years, or

levels of intelligence or endurance, can justifiably be changed if it improves the lot of the person, and does not detract from the exercise of personhood. The intrinsic value of persons inheres in the psychological capacities of self-consciousness, rationality, and autonomy, which are superordinate to the biological substrate of humanness. Each of these components builds upon its precedent, so that the crowning element of personhood is considered to be autonomy, which is defined as "self-rule", or a lack of coercion of the individual by society, which allows a person to act upon the desire to develop self-chosen powers and abilities (Elster, 1986, p. 43). An autonomous person may choose to relinquish life itself if they so desire, despite the fact that a person is intrinsically valuable, because the value of being alive is not an intrinsic or absolute good, but is somewhat dependent on circumstances, and therefore instrumentally valuable to the degree that it allows for the pursuit of self-realization. Circumstances may be such that, despite being alive, a significant proportion of, or perhaps all, of the goods of life – e.g. health, sustenance, love and friendship – are and will realistically continue to be, unavailable or inaccessible, which means that it might be both rational and morally permissible for a person to decide that they do not wish to live any longer, and to engage in suicide or request euthanasia.

Self direction is the goal of the person, promoted by both personal autonomy, which allows the individual freely to choose and act upon their own choices and preferences, and the political freedom that protects autonomy, probably in the form of a system of rights. It is usually acknowledged that these rights may be overridden if there is clear and significant danger to society, but otherwise the individual, together

with their desires and preferences, is paramount (Beauchamp & Childress, 2001). This means that, to a large extent, the choice to live longer is one to be made by the individual, unless there is a strong case to be made that this would be dangerous to society as a whole.

iv. Horrobin's synthesis. He attempts to merge the conservative and liberal individualist views of where intrinsic value lies, and in what personhood inheres, thereby making both positions coherent with regard to the value of continuing life. He observes that the conservative position in particular contradicts itself, in that it is opposed to abortion – i.e. "pro life" – yet opposed to extending life beyond natural limits. The liberal individualist position, he claims, reverses this, in that it generally supports the choice of abortion – i.e. it is "pro choice" (or "pro-death", to be consistent) – yet is in favour of life extension. He argues that self-conscious, rational, autonomous persons are the locus of value, but defines personhood as a process, that is indivisible from future-oriented valuing and planning. Human beings who are not self-conscious and rational, therefore, are not persons, contrary to conservative beliefs. The two elements of personhood and future planning combined, constitute the value of living, which is therefore both an instrumental and an intrinsic value. This process has necessary and fundamental forward-looking components which make being a person essentially open-ended. He concludes that, for persons, life extension is therefore a value without limitation, which means abortion, suicide, and euthanasia are morally impermissible, while life extension is morally required (Horrobin, 2006).

His argument that, since intrinsically valuable persons are necessarily and inextricably combined with the process of future-directed valuing activities, continuing life is an *unlimited* value for persons, and cannot therefore voluntarily be abrogated, is not convincing. A longer life would not be valuable primarily because persons are *essentially* future-oriented, any more than they are essentially past-oriented, but because it would offer more opportunities to live in the present. This is where self-realizing activities take place, and a person may legitimately choose to dispense with their future, if the process of self-realization has been brought to a desired degree of completion, or if the likelihood of continued living may realistically be perceived as being permanently intolerable, to that person.

His argument that losing the future-directed elements of ourselves would result in a state of being a non-person is puzzling. Surely, absent a profound loss of self-consciousness, rationality, or autonomy, personhood is an attribute right up until death supervenes, even if that person has chosen to eschew future events and commit suicide.

Horrobin's attempted synthesis is unlikely to be acceptable by either position, since it denies central tenets held by each that concern the nature of personhood, and contains within it some serious problems, not least that it would promote overpopulation, since his conclusion implies unlimited, mandatory, life extension.

v. Trans- or post-humanism. This is also termed liberation biology by its proponents. This position is eager and extremely optimistic about the desirability of harnessing the power of biotechnology in order to conquer nature, and thus "liberate" human beings from all biological constraints. Evolution via biotechnology, and

mediated by human beings, is seen as a continuation of and replacement for biological evolution, and as such, a desirable goal for science. The mind is viewed as the most important component of personhood, with a biological body being almost irrelevant: it could, in some versions, be replaced by a computer or machine. In this view, no current human characteristic, including lifespan, ought to be immutable, and extreme body modifications, utilizing genetic and nano-technology, are advocated. This would result in the creation of a wide variety of cyborgs, each of whom would be a person rather than a human being. Anything, under this schema, is allowable, including radical enhancement of every human attribute, which may require merging with machines or computers, the use of nanotechnology and robotics, and attempts to be immortal (Bailey, 2005; Hughes, 2004; Kurzweil, 2005).

If moderate enhancement for particular characteristics, including lifespan, is accepted as legitimate, then further, more radical modifications of this type might be difficult to argue against (Parens, 1998, Jan/Feb.). However, there are some problems with the post-human position, particularly in terms of lifespan, that are not apparent for moderate prolongevism. One of the goals of trans-humanism is functional immortality, and this would potentially exacerbate the social problems that a more modest life extension would probably set in motion – overpopulation, an increase in the inequalities between rich and poor, lack of opportunities for the advancement of youth, and social stagnation, for example. These problems might potentially be overcome by the colonization of other planets, since potential immortals would presumably be able to endure the long journeys between stars with a degree of equanimity impossible for

shorter lived beings, in the event that the requisite technology has been developed to do this.

Bringing about immortality by downloading brain patterns onto a computer, to be re-uploaded into a new genetically identical body specifically created for the purpose in the event of accidental death, as has been proposed as a theoretical possibility (Clark, 2003; Kurzweil, 2005), presents a deeply flawed scenario. The stored patterns would not constitute the continuing consciousness of the original person, since they would be merely a *copy* of physical brain patterns, not their mind itself. This would result in an identical copy of the original person, who might even believe themselves to be the original person, and live as if they were, but not the continuing consciousness of the original person in a new body. As Williams notes of reincarnation scenarios generally, they consist in a series of psychologically disjoint lives that would not necessarily "be an object of hope to one who did not want to die", because it would not "clearly be *me* who lives for ever" (1973, pp. 91-2). This also raises chilling questions about the morality of imposing a false consciousness and pirated identity onto the replacement, something which would seem to deny individual autonomy and personhood.

1.3. My position. This is rooted in the tenets of liberal individualism, and is in favour of individuals being able to choose to undergo a moderate degree of prolongevism in order to achieve a greater degree of self-realization. I argue that moderate conservatism in particular does not adequately recognize the true significance of the

human relationship to technology, the flexibility and breadth of the nature of personhood, or the requirement for a significant degree of autonomy in order to lead a flourishing life. I have chosen to discuss life extension because this is arguably the most important of all possible enhancements, since "it is a necessary condition for the many desires in life" (Y Gasset, 1989, p. 291).

I argue that it would be desirable for individuals to augment both average life expectancy, or the number of years to which a person born at a particular place and time can expect to live, which is currently at about 80 years in developed nations, and also the extreme limit of the human lifespan beyond the typical species maximum of about 120 years (Benecke, 2002), via deliberate technological interventions, to the extent that this is able to be achieved safely and effectively. Living longer would potentially allow the pursuit of a greater degree of self-realization than is now possible. Research into this possibility ought not therefore to be severely restricted or banned.

Technological interventions resulting in changes to species characteristics would not be unprecedented, although in the past such changes were unwitting and random. Future changes could be both a deliberate individual choice, and targeted towards specific characteristics, such as lifespan. The decision to live longer ought to be under the autonomous control of the individual, and would, at least initially, be an extension of existing patient autonomy. It should require having to consciously take a pill, or undergo biotechnological enhancements, on one's own or children's account, rather than being something which routinely happens to everyone, such as fluoride being added to the water supply. However, should it eventually be the case that

prolongevism is regarded as being desirable for most people, as is arguably the case with the fluoridation of the water supply, then it may come about in the future that the means are routinely dispensed in this manner.

How much more would be desirable in terms of added years of life is difficult to assess, but an ordinary person with typical talents, many of which may not be able to be realized in an existing lifetime, might be happy to live many years longer than is currently possible in order to do so, while someone with many gifts might not reach a desired degree of self-realization until a considerably longer period of time has elapsed. An increase in potential lifespan, perhaps far beyond the current maximum, might therefore necessitate the general social acceptance of suicide of one form or another – perhaps encompassing physician assisted suicide, or voluntary euthanasia – as a rational and legitimate choice for an autonomous individual who had reached the limit of their desired self-realization, and desire to live itself, but without necessarily being close to the release of biologically mediated, "natural" death. This means that my position does not regard being alive as being of unlimited and certain benefit for all people in all possible circumstances, but rather as an instrumental good. It does require, therefore, a greater degree of personal control over both the desired length of life, and time of death, than is currently typically the case.

A large increase in life expectancy and lifespan on a worldwide scale would undeniably have social and institutional repercussions, some of which may be negative, as is argued by critics of radical life extension (Binstock, Fishman & Johnson, 2006; Cranor, 1994; Hackler, 2001; Kass, 2003; Parens, 1998, Jan/Feb.). However, while it may eventually become possible to achieve a dramatic increase in lifespan, I will

assume that the difficulty of perfecting the required technologies, and the length of time required before a significant portion of the world's population is able to avail themselves of the technologies, means that prolongevism, if it occurs, will do so relatively slowly. This means that the expectations of individuals, societies, and institutions would have time to adapt to the changes which would inevitably be required. Considerations of space preclude my addressing these issues in depth, but my overall view is that society would largely be able to accommodate its institutions and expectations to accommodate *moderate* prolongevism, as it has tended to do in the past. For example over the course of the 19th Century, average life expectancy grew from 47 years to about 80 years in advanced industrial democracies (Center for Disease Control [CDC], 2008). This has generally been regarded as a boon, because it has allowed for an expansion in self-realizing activity for many, despite the associated problems of overpopulation, increased competition in the workplace, and the cost of funding increasingly extended periods of retirement. Very large increases *pace* the functional immortality desired by transhumanists would, however, likely lead to insurmountable social problems.

The main social problems concerned with prolongevism, are concerned with prudence and distributive justice. Some biotechnologies might be too dangerous to use, and, even if they prove to be safe, they might not be available to all those who desire it, due to scarcity or expense. This would potentially result in even greater disparities between rich and poor, developed and undeveloped countries. In an extreme case, it could even result in the creation of two different species, as in Silver's scenario of the

mutually exclusive "genrich" and "genpoor" social groups (Silver, 1998).

1.4. Summary of the chapters.

Chapter 2: I will argue that the option of living longer would allow individuals who choose it to undergo a greater degree of self-realization. I will defend the need for a considerable degree of autonomy in order to pursue self-realization against the conservative argument from heteronomy. While purely untrammeled individual freedom, as demanded by transhumanists, is not feasible if society is to flourish, a heteronomous approach is too restrictive for full human flourishing. I discuss the argument from boredom, which states that extreme or terminal boredom would be a fate worse than death, and that it would supervene fairly rapidly if the human lifespan were to be significantly lengthened. I agree that excessive boredom would render a life unlivable, because it would not allow for the activities of self-realization to take place. Since some basic experiences pertaining to survival seem to be infinitely repeatable while remaining pleasurable, and new experiences, some of which are mediated through technological innovations, are continually proliferating, there would seem to be scope for a considerable extension in time in order to access them before boredom supervened, if it did so. The pursuit of self-realization is, furthermore, a life choice that would seem to be less subject to boredom than other life choices such as hedonism or consumerism. Additionally, the perception of the passage of time also speeds up with age, so it is possible that those who are older suffer less from boredom than do the young. Finally, social, economic, and gender factors may play a role in limiting access to desired experiences, which would promote boredom. All of these factors would tend

to increase the amount of time necessary before satiation and boredom occurred, possibly to a very significant degree, particularly in the case of those who are pursuing self-realization as a life course.

Chapter 3: women, in particular, might benefit from longer lives because of systemic factors associated with bearing and raising children in a given time frame relating to fertility, resulting in major economic, career, opportunity and self-realization gaps in comparison to men. Living longer, in good health, would potentially allow women to close both the economic and self-realization gaps, which could lead to more women in positions of social and political power.

Chapter 4: the "playing god" argument is not persuasive, since human DNA is biological, not mystical, material and cannot therefore be regarded as sacrosanct. Nor is it possible to make an inherent distinction between the use of traditional technology and biotechnology on the one hand, and therapeutic and enhancement techniques on the other, such that one is morally required and the other is morally prohibited. Further, an extension of human powers through the use of biotechnology would not constitute an illegitimate "power over" subsequent generations, since this influence is part of what it is to be human, and was, through the use of technology, decisive in bringing about the very existence of *homo sapiens.* Any action, including no action, may influence the condition of future generations, and the morally required action is to do this, as far as possible, so as to improve that condition. The arguments from evolution are flawed because This leaves the argument from prudence, and I conclude that, while caution is necessary when developing new techniques that have the great power and scope that biotechnology promises, and may require a regard for the precautionary principle, it

would be reasonable to proceed, paying due care and attention to each specific case of proposed enhancement as it arises.

Chapter 5: The argument is made that the professed desire of a majority of North American women to live longer lives than is currently possible, while Japanese women do not reportedly feel the same desire, is evidence of pathology in the case of the former. I conclude that, rather, there are probable cultural influences on the Japanese women's responses, for example, Buddhism, the social emphasis on performing one's duty rather than engaging in self-realization, and a reportedly lower degree of happiness for the Japanese in comparison to other developed countries, for various reasons. This means that living longer may neither be perceived as, nor actually be, desirable. Conversely, the desire to live longer is not necessarily the product of a fear of ageing. Many North Americans may desire to live longer because it would allow them to engage in the highly desirable, and socially sanctioned, activity of self-realization, to a greater degree. The increased potential for this activity may itself be one of the reasons underlying the greater level of reported happiness in North American society in comparison to Japan.

Chapter 6: I conclude that giving people the opportunity to choose an increased lifespan beyond what is currently possible, would be morally legitimate. In the short to medium term, the advantages to both individuals and society would be great, and the disadvantages likely to be manageable. In the long term, however, it seems that the negative aspects of prolongevism, such as boredom, social stagnation and overpopulation, would be exacerbated, and might eventually become so overwhelming that living longer would cease to be a benefit.

CHAPTER 2: THE CASE FOR RADICAL LIFE EXTENSION.

2.0. **Summary of the Chapter.** In section 2.1., I outline the position that a longer life might be a better life in order to enjoy more of the experiences that come to an end when death supervenes. In section 2.2., I discuss what kind of life would benefit from prolongation, and conclude that it would be a self-realizing one. In section 2.3., I discuss the conservative objection that individualism, and the process of self-realization are not good ways to achieve happiness and fulfillment, while abiding by the traditional collective wisdom of the group protects society and individuals from dangerous choices and lifestyles. I conclude that the loss of autonomy leads to lower levels of happiness, and to the potential for oppression. If denied the degree of autonomy required for a self-realizing life, a longer life might not be desired or desirable. In section 2.4., I discuss the objection that living significantly longer would result in terminal boredom, and that this would be render further living intolerable, due to the finite nature of the pleasure to be derived from experiences. In section 2.4.i., I agree that terminal boredom would render life insupportable, because this could not allow for self-realizing activity. In section 2.4. ii., I defend the objection that boredom would, however, take considerably longer to supervene than is argued. In 2.4. iii., I argue that the life paths of hedonism and consumerism would be more prone to boredom than would a life spent pursuing self-realization. In 2.4. iv., I assess a counterargument that there is only a limited window in life in which to enjoy new experiences, and that living on much beyond this window, therefore, would be boring. I go on to defend the response that this argument is not empirically grounded in fact. In 2.4.v., I discuss how social and economic factors affect the degree to which individuals may become bored. In 2.4.vi.,

I argue that the changing perception of the speed at which time passes might mean that older people are less likely to be bored. In 2.5., I conclude that, while boredom would likely eventually supervene if one lived long enough, in most cases it would take considerably longer to do so than is argued, and longest of all if an individual is pursuing self-realization.

2.1. **Why a longer life might be a better life:** While some societies have celebrated death, this is usually where there is a high confidence of the immortality of the soul, and the existence of an afterlife. For the rest, death is universally regarded as an evil (Becker, 1997; Fukuyama, 2002) — yet the state of being dead, as Nagel has argued, is nothing to fear since there will be no person there – no "us" – to experience it: "death is not an unimaginable condition of the persisting person, but a mere blank.... it can have no value whatever, positive or negative" (1979, p. 9). The state of being dead, therefore, cannot be an evil in the sense that it is unpleasant or painful. Lucretius makes the same argument, stating that if our body disintegrates into its constitutive atoms, and there is no soul, then death is oblivion, a total lack of perception, that it would be irrational to fear (Leonard, trans. 1921/2004). Such oblivion might even be regarded as desirable by some – Freud's first remark upon returning to consciousness after a fainting spell, was "how sweet it must be to die" (Sulzberger, 1961, p. 35), perhaps because he found the absence of all sensation quite restful. This state has to be reached, however, through undergoing the process of dying, which might quite realistically be anticipated as painful, despite modern techniques of pain relief. Nonetheless, Nagel stated that he "would not object to dying if it were not followed by

death" (1979, p. 3, footnote # 1). Dying, followed by periods of temporary nonexistence, then resuscitation, and a continuation of living, as Benjamin Franklin wished were possible (Gruman, 1966), might even be desirable:

> we do not object to death merely because it involves long periods of nonexistence....If it ever happens that people can be frozen without reduction of the conscious lifespan, it will be inappropriate to pity those who are temporarily out of circulation. (Nagel, 1979, p. 3)

If this could be achieved, then the periods of nonexistence would arguably not be a great misfortune, and dying, however painful, might be regarded as one of the necessary pains of existence, as is birth itself, which nonetheless generally has a positive outcome.

If neither the process of dying, nor the state of being dead, are the root cause of the general opinion that death is an evil, why then the anger, encompassing 'rage, envy, and resentment', that is cited as one of the typical earlier stages of dying? Kubler-Ross, who has argued that this anger has to be transformed into acceptance, in order for death to be a peaceful experience, nonetheless saw anger as a logical response because the imminence of death meant that " all of our life activities" were "interrupted so prematurely", and "all the buildings we started [will] go unfinished, to be completed by someone else" (1969, pp. 50-51). For example, three members from two generations of the same family are credited with building the Brooklyn Bridge in New York. John A. Roebling was the original designer, and was appointed chief engineer for its construction, but died in 1867, at the age of 63, before work was barely underway. His son, Washington, took over the position, and while initially in good health, he had to

supervise the last several years of construction before its opening in 1883 from his sick-bed. He watched the site through an overlooking window, and relayed instructions through his wife Emily (McCullough, 1983). Alternatively, some life projects may be completed, but without there being time to enjoy their benefits. In *The Makropoulis Incident,* a character despairs over the fact that, due to the shortness of life, a man "can't even harvest the fruit from the tree he plants" (Capek, 1925, p. 168). This can be taken as a factual statement – a slow growing, long lived tree such as an oak will not reach its full height, or fruitfulness, in a typical human lifespan – or as a metaphor for not being able to benefit from the fruits of one's life's labours, due to its shortness. For example, most of the industrial workers who organized themselves into trades unions in the 19th century, and who fought a long and often, literally, bloody, battle for benefits such as the 8-hour day, the 5-day week, workers' injury compensation, paid holidays, and old age pensions, would not have lived long enough, given average life expectancy at that time, to enjoy those benefits once they were won (Clarke & Clements, 1978).

This leads to the conclusion that death is regarded as an evil because it results in a *permanent* deprivation of being alive, and hence of life's constitutive experiences. There is an opportunity cost associated with death: the many desirable aspects of being alive that we would have been able to engage in and enjoy had we not died at a particular point. Living longer, therefore, would potentially benefit people because they could enjoy more of these experiences.

2.2. **What kind of life would benefit from being longer?** Overall (2003) borrows Shakespeare's metaphor of life as a play to argue that living longer than is currently feasible might add to the quality and value of life, and that, potentially, "the calibre of the actors' performances" might be improved:

> the excellence of our lives is of enormous personal, ethical, and social importance...the length of the play in which each of us finds ourselves does matter, and... its duration can make a significant difference to the quality and value of our lives. (p. 22)

I will argue that this would potentially be the case, if the life that is pursued is one of self-realization, because this process would be able to be developed to a higher degree than is presently possible, given a longer life. Self-realizing activities require "conscious creative work", that is valuable because it "involves personal development or progress" (Heyd, 1983, pp. 31-2). If self-realizing activity is rejected in favour of other kinds of life, for example hedonism and consumerism, then, I will argue, living substantially longer might not be desired by or desirable for an individual, since boredom is more likely; nonetheless, some increase in years might be desired by the individual concerned in order to enjoy hedonistic experiences, which are also capable of some degree of prolongation, though not to the extent as do those of self-realization.

Self-realization is a Marxist concept, having as its goal both the development and externalization of the talents and capacities with which individuals may be endowed. The lack of self-realization, for Marx, was a component in alienation, or the lack of a sense of meaning (Elster, 1986). It shares elements with other theories of well-being and flourishing that are concerned with the best way to live, such as

Nietzsche's concept of the Superman (Tille, trans. 1933), Aristotle's theory of *eudaimonia* (Ostwald, trans., 1962), Maslow's theory of self-actualization (1954), and Heidegger's theory of authenticity (Mcquarrie & Robinson, trans. 1962). In particular, the common thread is the concern to pursue "higher" activities beyond mere survival, and simple pleasurable experiences in general, that do not develop a person's capacities (Elster, 1986). While Marx seemed to view self-realization as an objective good, regardless of whether a particular individual desires it, I will be arguing for a subjective, utilitarian, valuation, since the autonomously chosen activities of self-realization are a major source of self-esteem, and ultimately a higher degree of happiness, than most other possible life courses. They also have increasing rather than decreasing marginal utility, and are generally less expensive than, for example, consumerism (Elster, 1986). Marx argued for the achievement of full and complete self-realization, given sufficient opportunities to do so (Elster, 1986), but it is unclear if this could ever happen. There might always, objectively, be an added improvement to one's brush-stroke technique, or an added insight into the nature of the universe, that could be made, but which an individual declines to pursue. For this reason, it would seem better to argue for an individual's desired level of, rather than complete, self-realization.

Some self-realizing activities may be easily achievable, while others might be difficult and demanding, which means that they are less likely to be able to be combined with additional self-realizing activities, for example, both raising children, and achieving a significant degree of success, wealth, and power, in a career. This means that over a typical lifetime it is only possible to develop a relatively small

number of capacities in comparison to the totality of potential talents with which an average person may be endowed, and which are therefore never brought into realization. With a longer life, potentially, more desired, self-realizing activities could be engaged in.

How much more would be desirable in terms of added years of life is difficult to assess, but Huxley asserts that even an "ordinary" person potentially has many undeveloped "latent capacities" for "understanding and enjoyment"; while those in the most fortunate circumstances are possibly living far below their capacity, only developing "a small fraction of their potential." The human race "is surrounded by a large area of unrealized possibilities, a challenge to the spirit of exploration" (1964, pp. 13-17). Many years of extra life might be required to realize this potential, and the latent capacities of one such as Michelangelo or Einstein may not reach a desired level of self-realization for a considerably longer period of time.

2.3. **Heteronomous versus autonomous rule.** Self-realization requires a good deal of personal autonomy. As Elster explains, the "self" is necessarily an essential component of self-realization, being, firstly, endowed with specific talents and capacities, and secondly, with a desire to develop particular talents, rather than others. The underlying motivation for a person choosing to undergo the process of self-realization "derives from this peculiarly intimate relation". Self-realization, therefore, is "not compatible with society's coercing people to develop socially valuable talents at the expense of those they want to develop" (1986, p. 43). While it would be somewhat unrealistic, in terms of generally finite material resources, to argue that a society must guarantee a

right to self-realization, it does need to embrace the "notion of freedom as lack of coercion" and also encourage this as a worthwhile life choice (Elster, 1986, pp. 43-4).

The conservative position, however, argues that rule by others, or heteronomy, rather than self-rule, results in a better, happier, life. Kass and Callahan argue that individuals naturally look beyond themselves for fulfillment, to the community, and through procreation, to the next generation. Individualism, and the process of self-realization, are not, therefore, good ways to achieve happiness and fulfillment (Callahan, 1994; Kass, 1985). Abiding by the traditional collective wisdom of the group protects society and individuals from dangerous choices and lifestyles. This may involve, in religiously oriented societies, an acceptance that "divine intent rules society", and that government needs to be helped, where possible, "with insights mysteriously received from sources not under strict human command" (Rushner, 1998, paras 6; 9). Both of these quotes were derived from the US conservative Christian right, but Somerville also argues that a guide for important decisions – and a source of the mysterious "insights" – might be the Jungian collective unconscious, although she declines to explain exactly how this might operate, or agreement be reached (Somerville, 2006).

An implied lack of rationality on the part of most human beings also means that individuals in general need guidance, even coercion, from society. Otherwise, the fulfillment of their choices and preferences might be imprudent for them, and worse, damaging to society as a whole. Elliott argued that the average person would merely keep making different types of mistakes in their search for happiness, without

necessarily finding it (2003). The individual is not, therefore, necessarily the best person to plan their own lives.

While it is true that a society with a high level of power over individual choices might encourage the development of an Einstein or a Michelangelo, they conceivably might not. The collective wisdom of the community might have set opinions on the suitability of particular occupational roles for a given caste, religion, skin colour, sexual orientation or gender, as has been the case throughout much of recorded history, and even to this day in many places (Bohmer & Briggs, 1991; Di Leonardo, 1991). Without some degree of respect for autonomy, persons are also in danger of being used as a means to an end by other, more powerful, entities, whether these be persons or states (Hughes, 2004; Kuflik, 1984; Mill, 1999). Political liberty is necessary, therefore, for the exercise of autonomy: "we cherish political freedom because it allows us freedom of personal self-determination, not the other way round" (Britten, 1998).

Being oppressed typically results in sensations of anguish, injustice, powerlessness and indignity. These are often manifested as stress, which is a contributory factor to depression, ill health and early death (Anderson, N. B. & P. E., 2003). Individuals in the main ought not, therefore, to be restricted in living their own lives unless there is clear evidence that this is necessary in order to prevent a significant degree of harm to others, including society (Mill, 1999). This includes damaging others' prospects for autonomy, by, for example, injuring or enslaving them, or the *realistic* likelihood that society itself might be severely damaged or destroyed by an individual's choices, rather than merely being changed or altered in ways that are

viewed with displeasure by, rather than being seriously harmful to, given social groups within it.

It is the case that it is, overall, necessary to balance individual desires against social welfare, because in some cases individual choices could considerably endanger society itself. (The demise of society would also, eventually, lead to the demise of many opportunities for self-realization for individuals.) Society may also legitimately influence the development of particular talents by rewarding them, and holding them in high esteem. For example, medical doctors, who pursue socially valuable careers, tend to enjoy high social esteem, which would probably translate into high self-esteem. However, if a person were to be pushed by social expectations, either against their will, or by presenting them with limited options that do not reflect the scope of their potential talents, into pursuing medicine when they have no particular aptitude for it, or even, while having the necessary capacity, at the expense of realizing other, more highly desired capacities, then the concomitant lack of motivation would probably mean that there is a strong likelihood that they will be both unhappy, and an inferior doctor.

The possession of autonomy is, therefore, an essential factor in individual dignity, health and general well-being. People are generally happiest when exercising a degree of rational control over the natural and social forces that affect their lives (Nettle, 2005). This may explain why Japan, a society that exemplifies the principle of heteronomy, and putting the well-being of the community before one's own desires, also has both the lowest levels of recorded life satisfaction, and the highest suicide rates, in the developed world (Organization for Economic Cooperation and

Development [OECD], 2006). It is also the case that part of individual self-realization for a particular person may include raising a family, working in the community, or other socially useful activities (Heyd, 1983; Gillick, 2006). The pursuit of self-realization is not necessarily, therefore, the antithesis of involvement with and contribution to the community, to be equated with narcissism and self-absorption, as the conservative position alleges.

The liberal assumption is that the majority of adults have an adequate capacity for understanding and reason, and hence for self-governance, unless this is shown to be otherwise. While individuals might make unwise choices if given too much freedom, as Elliott (2003) argues is often the case in the US culture, a longer life would potentially allow a person to learn from and correct mistakes to some degree, in their pursuit of a rewarding life.

If personal autonomy is unnecessarily denied, so is the ability to live one's own life, in pursuit of self-realization. A longer life might not be particularly desirable or rewarding for those committed to the ideal of self-realization, if individuals were denied other than traditional, group sanctioned, activities. Conversely, a longer life might be *more* desirable given circumstances that promote individual self-realization, and which also give opportunities for achieving a moderate level of affluence and security from subsistence worries, as well as fostering a level of health and strength that allows for engagement with life – these are given as social goals in the Charter of Fundamental Rights of the European Union, for example (European Union Publication Office [EUPD], 2000; De Burca, 2001).

Both the cultural permission for the exercise of autonomy over one's life, and the existence of a basic degree of freedom from economic want, seem to be necessary for prolongevism to be desirable. For example, in Japan, a variety of social and economic policies have contributed to both the shallowest income gradient between rich and poor, and the longest life expectancy, in the developed world. Japanese cultural mores, however, do not promote autonomy, or self-realization (Heine, Kitayama & Lehman, 2001; Lebra, 2000). This could be a factor in why prolongevism is less desirable overall to the Japanese than to North Americans, who have a less egalitarian society, and hence a steeper income gradient with higher levels of poverty, and a lower average life expectancy, but a cultural ideal of individualism and self-realization (OECD, 2006; Wilkinson, 2001).

2.4. **Terminal boredom as a consequence of living longer.** This argument was initially made by the Epicureans (Gruman, 1966), and more recently by Williams (1973). It is argued that human beings are only able to have a given amount of pleasure from life experiences, whether their lives comprise 50 or 500 years, which means that even before the end of a typical lifespan, an ordinary person would be unable to enjoy or desire further experiences, which would result in terminal boredom, which would in turn render further existence meaningless. The argument is predicated on three assumptions. First, Lucretius argued that it would not avail humanity if the desire to defer death was achieved, because the number of pleasures it is possible to have is limited:

> There is nothing further [Nature] can devise and discover for your pleasure: all things are always the same... even if in length of life you should outlast all generations, or indeed even if your should be destined never to die... our environment is always the same, and no new pleasure is procured by the prolongation of life. (Leonard, trans. 1921/2004, 3.944-950; 1080-1)

Second, Marcus Aurelius argued that there was only a specific amount of good or pleasure to be gained from this finite number of particular life experiences (Gruman, 1966). Taken together, these objections cause Williams to suspect that there would, therefore, be:

> a profound difficulty of providing any model of an unending, supposedly satisfying, state or activity which would not rightly prove boring to anyone who remained conscious of himself....boredom would be not just a tiresome effect, but a reaction almost perceptual in character to the poverty of one's relation to the environment. (1973, pp. 83-4; 86)

The third assumption is that extreme, or terminal, boredom would render a life meaningless. Williams (1973) concluded that boredom would be both an inevitable, and insupportable, consequence of being immortal, or even of living much beyond what is currently possible.

Boredom is defined as an experience in which " mental activity has been suspended, and experience remains meaningless. This is a barren area of lack...an expression of despair...emptiness and desolation" (Bergstein, 1990). When actively bored, a person perceives the passage of time as being very slow, with the reverse also being the case – when engaged in absorbing tasks, the brain ceases to register activity

in the area that is dedicated to an awareness of the passage of time (Flaherty, 2000; Gomes, 1998). This slowing down of the passage of time is a feature that tends to exacerbate the tedious nature of the experience of boredom – not only is it unpleasant, it seems to last a long time, while pleasant experiences speed quickly by.

Lucretius describes an unfortunate afflicted with boredom as bearing "a heavy load" that causes "a mass of misery" (Leonard, trans. 1921/2004, 3.1053-1071). Capek makes the same point in the fictional story of EM., a woman who has been living for 342 years. She has become absolutely bored and indifferent towards all experiences, and finds everything to be joyless:

> everything is so dull, empty and ordinary....One ought not, ought not, ought not to live so long!...one's soul dies...one cannot love for three hundred years. It does not last. Everything is irksome. It is tiresome to be bad and tiresome to be good. Heaven and earth tire one. (1925, pp. 91-3)

Williams summarizes "EM's problem" as consisting in the fact that she had been alive too long, and that while some experience of boredom is inevitable to some degree in any life, it is not enough, he argues, to have a desire merely to remain alive in the face of it when it has become terminal, with no possibility of remediation. It is the presence of categorical desires for the *praemia vitae* of life that underlie the value of living a longer life. With the loss of these desires a person would suffer inner death, as did EM, who became "frozen", and was therefore unable to have any more desires. This kind of life would be "inadequate" , and hence a longer life under these circumstances would not be of benefit to the person living it (1973, p. 95).

i. **Would boredom be intolerable?** Being in a state of extreme boredom is very unpleasant, as Lucretius notes, and may call for "pathological and morbid" expedients, as was the case for Sir Arthur Conan Doyle's fictitious detective, Sherlock Holmes. In response to "the dull routine of existence," he injected a "7 percent solution of cocaine" with "nervous fingers" when he had no recondite cases to solve. Yet Holmes was not yet in a state of terminal boredom, because he had categorical desires that Williams argued allowed him to "drive through both the existence and the prospect of unpleasant times" including the experience of boredom (1973, p. 100). He implored fate to "give me problems, give me work, give me the most abstruse cryptogram, or the most intricate analysis, and I am in my own proper atmosphere" (Thomas, 1999, p. 1). Having access to the admittedly limited supply of such cases allowed him to utilize his unique talents and capacities, focussing his energy on solving the case. This resulted in the state known as flow, the opposite of boredom, and which is characterized by "by total absorption in a challenging activity for which the individual has the skills, albeit the skills are stretched to their limits" (Nettle, 2005, pp. 25-6; cited Csikszentmilhalyi, 1990). This desirable state consists in being fully alive, and is also characteristic of much of self-realizing activity, since it involves developing innate talents and skills in a process that may be absorbing much of the time. This is what would be lost, as Williams correctly notes, should terminal boredom ensue. It would not be enough merely to retain the desire to keep on living, as does a character in Heller's novel *Catch 22* (1955), who is so afraid of death that he seeks out boring tasks, because makes it seem, at least, that he is living longer before he dies. This would indeed be his perception, but this method of achieving a longer experience of being alive would be at

the expense of self-realizing activities. Eventually, he would become "frozen", and suffer "inner death", as did EM. This would quite likely be worse than bodily death, since the latter would at least be characterized by oblivion, and a lack of both unpleasant as well as pleasant experiences. This is certainly EM's conclusion: saturated with ennui, she decides not to take any more installments of her longevity potion, and the recipe is destroyed so that others will not have to suffer in the same way as she has done (Capek, 1925). Williams notes that, while it would be best to die before categorical desires for the goods of life have vanished, up until that time "there is reason for not dying", and, with exceptional luck, one might die "before the horrors of not doing so become evident" (1973, p. 100).

ii. **How finite is the pleasure to be gained from experiences?** While boredom itself may be an unacceptable affliction, as has been argued, nonetheless, its "horrors" may take longer to appear than the Epicureans, and Williams, believe, which means that there is a longer period during which it is good to be alive. Some types of basic sense experiences might be almost infinitely desirable, while the proliferation of new possible experiences of many different types, often mediated through modern technology, and which include the activities of self-realization, means that there is an almost infinite number of possible experiences. The timeline of an average lifespan as being sufficient for terminal boredom to result is, therefore, too brief, and it is unclear just when satiation would occur for a given individual, in particular circumstances.

Various kinds of experience make up the contents of a life, and include those pertaining to basic sense experience, as well as the more complex type of experiences that are characteristic of self-realization (Heyd, 1983). Simple experiences are of two

kinds, notably those that are capable of almost infinite repetition, and those which tend to admit of only a limited amount of repetition. To some degree, the psychological temperament of the individual will influence which of the two categories any given activity is placed in. Some people have a higher tolerance for repeating particular experiences while others continually seek new, different, experiences (Farmer & Sundberg, 1986; Jiang et al., 2009). The former type include those that pertain to basic survival activities which ensure continued nourishment and procreation:

> the pleasures of sex, food... and all those experiences which we do not mind having again and again in exactly the same manner....The fact that my pleasure of drinking my favourite cup of morning coffee is essentially the same as that of the thousand cups I had in the past does not make it a waste, let alone unwanted. (Heyd, 1983, p. 22)

For example, studies have shown that even seniors in their 80's and 90's remain interested, and engage, in sexual activity. The amount to which this takes place was found to be significantly affected by both the availability of a partner, as well as the general state of physical health, but not typically by a lack of desire (Bretschneider & McCoy, 1998; Diokno, Brown & Herzog, 1990). Eating, too, is always found to be a pleasure when one is hungry, although not when one's stomach is already full. The Romans allegedly solved this problem by using the *vomitorium,* wherein they ejected the contents of their stomaches after a banquet, so that they could enjoy the pleasure of filling them again (Skinner, 1996). Most people throughout human history have not had the option of doing this due to the scarcity of material resources, but even without this prolongation, the simple pleasure of eating is a significant one, and may also be

developed into self-realizing activities – learning *cordon bleu* methods of gourmet cooking, or how to grow and use a variety of flavour-enhancing herbs, for example. Even in prehistoric times, this basic pleasure would have offered considerable scope for self-realizing activities, for example, inventing the process of cooking, and examining and experimenting with new plants as they were discovered. This renders rather puzzling and somewhat inaccurate the Epicurean position that "life was a rather dreary round of the same experiences", therefore, "there was no reason to live on to see what the future might bring" (Gruman, 1966).

Conversely, some types of experiences may only be sought a limited number of times, or only once, for example skydiving, firewalking, or taking a holiday at a particular location. It would seem to be case, therefore, that those who are novelty seekers might come to an end of the pleasures afforded by this type of experience sooner than those who are satisfied with a great deal of repetition in their experiences. The former would presumably, therefore, be satisfied with a shorter potential lifespan.

There are, also, aided by modern technology, now a multitude and variety of new experiences – far more than one person is able to experience even in a long lifetime – which, even if they do not necessarily contribute to self-realization, are nonetheless desirable. As technology continues to develop, there are likely to be even more possible experiences of this type available (Clark, 2003). In the past, for example, most individuals would only have been able to access music on rare, communal occasions, apart from whistling or singing to themselves. Now the experience of listening to music is constantly available to those who desire it via large capacity portable media players such as ipods and mp3 players, as well as listening to

the radio, or even accessing web broadcasts of performances in distant parts of the globe for a relatively small fee (Sivadas, Grewal & Kellaris, 1998). These activities may constitute a very passive but nonetheless enjoyable or relaxing hedonistic experience, or comprise an active attempt to appreciate and understand various kinds of music, which knowledge may then be used to teach others to appreciate music.

The activities of self-realization itself may require a considerable amount of time and dedication, such as raising a child, writing a novel, learning ballet or painting, or becoming an expert on a particular topic such as literature or forensic science. Each of these activities requires a great deal of time – perhaps a lifetime – and effort, if they are to be fully developed, and many are most fruitfully engaged in one or two at a time. Furthermore, technology has also increased the potential number of self-realizing activities, which might include becoming a Webmaster, or an astronaut, or learning a difficult language such as Swahili through distance education, or a language course on a compact disc. As a result, given current life expectancy and lifespan, this means that it is only possible to engage in a small number of them in total in the course of a typical lifetime. With a longer life, more desirable activities of self-realization would be possible.

Given that there are now a multitude of possible new experiences, both real and virtual, hedonistic and self-realizing, even a novelty seeker who rapidly tires of each particular experience might have many decades of new experiences potentially available to them. It is even possible that an experience once undertaken many years ago, would present as new if sampled again, due to the psychological changes that will have occurred to a particular individual over time. For example, reading Tolstoy's

novel *War and Peace* for the first time at the age of 14 might be a very different experience from re-reading it again at 35, and again at 70, because both the process of psychological development, and new insights into life derived from individual experiences, will affect how that individual interacts with the text on each subsequent occasion. Most lives consist of a variable admixture of the two types of experience, dependent on temperament and life opportunities. With some basic experiences being capable of indefinite repetition, together with a proliferation of new possible experiences, therefore, it may be the case that an individual would desire a longer life in which to access them.

iii. **Hedonism and consumerism are more boring than pursuing self-realization.** Marx assumed that, given the opportunity, every person would choose self-realization over other possible life courses (Elster, 1986), but this does not seem to always be the case, however. Some may lack the opportunity, and even be unaware that they are not pursuing a desirable life until the opportunity is given to them. Economist Juliet Schor related the case of British workers in a shoe factory who were put on a 4-day week, and a reduced wage, during the 1980's recession. Initially most of the workers were bored, and did not know what to do with their unwonted free time, but after several months, many of them had taken up new interests, including community activities. When the work week was subsequently increased back to 5 days, together with the expectation that workers perform overtime beyond this, many were unwilling to do so, because engaging in the self-realizing activities was more satisfying than reacquiring their previous income (1992; cited Gorz, 1989).

Not every person does choose to actualize their talents, however, and, arguably, some may not have very many to actualize even if they do want to. Some people may simply be lazy, and reject the pursuit of self-realization because personal growth may be a demanding struggle that is not purely pleasurable, involving as it does hard work, the risk of failure, and periods of frustration (Elster, 1986). This group of people may, therefore, choose other life paths. Epicurus, for example, preached an austere hedonism that moderated appetites and reduced desires in order to render the likelihood of their being fulfilled more likely, in a world in which material goods were scarce; while at the same time pursuing friendship with similar minded people within the community (Gruman, 1966; cited DeWitt, 1954). This may explain why the desire for a longer life was frowned upon by this philosophy – it would involve multiplying a person's desires, the probable lack of fulfillment of many of which would cause disappointment and unhappiness. Friendship, however, would seem to be an unlimited good, and it is unclear why living longer, under simple circumstances, in order to enjoy it, would not legitimately be desirable.

Some of those disinclined to pursue self-realization may choose consumerism, which identifies the good as achieving personal happiness through the purchase of material possessions (Miles, 1998). However, there is some evidence to show that the pleasure to be derived from each new purchase and acquisition in "the pleasant life" of consumerism is fairly short, as are, typically, hedonic or sensual pleasures. They both may result in a jaded sensibility, such that a given activity, or purchase, is no longer productive of pleasure (Nettle, 2005; cited Ryan & Deci, 2001). In consumerism, this diminution of satisfaction due to habituation is the trigger for another purchase, hence

creating a treadmill of desire satisfaction if boredom is to be averted (Nettle, 2005; cites Kahneman, Walker, & Sarin, 1997). This is because of diminishing marginal utility – simple pleasures become less rewarding over time due to satiation and then boredom. The more complex activities of self-realization, however, may commence with a low level of satisfaction due to their very complexity and difficulty, but go on to give increasing levels of pleasure as they are mastered; hence these pleasures have increasing marginal utility (Elster, 1986).

Elliott (2003) noted that consumption is often engaged in for the purposes of public display, in order to garner public esteem, and hence self-respect, which is dependent on the respect of others:

> the point of buying things is not to satisfy your needs but to outrank your friends and neighbors....The goods we consume demonstrate to others, and to ourselves, our place on the social ladder....consumers are [not] satisfied simply to live up to the average level of consumption. Instead, they are always striving for an ideal of consumption that is always just beyond their reach, like a monkey grabbing for one more coconut. (pp. 100-105; cited Veblen, 1899)

This aspect of consumption also contributes to consumerism being a generally unsatisfying experience, leading to discontent, since there will always be someone else who has more, and hence the perceived need to acquire more oneself, *ad infinitum.* Part of the mission of business has been seen as "the organized creation of dissatisfaction" by means of planned obsolescence – creating new models every year, coupled with advertising campaigns to foster desires for material goods, in order to create a "dissatisfied consumer" (Schor, 1992; cited Galbraith, 1984).

Schor noted that increasing levels of material standards of living, accompanied by consumerism, have not been found to lead to increased levels of happiness in the US. These have declined from a peak in 1957, despite a doubling of income and material goods in the ensuring 40 years (1992; cited Niemi, Mueller, & Smith, 1989). She argued that the declining happiness could partly be explained by the number of hours of work necessary to pay for the goods, constituting "an insidious cycle of work and spend". Once a certain level of material comfort has been achieved, therefore, individuals would be better devoting their energies to "exiting the squirrel cage". This could be achieved by limiting desires for material goods, and, instead, devoting time to the "unpaid work" of leisure and self-realizing activities (Schor, 1992, pp. 140 ff.).

Additionally, when a society has encouraged consumerism as the main avenue for its citizens to pursue happiness, serious consequences have been found to arise in terms of a wasteful depletion of resources, and the concomitant destruction of the environment. Very large houses, or "McMansions", have been shown to use large amounts of energy for heating and cooling (Nasar, Evans-Crowley & Mantero, 2007), and due to built-in obsolescence, many products, having rapidly become outmoded, are often then simply thrown away into the landfill, as is increasingly the case with, for example, mobile phones (Goodland, 1995; Alting, 1995). Since self-realization does not depend on continuous, conspicuous consumption in order to achieve self-esteem, then there is an argument to be made that self-realization as a chosen life course would be better for the planet, because it would probably involve fewer material goods.

As a means of pursuing happiness, therefore, hedonism in general and consumerism in particular, while they may give some satisfaction to those engaging in

them, have been found to have serious problems associated with them, and have not been associated with lasting happiness (Keely, 2005; Zweig, 2007). Engaging in self-realization, therefore, together with a measure of desired experiences, which may include a portion of those pertaining to consumerism and hedonism, would probably lead to a far more durable happiness:

> The best 'value investment' of all is channeling money into goals that will make your life more valuable: drawing out your innate gifts....your happiness ultimately depends not on finding out how much you can buy but on learning how much you can be. (Zweig, 2007, p. 265; cited Sheldon & Lyubomirsky, 2005)

iv.**A limited window for new experiences is productive of boredom.** Elliott has argued that many older people would not benefit from a longer life, and the opportunity to enjoy new types of experience, because there tends to be only a limited time, during youth, when people are "experientially open". Innovations that occur after this time period has ended are not, he argued, generally perceived as desirable. This means that, rather than a longer life being a richer, fuller life, that would be "filled with new activities, new relationships, and new opportunities for self-fulfilment", it might just mean a longer retirement "to fill with shuffleboard and mashed potatoes" (2003, pp. 291-2). His unspoken assumption was that this would be boring. He gave the example of eating sushi, claiming that most of those who entered adulthood before this was commonly available do not desire to do so. Moreover, he admits that studies have shown:

> that most people develop a taste for what will become their favorite style of music before they are twenty years old...if a person is over 35 when a style of popular music is introduced, the odds are greater than 95% that this person will never choose to listen to it. (pp. 289-294; cited Sapolski, 1998)

There might be a degree of truth to this argument: as people grow older, studies have shown that they are generally less likely to desire to engage in popular or fashionable activities just for the sake of them. This is because they have usually already discovered which experiences *do* give them pleasure, and tend to focus on them. They do not typically find these experiences to be boring (Blanchflower & Oswald, 2008). An older person who was also a gourmand, who had not previously had the experience of eating sushi, might also be open to doing so. Furthermore, those who were not at the end of their lives at around the age of 80 might have an even more open view towards new experiences than those who knew that they were at the end of their life, and consequently disinclined to exert themselves to acquire new skills.

Some evidence has been found to support the idea that many older people were, in fact, open to new experiences, perhaps those which they did not have the time or opportunity for when they were younger. For example, Dorin's study has shown that "older adults were positively impacted by even minimal exposure to online education." Seniors were found to experience improved levels of both physical and health related functions, which in turn improved life satisfaction and perceived quality of life (2007, pp. 127-8). Russell has even termed older adulthood as an unique period in the life course, in terms of opportunities to learn: "with no time constraints, people in later life were able to devote time to learning in a way not previously experienced" (2008, pp.

206-7). The National Health Service in the UK, in an attempt to improve healthcare services for the elderly, has started offering beginner T'ai Chi classes to seniors. These have been found to be very popular, and other proposed activities include mountaineering and driving go-carts. The Minister for Health has stated that older people were actually *more* interested than younger people in taking up new activities, if by so doing they anticipated that this would improve their health (NHS to offer older people T'ai Chi, 2004, 4th Nov., para. 1). Carolyn Heilbrun has described the great and unanticipated pleasure she has derived from using the new technology of electronic mail as a means of communicating with friends (1997). Her experience is able to be generalized: e-mailing friends has been found to be the most common activity of seniors using computers (Hilt & Lipschultz, 2004).

Elliott has also admitted that other, possibly more rigorous, studies, have found that experiential openness is a psychological characteristic that is relatively stable across the life span, such that a person who was open at 35 would tend to remain so at age 75 and beyond. The reverse has also found to be the case – those who did not seek new experiences at a young age did not tend to do so when they were older (2003, p. 290; cited Warr, Miles & Platts, 2001). Simply being older, therefore, would not seem to necessarily militate against a desire for new experiences, and hence an increased likelihood of boredom.

v. **Social and economic factors and boredom.** Too much or too little work, and restricted gender roles may also affect the degree to which an individual become bored. The desperately bored man in Lucretius' example was clearly wealthy, since he had "a spacious mansion" and "a country villa", as well as "Gallic ponies" to transport

him back and forth between them. He may not, therefore, have needed to engage in paid work. This would have limited the type of experiences and projects he had access to, which might themselves have given rise to satisfaction and fulfillment. Also, the requirement that a person works results in a spacing out of desired experiences according to the availability of leisure time, and therefore lengthens the overall duration of time necessary to partake of a particular number of experiences. Conversely, those for whom life is characterized by endless work and drudgery, and for whom there is little opportunity for desired activities, might well be as desperately bored and unhappy as was Lucretius' wealthy man. This was the case for the workers in Wyndham's novel *The Trouble With Lichen* (1960). When a means, *antigerone,* was developed for living longer, the Trades Unions opposed its use, arguing that this would simply mean "600 years at the factory bench" rather than an increase in opportunities for desired experiences and projects. By the end of the novel, however, the workers had come to realize that, if they were to be able to live for 600 years, they might also be able to acquire more economic and social power, which would in turn allow for their accessing more desired experiences and projects, so they change their minds about the use of *antigerone.*

Boredom might also ensue from the limitations imposed by gender roles – an extreme example of this would be that of the concubines confined to the Sultan's seraglio, who tried to relieve what must have been stultifying boredom, by watching clouds and making up stories about them (MacMillan, 1988). It is significant that EM, in Capek's play, was a female who had lived through the 17th and 18th centuries, and would therefore have been subject to more restrictions on the scope of her activities

than is currently the case for most women in the developed world. She had exhausted the satisfactions of those that were open to her, including motherhood and marriage, and became an outstanding opera singer and *femme fatale,* but would have had few other desirable options available to her. Even by the 1920's, when the play was set, women's roles remained, on the whole, quite circumscribed. Since the 1960's, the women's movement, with its goal of achieving sexual equality, has broadened the range of activities open to women, including entry to careers formerly restricted to men (Friedan, 1998). Should EM be alive today, therefore, there would be other areas open to her in which to potentially increase self-realization, thus increasing the likelihood that she would escape boredom for a longer period of time.

vi. **How the changing perception of the passage of time relates to boredom.** Studies have shown that the older a person's chronological age, the faster will be the perceived passage of time. Both interesting and uninteresting experiences have been found to be experienced as passing by more quickly. With aging, therefore, there may be fewer opportunities to experience boredom. In *Waiting for Godot,* Beckett argued that the human condition was characterized by brevity: "[we] give birth astride a grave, the light gleams an instant, then it's night once more" (1965, p. 34). This might seem an excessive claim, particularly when viewed from the perspective of youth, which often anticipates that many fruitful years will lie ahead, together with the assumption that the passage of those years will proceed at the same rate as they do for a twenty-year old – quite slowly. An individual's perception of time has been found to change, however, with age, such that it appears to go by with increasing speed. Physicist Stephen Hawking (1998) has devised a ratio to quantify this, whereby perceived time

for an individual is stated as a ratio of actual time to time lived, because the perceived time it takes for each increment of experience is relative to the totality of experiences which a person has had. The human brain has to work harder to process *new* experiences, which generally occur when a person is young. With age, the response of the brain to many, if not most, experiences, has become automated, since these have probably occurred many times before. The processing of each experience therefore takes place very quickly, with the result that the perception of time passing has similarly speeded up. This means that, for a 4-year-old, the passage of time during a twelve hour day would be perceived as being only one-third as fast as for a 12-year-old. A nearly-50-year old, however, would have perceived it as being four times as fast as did the 12-year-old, and a centenarian would have perceived the day as passing twice as quickly as did the 50-year-old (Jones & Wearden, 2007, 2003). With the perspective of age, therefore, the claim that life seems to go by too fast might seem to be more accurate. A young person, therefore, might not believe that they would want to live longer than the average, because of the belief that they will have more than enough time to achieve everything that they want to, but a middle-aged person, subject both to the constraints of a diminishing amount of time left in total, and its increasing rate of disappearance, might want to live longer in order to achieve existing or new life goals. An older person might wish to live longest of all, in order to make the most of time's increasingly fleeting moments.

2.5.**Conclusion:** The argument that boredom would eventually ensue at some point, the longer one lived, seems to have some merit. Habituation to existing stimuli has been found to be a survival mechanism that allows familiar, and presumably safe,

phenomena, to be ignored. New phenomena, however, were found to be rapidly identified and reacted to, since they were potentially a threat (Aslanyan & Kiroy, 2009). This, when taken together with a view of the human mind as "an extended cognitive system whose constancy lies mainly in its continual openness to change" (Clark, 2003), would mean that in an environment in which nothing changed, then boredom and depression would be likely to ensue (Spack, 1995). Against this, there were found to be both virtually infinitely repeatable, as well as a multiplicity of new, experiences, which would tend to militate against the rapid experience of boredom. Experiences which contributed to the process of self-realization also tended to require a great deal of effort and time, and therefore to be interesting for a longer period of time than were the experiences of hedonism and consumerism.

The argument that there exists a restricted 'window' for new experiences that closed at a certain age, resulting in an increased experience of boredom in the aged was not found to be persuasive. Indeed, since studies have shown that time was perceived as going by more quickly with age, the likelihood of boredom in the elderly would seem to be reduced rather than increased.

Some types of societies would seem to be more predisposed to boredom than others, and a desirable balance of work and leisure, together with egalitarian class and gender opportunities, would probably result in less boredom. Given sufficient time, however, an individual would probably become "sated with life", and hence, bored. This was the fate of the Hyperboreans of Greek legend, who "lived to an extreme old age" of about 1000 years before escaping boredom by leaping into the sea and killing themselves (Gruman, 1966).

CHAPTER 3: WOMEN, THE 'TIME BIND', & PROLONGEVISM.

3.0. **Summary of the Chapter:** In section 3.1., I outline the conservative position that life is already long enough for most people to achieve their reasonable ends, and that it ought not, therefore, to be longer. In section 3.2., I discuss the objection that, particularly for women, this is not necessarily the case, and that living longer would enable both a greater degree of self-realization and financial equality with men. In section 3.3., I consider some other solutions other than prolongevism for achieving women's economic equality and expanded self-realization, but conclude that none of them have proven effective. In section 3.4., I consider some counterarguments to the idea that the best life for women is to live long enough to both engage in child-rearing and achieve a sufficient degree of economic independence to allow them to pursue desired self-realizing activities. In sub-section 3.4.i., I discuss the argument that, since, reproduction is a choice, then the economic and self-realizing sacrifices which it requires ought simply to be accepted. In sub-section 3.4.ii., I discuss the traditional argument from procreation, to the effect that parenthood and reproduction are identical to self-realization, and that, therefore, having longer in order to pursue other desired activities is unnecessary. In sub-section 3.4.iii., I evaluate the conservative argument that an economic division of labour and parenting are best for all concerned, with women devoting themselves to unpaid domestic labour, and men to earning the money to support a wife and family. In 3.5., I conclude that living longer than is currently possible would allow women in particular to choose both child-rearing and other forms of self-realization, such as a career, that would also allow for financial independence and equality with men.

3.1. **Life is already long enough.** Callahan has consistently argued that the "natural life span" ought not to be lengthened by human technological agency, since average life expectancy in developed nations is adequate to "accomplish most reasonable human ends." Callahan went on to argue that living longer would not, therefore "lead to a better family life, greater economic productivity, a richer cultural and scientific life, or a generally higher standard of collective happiness and sense of well-being" (Overall, 2003, p. 43; cited Callahan, 1993). Other conservative writers, including Kass (1985) and McKibbon (2003), have made similar claims.

3.2. **This is not the case for women.** In *Gulliver's Travels,* Swift described the increased potential for moral development and excellence should human beings be immortal, as were the Struldbruggs. He envisaged a long life in which it would be possible to do every activity well, since each stage of life would be extended. "Supposed a perpetuity of youth, health and vigour", it would first be possible to attain economic security, then an education, and finally function with power in the public sphere (1985, pp. 254-6). His scenario would also apply to a potential lifespan of several hundred years, particularly with regard to the situation of women, who have been found, as a class, to be denied equal opportunities in these spheres in comparison to men. I will argue that, contrary to Callahan's position, not only would individual women benefit by living longer, but so also would society in terms of an improved family life, greater economic productivity. This, taken together with a culture and science that reflected both male and female abilities and aspirations, would result in a higher level of happiness in society.

Overall has stated that it was sexist to make the assumption that women as a class would have had the chance to accomplish most of their "reasonable" ends in a typical lifespan:

> [t]he existence of gendered expectations about women's biological and cultural roles makes it less likely that women will have had as full a human life as men may have had and more likely that the quality of their lives may be lower than that of men. (2003, p. 49)

There have been found to be systemic factors associated with female biology and related social expectations, which, together with the necessity for bearing and raising children in a narrow time-frame of fertility, have resulted in major career, economic, and power gaps, which in turn have contributed to opportunity and self-realization gaps (Gold, 1993). Many feminist writers have concluded that, after a half-century of gains in the struggle for sexual equality, the women's revolution has now stalled, and is even reversing, in the so-called "opt-out revolution". Women have not been promoted into positions of power in proportional numbers to their education, and many have left the workplace and returned to the domestic sphere, having found themselves unable to cope with the demands of full-time work, and child and home care, simultaneously (Crittenden, 2001; Hirshman, 2006; Hochschild, 1989, 1997; Peskowitz, 2005). Women in particular, therefore, might benefit from having the choice to live longer lives, because it would potentially enable them to live long enough to overcome the economic consequences of female biology, which in turn affect women's opportunities for desired levels of self-realization.

Studies have shown conclusively that the crucial factor in determining a woman's career success, and hence her lifetime earnings, is whether or not she has borne children. Income levels for highly educated women starting their careers in high power environments have been found to be virtually the same as for men (Friedan, 1998) and continue to be so as she rises within the hierarchy, as she is more likely to do if she remains childless. Those who have succeeded in achieving equality with men in terms of career advancement, income, and power, tended, overwhelmingly, to marry late in their career, or not at all, and not to produce children of their own. This solution has a long pedigree – Plato observed that it was caring for children that prevented women from taking their true place in the governance of society, rather than a lack of authority in the deployment of reason, as Aristotle argued. He was therefore prepared to forgo the institution of the family, proposing that, if children were born, they be raised by the state, rather than by biological parents (Allen, trans. 2006). Many, if not most, women would regard this as an unacceptable solution, however, removing as it does many of the desired affiliative threads of their lives, with a concomitant reduction in self-realization. The Israeli *kibbutzim,* which tried this experiment in the years after the war of independence in 1949, have largely abandoned it at the request of parents. Children now stay in the nursery during the day while parents work, but live with, and are cared for by, their parents for the rest of the time (Palgi, 1997).

If a woman has become a mother, 'the observed earnings gap grows with each successive child', such that for one child her income drops by 9%; two, by 12%; and three or more, by 20% (Zhang, 2009, March, p. 6). Women who have stayed at home to raise children, without pursuing a career, have often found themselves in poverty in

the event of divorce, and at risk of poverty in old age, since they will usually not have contributed to, or be eligible for, a pension plan. The two largest groups making up the impoverished class in any society are women who are the head of their household – or "single parents" – and single retired women. Even in Canada, women face the likelihood of being in poverty at increased levels in comparison to men throughout their lives, whether as single parent mothers, unattached women over the age of 65, or unattached women under the age of 65 (Ross, 2000). Those living in poverty have been found to face far higher levels of depression than does the general population (Nettle, 2005; cited Diener et al., 1993), and will also tend to be hampered in their access to desired experiences and therefore self-realization itself, whose consummation usually requires a measure of resources beyond those to be found in situations of economic need.

Economic deficits are also usually associated with a lack of power – women occupy, in general, "more servile positions" in society in comparison to men, which affects their income (Overall, 2003, p. 49), and they may literally be "servants", performing unpaid reproductive and household labour due to gender bias in terms of expectations of women's role within the family (Mies, 1998, pp. 31-33, 222; cited Marx, 1974). This in turn has tended to inhibit the possible number and quality of desired life opportunities. Economic parity with men, commonly needing to be achieved through engaging in paid work, "usually accompanies power, and it entitles the bearer to wield power, including within the family" (Hirshman, 2006, pp. 46-9). In order to accomplish this, the feminist revolution commencing in the 1960's urged women to 'have it all' – i.e. family and career – by taking on the double burden of

motherhood and work, mainly with little or no help from their husbands, society, or their workplaces (Friedan, 1998). Schor has noted that, for many women this has resulted in extreme and perpetual exhaustion, enduring :

> a workday rivalling those for which the "satanic mills" of the Industrial Revolution grew justly infamous: twelve-or fourteen-hour stretches of labor. (1992, p. 20)

Exhaustion, together with an inevitable failure to meet high standards in both roles simultaneously, predisposes to depression. Women who have small children at home:

> show the highest prevalence of psychiatric symptoms. This effect appears to be exacerbated if they are in paid employment, particularly full-time employment. (Apter, 1993, pp. 197-8; cited Elliott & Huppert, 1991)

Rates of female depression have, moreover, risen steadily in tandem with the rates of mother's participation in the workforce since the 1960's, which many experts have argued is precisely because of this overburdening and exhaustion (Peskowitz, 2005).

Parenthood is an undertaking that has many associated financial, social, and emotional costs, which are largely, given social expectations of the female role and the structure of the work world, borne by women. They have been shown to experience a "time bind" that requires them to continually multi-task to a great and unsustainable degree, in order to attempt to address all of the tasks which fall to their lot in the course of the day or week. This has resulted, for many women, in a substantial lowering of their quality of life, as time spent interacting with children, leisure time, and sleep have tended to be forfeited. These responses are also typically limited in their effectiveness, since they have been found to lead to new problems: resolving the emotional and

behavioral problems of children, consequent on a lack of parental attention, has been termed "the third shift for women". Diseases related to the stress of continual overwork such as high blood pressure, heart disease and stroke have been found to be increasing for women; together with an increase in the likelihood of accidents, and a decrease in productivity, due to a lack of sleep (Schor, 1992, pp. 5-13; cited Fuchs, 1998; Hewlett, 1991; Hamermesh, 1990, October).

Many professional women with high-powered careers have now chosen to "opt out", i.e. stay at home while their children are small, then work part-time for a number of years as offspring grow up. This has been found to be, usually, in less demanding positions such as the "Mommy track", or in a different field than they were trained for altogether, a course of action which has often had significant economic repercussions in later years, including reduced pensions:

> because women are shortchanged when it comes to wages, they are shortchanged in their retirement years as well. Lower wages leave women with less to save or to contribute to an employer's retirement plan. In the United States, women will go into retirement with at least $300,000 less in earnings than their male counterparts. (Soroptimist International of the Americas, 2006, p. 9)

Abandoning their often expensive training in order to stay at home for a significant portion of their children's lives has meant that women are failing in their collective duty to change society for the better:

> their talent and education are lost from the public world....[t]he abandonment of the public world by women at the top means the ruling class is

> overwhelmingly male. If the rulers are male, they will make mistakes that benefit males. (Hirshman, 2006, p. 6)

Opting out has had persistent negative consequences, both for individual women and society as a whole, and taken together, these have contributed to the ongoing lack of female equality with males. However, women also regard themselves as having a duty, as well as a desire, to take care of and raise their own children, should they choose to bear them. These duties have been found to come into serious, if not irreconcilable, conflict, particularly when children are small and very dependent (Friedan, 1998). Effectively combining the two duties is daunting, and it is unsurprising that women do often opt out for a number of years, in the belief that it is the best possible compromise in the circumstances.

Living longer, however, would enable women to fulfill both of these duties in a way that contributes to achieving a greater degree of self-realization in both areas of activity. If it were possible to live longer, given a concomitant retention of health and strength, this would allow women to devote time to education, developing work skills, advancing in a career, and building economic prosperity before, if they so wished, being able to afford taking a desired number of years out of the paid workforce to engage in parenting, or other desired activities, without sacrificing financial independence. Over the course of a much longer lifetime, taking a number of years off in this way would have less of an effect on lifetime earnings, career advancement, and pensions, consisting as it would of a much smaller proportion of the total lifespan. For example, currently, if a woman spends time being educated until the age of 25, then works until the age of 35, whereupon she has two or three children, she will have

the economic constraints associated with those children for about 20 years. At this point, around the age of 55 , with a reasonable prospect of working only another 10 years until retirement, it would be difficult to justify a new round of education and training that might last for a significant number of those years. With a potential lifespan that allowed for another 50 years of work, together with good health, for example, the increased training would be justified and effectual, thus reducing the economic deficit resulting from the career gap. Conversely, if a woman were to have children, and spend 20 years caring for them in a situation of economic disadvantage, she would have ample time at the age of 40 to gain an education and pursue a career, avoiding the fate of a penurious old age that is so common for women who find themselves single upon retirement.

3.3.**Solutions other than prolongevism for increasing women's economic equality with men.** One of President Barack Obama's first acts upon taking office in January 2009 was to create a White House Council on Women on Girls, to address continuing gender inequities in the US:

> On average, American women continue to earn only about 78 cents for every dollar men make, and women are still significantly under-represented in the science, engineering, and technology fields....The challenge of ensuring equal educational opportunities for women and girls endures. Many women lack health insurance, and many are unable to take time off to care for a new baby or an ailing family member. As the current economic crisis has swept across our Nation, women have been seriously affected. (Obama, 2009, March 11)

He identified both economic and opportunity gaps for women, together with some implied solutions, including increased education for women, particularly in traditionally male, high earning disciplines, and government policies such as subsidized day-care and paid parental leave. Other proposed solutions have included more equal parenting/housework division of labour within marriages, the use of nannies and maid services to ease the burden of child and home care, and a change in corporate/work culture that stop penalizing women for gaps in their careers. I will argue that the majority of these have proven to be ineffective solutions to ongoing female inequality.

In developing countries, the education of girls and women has continued to be an issue of the utmost seriousness, if women are to progress from a far worse level of oppression than is currently the case for women in the developed world (Mies, 1998; UN, 2007). In developed countries, educational factors have been found to be a class rather than a gender issue, and overt gender barriers to engaging in what were formerly 'male' occupations have largely been eliminated. Overall, women have been graduating from college at rates of about 55% in comparison to men, and from law and business schools at between 30 and 40%. This indicates that women are educating themselves in serious, work-related subjects, but these percentages have not been reflected in positions of power in the workplace. This has resulted in a "sex-specific brain drain from the future rulers of our society", whereby:

> only 16% of law firms had female partners in 2003... 16% of Wall Street's corporate officers were women in 2002...8% are [currently] Fortune 500 CEO's. [From] 1997, the percentage of women in state legislatures in the US

[has remained at] 23%. (Hirshman, 2006, pp. 8-10. Cited US Census Bureau, 2005, Dec.; Center for Women in Government & Civil Society, 2006)

Despite having gained access to traditionally "male", high earning disciplines, therefore, women who have children have been shown to earn less because they remained low in the career hierarchy: female physicians earned 58.3%, and female college professors earned 78.6%, on average, of their male counterparts' income. (Hirshman, 2006, pp. 11-14; cited US Labor Bureau, 2002). This inequity has been found to continue for the rest of women's lives. Moreover, because mothers' earnings, in comparison to childless women, have grown more slowly, "earnings losses incurred by mothers might never be regained" (Zhang, 2009, March, p. 7; cited Phipps, Burton & Lethbridge, 2001). It has been surmised that this was probably due to fewer years of work overall due to interruptions for childbirth, working fewer hours due to caring for children, and the choice of work "with more flexibility but lower pay" (Zhang, 2009, p. 6; cited Waldfogel, 1998); i.e. "jobs" as opposed to "careers". Moreover, professional women in careers requiring specialized skills have been shown to have lost them after even a short period of time out of the workforce (Zhang, 2009).

Having children, therefore, has been shown to result in an economic child penalty that reflects "the opportunity costs of having children", which has been a major factor in why women are overly represented in low paying, less satisfying work (Zhang, 2009, p. 7). This has delayed the achievement of gender equity, i.e. an equal share with men in terms of access to goods and resources (Mies, 1998), and hence of self-realization. Living longer in good health, however, would mean that women would have time to overcome the career gap, which may be of 20 years or more from

their desired field, by retraining, and then working child-free for a sufficient number of years to both rise in the hierarchy of power, and thus achieve financial independence.

President Obama has made an assumption that federal policies can be devised which will remedy the financial inequities between men and women. There is some truth to this, in that the more blatant injustices, such as a lack of universal health care, and paid maternity leaves, could be addressed, thereby mitigating the situation somewhat for mothers and their children. However, even in the most enlightened nations, such as Sweden, which have implemented many "family friendly" policies of this type over the past nearly three decades, including universal, free daycare, women's average pay has remained at 82% of that for men – an increase over the US of 4% – a figure that has not changed for over ten years (Rubery, Grimshaw, Fagan & Figueiredo, 2003; Meyersson-Milgrom, et al., 2001) This has, moreover been paid for by extremely high taxation, that has been reduced to nearly 60% currently. Many women have been, therefore, forced to work because of the high tax on their husband's jobs, even if they would have preferred to stay home with their children while they were young. They might use the free daycare in order to take one of the many government funded social welfare service jobs, which are not particularly well paid, and are mainly filled by women (Gilbert, 2008). It does not seem, therefore, that federal policies of this type would necessarily either reduce financial inequities, or result in a greater degree of self-realization for women.

A more equal division of domestic and parenting labour would give mothers more time in which to engage in desired activities, including promoting their career: "time spent on home production...directly reduces earnings for women," in an inverse

relationship (Grossbard-Schechtman, 2003, p. 36). Currently, there remains an inequality: the mere fact of marriage means that women will increase the time spent on housework by 17%, while their husband's decreases by 33%, suggesting that there is a basic gender gap with regard to housework. Studies have indicated that, while women did not actively *like* housework more than men, they did *dislike* it less, and were also subject to social expectations that this area of unpaid work was their responsibility (Moen & Roehling, 2005, p. 12; Moen, 1992, p. 43). The inequality of this situation has been found to be exacerbated when women have children, so that with three or more children, women do nearly 30 hours per week, while their male partners average about 10 (Stafford, 2008). Women who work full time, in addition to working in the home, average about 21 hours per week, or 50 full days a year, more than their husbands. This has contributed to a significant leisure gap between husbands and wives, that is also productive of a self-realization gap (Crittenden, 2003; cites Woolley, 1994).

Recognizing the importance of reducing the amount of women's unpaid labour in the household if women are to achieve financial equity with men, women's rights campaigners in Europe have been attempting to make an equal share of housework a legal requirement within marriage, particularly if women are working full time. Spain has recently enacted legislation to this effect (Cloutier, 1999, May 19th). It is difficult to see how this could be enforced, however, and raises the spectre of visits from the police after a report that the dish-washing schedule had not been adhered to, or of a husband facing charges in a civil court for persistently leaving his socks on the floor, neither of which outside interventions would seem to foster a spirit of cooperation

within a marriage. Such a law may, however, back up the legitimacy of a woman's requests for help from an otherwise reluctant male.

Hirshman has proposed the twin solutions of "ignorance and dust" – women should refuse the role of household manager, and accept the fate of living in a dirty house. This would, it is argued, force husbands to do a certain amount of basic housework, even if it is not up to the standard which the wife would attain, which is a good trade off in terms of saving energy for important tasks at work (Hirshman, 2006, p. 59). Working women have been found to perform less housework than women who do not work outside the home, minimizing it to the bare essentials (Hirshman, 2006), but a certain level of organization and cleanliness is necessary for everyday life – chaos is actually counterproductive in terms of getting things done, and the presence of dirt and clutter may contribute to unhappiness and depression. Women might also be more uncomfortable with the aesthetics of a dirty house and children, and therefore prone to remedy the situation before her husband is inclined to. After the stress of repeatedly losing such covert battles, many women have given up and do the work themselves (Hochschild, 1997). Hirshman has also suggested directing a sarcastic running commentary at one's spouse concerning the household tasks that are being engaged in by the wife. After a week of this, the amount of work being done, and the unfairness of its distribution, would be apparent. If a husband was lazy but essentially helpful, he might decide that he preferred to do more work in order to avoid the monologue at his expense (Hirshman, 2006). If he was less concerned to be fair and helpful, and was also aware that if he divorced his wife he would be considerably better off than she – since single women heading households are very often in straitened

economic circumstances, while their former husbands experience an increase of about 40% in their disposable income (Hirshman, 2006; Hochschild, 1989) – then he might use this fact to bargain his way out of doing a fair share of housework. Many women, having realized that they do not want to endure the rigors of single parenthood, have chosen to accept the unfair division of labour, which also impacts her career and overall economic prospects, but to a lesser degree (Pollack, 2005).

Men have been found to be performing more housework than in the past, and one study has concluded, therefore, that "the revolution in gender aspirations and behaviour has not stalled" but is merely proceeding very slowly (Sullivan & Coltrane, 2008). Over the past forty years men's contribution to housework has increased from 8 hours per week to 10, while women's has decreased from 32 to 30 hours. This is a rate of increase for males of, on average, half an hour *per decade*. If this slow rate of change continues, and most studies do not anticipate dramatic, if any, increases, then women will continue to be hampered in their efforts to achieve housework equity with men, and the resultant improvement in financial equity, until about 2065.

With a longer potential lifespan, women might live long enough to see this equalization. Men and women would then both share the financial disadvantages of engaging in unpaid domestic labour. Moreover, a longer lifespan would reduce the proportion of time spent in the major domestic labour associated with a family – about 20 years – in comparison to the time available to pursue a career.

Wealthier families have often solved housework and childcare problems by means of employing domestic servants such as nannies and housekeepers, a solution recommended by Hirshman since it enables women to continue with demanding, high

paid careers (2006). Arguably, the nannies and maids, who are usually female, and their families, are thus enabled to escape from poverty. This may indeed be the case, but increasingly servants have been recruited from developing countries, which have been devastated by their loss. Studies have shown that female migrant workers were often not derived from the poorest sectors, and were usually better educated than their male peers. For example, a Filipina domestic servant working in Hong Kong could earn fifteen times the amount which she could earn as a school teacher back in the Phillippines, even though the work itself did not reflect her abilities and training (Constable, 2003). However, there are some serious costs to this arrangement, particularly as it becomes more prevalent, both to the women engaged in it, and to their families and communities . Often women left their own children behind with family members, who were usually female, because many if not most husbands and fathers refused to take on the untraditional burden. Sometimes a young daughter would be taken out of school to care for younger children in the absence of the mother. Mothers may be away for many years, sending home money for their children's care and education, while saving money to build a house, or start a business, upon their return. The employer's children may thrive under their purchased care, while the Nanny's own children have suffered significant distress, despite the economic benefits of their mother's work. The women themselves have been found to have suffered significant loneliness, alone in a foreign country and culture where they were only temporary migrants. Even if they had kindly employers who pay their wages on time – and many did not – they achieved their economic advance:

> only by assuming the cast-off domestic roles of middle-and high income women in the first world – roles that have been previously rejected, of course, by men. And their 'commute' entails a cost we have yet to fully comprehend. (Cheever, 2003, pp. 31 ff.)

Huge numbers of women have been found to be engaged in this commute, according to official statistics, which do not take account of illegal migrants, in an unprecedented "feminization of migration" (Ehrenreich & Hochschild, 2003, p. 7; cited Anthias & Lazaridis, 2000; Castles & Miller, 1998). The loss of educated women from third world countries has constituted both a "brain" and a "care" drain, since it is these women who would be caring for the old, the sick, and children in their own countries (Parrenas, 2003, p. 41). It does not seem just that affluent, first world women are taking steps to achieve their own self-realization at the cost of so much suffering on the part of the women who are their servants, together with their separated children, and their distant communities.

The decision to opt out of the workforce either fully or partially, in order to care for small children, carries with it the threat of economic disempowerment, because of the goals and organization of businesses (Hirshman, 2006). Work gaps have usually been viewed as a great disadvantages by employers, constituting evidence of a lack of commitment to work. Part-time work is also harmful on a resume, and women may pay a high price in terms of reduced career promotions, overall earnings, and pensions. Women who go back to work after only quite short absences usually have to take lower paying, lower status jobs. They often settle for a "job" rather than a career. Furthermore, if many women continue to take part in the "opt-out revolution", then

women who are serious about their careers may be harmed by their sister's actions, because companies will not want to invest time and money training women if the likelihood is that they are going to leave, or work part-time (Hirshman, 2006).

Market driven capitalist economies and the companies within them have not been designed to allow men and women to adequately balance work and home life, and even when they have paid lip service to this ideal, the reality was a thinly veiled version of "business as usual" (Hochschild, 1997). Even men who participated fully and equally in raising their children suffered what has been termed a "daddy penalty":

> Even when differences in the numbers of hours worked, years of experience, field of employment, and career interruptions are taken into account, men who are the sole breadwinners for their families enjoy incomes at least 20 percent higher than those of married men with children whose wives have careers. (Shaw & Barry, 2005, p. 355-6; cited Marriage's "Unique Effect", 2002, May 13)

This is not so harsh for men as for women, however, since upon marriage, men tend to earn a "marriage bonus" of 10% in comparison to their single peers (Hirshman, 2006, p. 64). This is another reason why many couples make the decision for the wife to remain home and take care of domestic duties, thus allowing their husbands to maximize his earnings, since it "makes more economic sense" (Hirshman, 2006, p. 62).

Hirshman argues that workplaces, and the corporate culture, must be forced to change in order to better support the efforts of women with children to work successfully, by recognizing productivity rather than hours at work; providing good childcare; and not penalizing men and women who wish to avail themselves of parental

leave, or family sick days. Some of her recommendations are, however, unrealistic. On-site nursing rooms for breast-feeding mothers, as an example of a family friendly workplace, might be a solution for women in lower-ranking positions in the business world, but seems incompatible with the demands of higher positions, particularly as nursing produces oxytocin, a hormone that impairs brain functioning (Hirshman, 2006; Carter, 2003). Additionally, being out of the workforce for a number of years, in some complex disciplines, given the pace of modern technological change, can result in the need for complete retraining in the even of an absence, while some former jobs may no longer even exist. Most businesses are in existence to make money, and to do this they need to get the most out of their human resources. As a result, many businesses argue that making the work environment "family friendly" would simply cost too much (Hirshman, 2006). The American corporation studied by Hochschild (1997) had won an award from *Working Mother* for its innovative policies, but eventually discontinued the management position responsible for instituting them, as well as most of the policies themselves, citing the need for cost-cutting in order to be competitive. Part-time workers were considered to have made a part-time contribution, not just in terms of hours, but also in terms of effort and engagement. As one corporate executive remarked:

> CEO's and rainmakers don't come out of the Mommy-track... if you go part time, you're signalling to your employer you're on the B-team. (Shaw & Barry, 2005, pp. 355-359; cited The Mommy Track, 1989, March 20th)

Since productivity has been found to be difficult to measure, putting in long hours might be a legitimate method of assessing it. Long hours might even be necessary to compete successfully in the global economy, where stock markets are always open somewhere in the world. It also demonstrates commitment and loyalty to the company in a way that those who have other commitments and loyalties in the shape of families, cannot equal: childless women, and men with traditional wives, are promoted faster and higher than women with children for a reason (Shaw & Barry, 2005; cited Men Whose Wives Work Earn Less, Studies Show, 1994). Why would a company or corporation reward workers who work on a strict schedule of nine to five, with coveted, high status, financially lucrative positions, when there are other employees prepared to compete for these by working far longer? Furthermore, in these unprecedented economic times, employers will likely be able to continue to dictate their own terms, which will not be favourable to those who are looking to both balance their work and home life, while advancing to the top of the promotion ladder.

3.4. **Counterarguments to the idea that women ought to be able to 'have it all' by living longer.**

i. **Reproduction is a choice.** All choices have both positive and negative consequences. Due to the high availability and respectability of contraceptive measures, including abortion, in a majority of developed countries, having children is now a choice for many women (Marston & Cleland, 2003; Henshaw, Singh & Haas, 1999). They are not forced to have children, and may choose not to, or to have only one child, which does not have a large effect on their lifetime earnings, or delay

motherhood until they have established themselves in their careers. They ought, therefore, to accept the opportunity and economic costs of motherhood as a consequence of their choice.

It is true that some women were happy to make an outright choice between motherhood or career, for example, Simone de Beauvoir, who accurately noted that "children were the problem" when it came to achieving women's liberation (Walsh, 1995). Others were less happy with their choice, and would have preferred to have had children, but realized that this would have conflicted with their career goals. For example, Patricia Ireland, head of the National Organization of Women, stated that she regretfully decided that she "couldn't do what [she] wanted to do with [her] career and have children" (Hirshman, 2006)[1] Others have decided to wait until they were established in their careers, only to find out that they had left it too long. For example, Germaine Greer was devastated that she was unable to conceive, and grieved deeply for her unborn children (Walsh, 1995). Moreover, those women who did delay motherhood before successfully bearing children, have discovered that this did not save them from the associated economic penalties (Zhang, 2009, cited Phipps, Burton,& Lethbridge, 2001).

For some women, bearing children was less of a choice. They might have been under social and cultural pressure to produce a child, for example, from:

> women's magazines, advertisements, television, movies, novels, columns and books by experts on marriage and the family, child psychology, sexual

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[1]Hirschman, *op.cit.,* p. 62.

> adjustment and the popularizers of sociology and psychoanalysis. (Friedan, 1963, p. 45)

Women may have become pregnant accidentally, despite career plans which did not allow for this, and then found themselves either unwilling to have an abortion or give up the baby for adoption, or actively desiring to have the baby and raise it. It seems grossly unfair that the choice, to whatever degree it *was* a choice, to bear children should have such extensive life-long consequences on women's, but not men's, lives. These consequences include negative effects on physical health, and hence life expectancy – each child a woman bears shortens her life expectancy by an average of 4% (Hollingsworth, 1965) – economic well-being, and the degree of self-realization which is attainable in comparison to males. Nor are women solely benefiting themselves when they take time away from careers to raise children, so it is unjust that they are expected to bear, solely, the resulting financial burden. Children are demonstrably happier, healthier, and more intelligent when their mothers spend time out of the workforce caring for them when they are young. Society benefits from having healthy, well-adjusted, adequately socialized children. Husbands benefit from having wives who take care of the home and children while they concentrate on their own careers, and improve their earning power. Yet women are punished economically for providing these unpaid services, which in turn impacts upon their ability to engage in self-realizing activities. To whatever extent this situation is remediable by life extension, therefore, it ought to be remediated.

ii.**The traditional argument from procreation.** The conservative position views procreation, and the personal sacrifices on the part of parents that it entails, as

constituting the most fulfilling and desirable life, and that is therefore identical to self-realization (Kass, 2003; 2001; 1985). Parents ought happily to sacrifice their own unrealized ambitions, therefore, to celebrate those of their offspring, as does, in Kass's example, the parental salmon, that "willingly" gives up its life shortly after reproducing, thus providing nutrients for developing offspring via its rotting corpse (Kass, 1985, p. 98). Under this scheme, women's desire for, and general lack of, opportunities for self-realization other than through procreation, and attempts to reduce the financial inequities of her situation, rather than concentrate on bearing and raising offspring, have been deemed misguided – even selfish – and irrelevant.

Moreover, the conservatives have argued that the traditional limitation on women's scope for activity ought to be accepted, since it is actually in their best interests in an imperfect world. Since the rise of feminism in the 1960's, depression rates for women overall have risen in tandem with the entry of women into the workforce, and those for mothers with small children, who were working full-time, have been found to be high (Apter, 1993; cited Elliott & Huppert, 1991), an indication that this modern arrangement does not benefit women. It is argued that children, too, have suffered from inadequate parenting when mothers work: enduring long hours in day-care was found to be stressful, as was evidenced by high levels of cortisol found in children who spend more than 5 hours per day there, and there is evidence to show that children who were in day care from infancy have lower recorded IQ's when they started school. Older children left alone by working parents were found to be more at risk of accidents, alcoholism, and teenage pregnancies than the children of mothers who were at home (Schor, 1992, cited Hewlett, 1991). Husbands, too, were happier

and did better in their careers when their wives stayed at home with the children (Hochschild, 1997; Moen, 1992).

In terms of Kass's example – quite apart from the fact that the salmon can hardly be considered to have been making a free choice concerning either reproduction, or its subsequent demise – as a parallel to the human experience it failed to take into account that it is women, in the main, who have made, and continue to make, most of the sacrifices associated with parenting. Many women have undoubtedly found procreation to be a rewarding area of self-realization, but arguably many, if not most, have many additional talents that go unrealized because of it. Fathers, however, have typically enjoyed the pleasures of their homes and families, while simultaneously pursuing their own careers and chosen aspects of self-realization. This theory of flourishing, therefore, is both sexist and unjust. This injustice is exacerbated by the fact that, under this system, which has held throughout most of history, living through the achievements of one's offspring has always referred to those of males, since daughters have been expected to continue in the same, other-directed, self-abnegating, tradition. Embracing this theory into the future would thus further compound gender inequities. Furthermore, it could be argued that when mothers live purely through their children's achievements, rather than pursuing their own, this places a great burden on offspring to realize their mother's ambitions, rather than live their own lives.

Moreover, the depiction of all, or even the majority, of post-menopausal women as saddened by the end of their fertile years, and as undergoing "empty-nest syndrome" when their children leave home, has been found to be a myth: most women welcomed their new-found freedom from the sacrifices occasioned by child-bearing

and rearing, and enjoyed the opportunity to pursue self-realizing activities on their own account (Sheehy, 1998). Kass (2001) himself stated that he would not care to live 25% longer, if this meant 25% longer spent on raising teenagers. Taken together, these facts cast doubt on his argument that procreation *alone* is necessarily the best route to a fullfilling, self-realizing life, although it may comprise a desired part.

Some of the most influential people who ever lived did not have children, yet their cultural and scientific legacies live on. For example, Michelangelo is not known to have married or sired children, and is believed to have been homosexual, but it seems unlikely that his life could therefore be characterized as lacking in value, since he devoted himself to other self-realizing activities that are highly regarded by society (Symonds, 2003). The science of memetics has argued that units of activity, behavior, or culture, called memes, are similar to genes in that they compete to be replicated by means of imitation, and by this means become widespread in society, or the meme-pool. The memes mutate when they are altered and used in original ways by subsequent imitators, thus affecting cultural development (Blackmore, 1999). Influencing posterity by virtue of one's activities or behaviour, as was demonstrably the case for Michelangelo in the context of art and design, may therefore be as, or more, important than passing down genes to offspring. Yet there have been very few acknowledged women artists of genius, arguably, in the main, because the realities of child-bearing and raising have left no time for them to develop their potential talents in an average lifespan. Those women who have been able to leave an artistic, as opposed to genetic, legacy either had no children, or, as did Grandma Moses, lived long enough

to overcome the self-realizing gap occasioned by motherhood (Slatkin, 1993; Tufts, 1987).

Maslow has characterized human needs as being hierarchical (1954), with self-actualization – a concept that corresponds to self-realization – as the highest and most valuable human need:

> Man's [*sic*] desire to live, to be in the world, is inseparable from his desire to live well. Nay, more, he conceives of life not as simply being, but as well-being. (Y Gasset, 1989, p. 293)

Basic survival and reproduction – Capek's "eternal scratching for a piece of bread" and "this animal part of life" (1925, p. 122) – while fundamental and necessary, seem to be of lower value as human activities. This may explain why women, who have been delegated the major responsibility for bearing children by virtue of their biology, have historically also been accorded lower value, despite the idealization of motherhood (Crittenden, 2001). The increasing availability of a variety of effective contraception technologies, including abortion and emergency contraception, and the legalization of their use in many cultures, has caused fertility rates across the world to fall consistently, particularly over the last several decades (Cohen, 2003). Women as a class, therefore, when the choice was available to them, have made the choice also to pursue other than merely procreative activities. Their right to make this choice ought to be respected, which will enable them, potentially, to engage in desired levels of self-realizational activities.

Let us turn now to the argument that traditional limitations on women's activities are beneficial. While it is the case that women with small children, who work

full time, often feel highly stressed and on the verge of a breakdown, mothers who are purely homemakers have been found to endure even *higher* rates of depression (Declerq et al., 2007, Fall). This may be an indication of the existence of unused abilities, since, as Aristotle recognized, happiness results in part from the use and development of one's abilities (Ostwald, trans., 1962). Housework, while a necessary task, does not, as a full-time occupation, meet the criteria for a good human life for a thinking human being, consisting as it does largely of mentally unchallenging, repetitive, and relentless obligatory tasks, often performed in isolation (Friedan, 1963). Childcare, while it is important and potentially emotionally satisfying, does not necessarily engage the full repertoire of skills of an adult human being, which may explain why women generally feel happiest at work, once their children are out of babyhood and in school full days (Gilbert, 2008). When they have the option, mothers' choices indicate that they usually prefer to stay at home when children are babies, work part time when children are older, then full-time once children have become more independent; probably at a "job", rather than a demanding career (Zhang, 2007; cited Waldfogel, 1998). While it is true that babies placed in day-care at the age of a few weeks probably do not get the quality of care, or emotional bonding, that they would have from a sole caregiver such as a mother or grandmother – or nanny – once they are out of babyhood studies have shown that they both tolerated, and benefited from, up to 5 hours a day in day-care, several days a week. It was only when they had to endure 10 hour or longer days as babies or young children – as was typical for children of mothers in higher levels of management (Hochschild, 1997) – that daycare becomes unduly stressful. Older pre-school children were also found to have

benefited intellectually and socially from the stimulation offered by a good day-care (Clarke-Stewart, 1993). This arrangement, which is constitutive of the opt-out revolution, has allowed women to take account of, and attempt to balance, both their own and their children's needs, rather than engage in fulfilling the requirements of prescriptive altruism on the one hand, or distance themselves from involvement with raising their children on the other (Friedan, 1998).

iii. **An economic division of labour in marriage and parenting.** Gordon Becker won the 1992 Nobel Prize in economics, for his theory of marriage as a mutually beneficial economic transaction. He argued that Women should specialize in providing housework and childcare services, while their husbands should specialize in a paid job, which division of labour would result in an economic surplus. Half of this surplus, he argued, would naturally tend to be spent on the wife and children, the other half on the husband, resulting in a fair reward to each party from the economic transaction (1981). Unfortunately for the theory, studies have shown that this tended not to happen, but rather that there existed "a positive relationship between women's share of family income and expenditures on women's and children's' equipment" (Hirshman, 2006, pp. 52-3; cited Grossbard-Schechtman, 2003). When women had resources, the children tended to benefit, but not necessarily, or to such a large degree, when the father did. This is why the UK government, in 1979, commenced paying child benefit directly to mothers, rather than including it as a tax deduction for fathers (Hirshman, 2006).

What women actually received from this allegedly mutually beneficial economic transaction was dependency and powerlessness: "their so-called free choice

makes them unfree dependents on their husbands" (Hirshman, 2006, p. 2). This has resulted in a relative lack of power concerning decisions about spending the surplus, where the family would live, etc. When a woman had raised the children, and resumed work in the public sphere, she would, of course, be subject to financial inequality as a lifelong debt from this "mutual"economic transaction. Her husband, however, would have gained financially in the form of a 10% "marriage premium", whereby married men earned more than single men simply by virtue of the fact of being married; and 20% more than those men whose wives also worked (Moen & Rohling, 2005, pp. 43-9).

3.5. **Conclusion:** The number of women entering the work force in North America started to decrease in the late 1990's, for the first time in the past half-century, even as the birth rate continued to fall (Peskowitz, 2005). This indicated that there may be a new trend of women reverting to choosing either the private or the public sphere – children or career – rather than trying to operate successfully in both simultaneously. The choice of one and the exclusion of the other has lead to the loss of the potential satisfactions associated with the foregone choice, which satisfactions may contribute to the living of a self-realizing life. Attempts to combine the two by a variety of different means, however, have usually resulted in negative consequences in terms of economic security, career advancement, and social power.

If women continue to choose motherhood as their main area of self-realization, and average life expectancy remains the same, then there will continue to be an income, and hence power and opportunity, gap between the sexes. The sword which would be able to cut through the Gordian knot of the so-called "time bind", and thus resolve

many of its impasses, comprises Time itself, manifested in the form of a longer potential life expectancy and lifespan than is currently the norm. This would benefit both individuals and society as a whole, contrary to Callahan's argument that living longer would not do so. A longer life expectancy would potentially give rise to the opportunity for women to achieve a greater degree of economic security than is currently generally possible. They would be able to afford – both in terms of economics and time – to take a period of time away from gainful employment in order to devote themselves primarily to children and family, rather than engaging in the exhausting pursuit of career and family simultaneously. Such a separation of tasks, which increasing numbers of women are desiring, as is shown by the opt-out revolution, might in fact "lead to a better family life". Living longer would also allow women, potentially, to engage in the work world more fully than at present, pursuing careers that better represent their aspirations and talents, with resultant overall gains in economic productivity for society. Living longer might also result in greater contributions to science and culture by women, which are currently kept in the lower echelons of these areas due to the diversion of their energies towards children and family. In consequence, women would be enabled to achieve self-realization without sacrificing or stinting on any of the individual elements of a desirable life. This would in turn raise the levels of women's happiness and well being in society, which, as measured in terms of levels of depression, are currently far lower than those for men. Those women who chose to devote their whole life course to bearing children, with or without working outside the home, would also benefit from living in a society in which women had increasingly achieved political and economic power, since this would

hopefully facilitate the enactment of laws which are sensitive to the needs of women and their families, in a way that is not currently the case due to the dearth of women in positions of power.

CHAPTER 4: HUBRIS –

"PLAYING GOD" HAS DANGEROUS CONSEQUENCES.

4.0.**Summary of the Chapter.** In 4.1., I outline the theological and secular positions which allege that the use of biotechnology – but not traditional technology – to change the human condition is intrinsically wrong, and constitutes "playing god". In section 4.2., I discuss some objections to the idea that human life is sacred, and what this means for life extension. In section 4.3., I question the idea that technology is able to be differentiated into the categories of new, unacceptable, biotechnology, and old, acceptable, technology, and also how difficult it is to draw the line between enhancement and non-enhancement technologies. In section 4.4., I argue that both the secular and religious versions of this position attempt to derive normative positions from descriptive facts, which weakens those arguments. In the following sub-sections, I address a number of reasons why it is neither possible nor desirable to ignore the logical gap between what is, and what ought to be, the case in terms of human evolution. In sub-section 4.4.i., I discuss how evolution is neither a teleological nor an optimal process, and could, therefore, be improved upon. In sub-section 4.4.ii., I argue that, since previous interventions in the human lifespan have been brought about by human technological interventions in the past, any future interventions would not be unprecedented, but rather a potentially beneficial continuation of this pattern. In sub-section 4.4.iii., I argue against the conservative position that the existing human lifespan optimizes reproduction, and ought not therefore to be changed. In the sub-sections of 4.5. I address the argument that there would be undesirable consequences

from intervening in the human condition. In sub-section 4.5.i., I argue that "power over" subsequent generations would not necessarily result in dehumanization. In sub-section 4.5.ii., I examine the argument from hubris, and concede that powerful new technologies, biological or otherwise, may indeed be dangerous. However, adhering to the precautionary principle would help to reduce the possibility of undesirable consequences. In section 4.6. I conclude that there is little merit in the argument from 'playing god', but that the argument from hubris merits attention.

4.1. **"Playing god": the sacred and the secular versions of this argument.** There are two related positions involved in the allegation that the use of biotechnology to alter the human condition is intrinsically wrong, *viz.,* a theological position and a secular position. Historically, the use of various kinds of technology, including open heart surgery, blood transfusions, anesthetics in childbirth, and even vaccinations, have been labeled "playing god" when they were first developed, since they altered what would otherwise have ensued in the natural course of things, by reducing pain and suffering, and circumventing or delaying death (Fumuento, 2003). It has come to be used as shorthand to condemn the allegedly immoral expansion of human power through the use of biotechnology, which has the potential to control aspects of nature that allegedly ought not to be under the human purview. The term "playing god" is often used to designate, specifically, the illegitimate use of biotechnologies: "the Frankensteinian hubris to create human life and increasingly to control its destiny; man playing God" (Kass, 2001). The Vatican recently denounced the use of such biotechnologies as one of the new mortal sins:

> the greatest danger zone for the modern soul [is] the largely uncharted world of bioethics, within which "there are areas where we absolutely must denounce some violations of the fundamental rights of human nature through experiments and genetic manipulation whose outcome is difficult to predict and control." (Pullella, 2008, March 10)

This quotation addresses two aspects of the argument from playing god: first, that what has been set in place by god is on that account intrinsically valuable and ought not, therefore, to be changed by deliberate human intervention, and second, the concern that this type of experimentation is unpredictable, and, by implication, fraught with dangerous consequences.

This religious argument has a secular variant, to the effect that Nature, via evolution, is complex and optimally designed, so that ignorant human interventions are likely to be disastrous. Kass (1986) and Somerville (2006) advocate embracing Nature as the human *telos* – contradicting Hume (Hendel, Ed., 1955), they assert that actual states of affairs in nature are able to be used in order to derive moral imperatives. If something factually *is* the case in nature, then it *ought* to be valued, and, conversely, *ought not* to be altered by deliberate human interventions. This includes attempts to bring about radical life extension, to which both writers are opposed. Somerville goes so far as to argue that human beings are the ultimate product of evolution, which process is now, allegedly, at an end.

4.2.**Some problems with the concept of sacredness.** In both the theological and secular versions of the argument from "playing god", the biological human being, even

without self-consciousness, rationality or autonomy, is sacred, constitutes an intrinsically valuable person, due to the possession of a spirit or soul. If this were the case, and human life is intrinsically valuable, regardless of its circumstances or conditions, then this would also mean that human life has an absolute value:

> the value of human life is infinite and beyond measure, so that any part of life – even if only an hour or a second – is of precisely the same worth as seventy years of it, just as any fraction of infinity, being indivisible, remains infinite. (Davis, 2001, Sept., p. 240; cited Jakobovits, 1986)

In this view, a fraction of a nanosecond or less would presumably be enough for a being to become ensouled, and therefore an intrinsically valuable person. This indicates that the value of a life cannot be added to or diminished by the length of lifespan, whether that is three months gestation *in utero,* an hour after birth, or 200 years. Supposing this to be the case, it appears difficult for bioconservatives to argue, therefore, for any *specific* length for the human lifespan.

Some theological writers argue against the idea that despite the fact that human life is sacred, god *requires* human beings to improve upon what has been created in order to better the human condition, including using biotechnology potentially to lengthen life. All interventions in human functioning are therefore potentially legitimate, dependent on whether or not they are beneficial (Rose, 2005; Sherwin, 2007, March).

Moreover, theologian Ted Peters argues that, while god and the human soul are immaterial, DNA does not share this attribute of being a mystical substance. Since it is merely biological material, therefore, human interventions in its structure and

functioning would not trespass on sacred territory (2003). For example, if a leg were gangrenous, then it would be legitimate to use a knife to cut it off to protect the functioning of the rest of the organism. Analagously, if a person's lungs were malfunctioning due to cystic fibrosis, then either a lung transplant, or gene therapy that implanted functioning genes in the lungs, would be a legitimate use of technology.

It does not seem, therefore, that it is possible to make an argument, from the alleged sacredness of human characteristics, as to why they ought not to be changed by deliberate human interventions. This is possibly why conservatives go on to postulate the intrinsic value of the "given", whether by god or nature, in terms of lifespan and other human attributes.

4.3. **Some problems associated with trying to differentiate between the concepts of technology and biotechnology; non-enhancement and enhancement:** The word "biotechnology" has been called "a new term for our age" and is narrowly defined as consisting in applied biological science, especially that used in genetic engineering and recombinant DNA technology. It also includes "any industrially developed, useful agent that can alter the workings of the body or mind." Broadly, it is "a form of human empowerment" that constitutes the desire to ultimately "control the events and workings of nature, all pursued for the sake of human benefit" (Kass, 2003). An alliance of left and right-wing writers and environmentalists, together with some social conservatives, share a distrust of increasing human powers over nature by its use (Bailey, 2005). Critics argue that it is qualitatively and ethically different from

previous technologies because it would be able to change the biological basis of personhood, and perhaps the human spirit or soul itself. These new kinds of technology ought not, therefore to be developed or used (Callahan, 1993; Kass, 2001).

However, there is a difficulty in drawing a meaningful line between supposedly "new" and hence unacceptable technology, and "old" technology that is acceptable to moderate conservatives and their ilk. This renders the use of the term both unhelpful, and even misleading. There are traditional and widely accepted biotechnologies, notably fermentation, that is used to bake bread and brew beer, and plant and animal hybridization (Kass, 2003). Moreover, traditional technologies are able to alter the expression of genes, although without excising, introducing, or physically altering them. For example, the single gene mutation responsible for progeria – an accelerated aging disease that causes afflicted children to "have the appearance of seventy year olds at the age of nine", and suffer heart attacks and strokes at the age of six or younger – is now known, and FTI drugs developed for treating cancer are being used successfully, to suppress metabolic pathways in order to prevent the development of the symptoms, and therefore increase life expectancy (Benecke, 2002; Michaelis, 2005, Sept.). This class of drugs are not generally regarded as constituting biotechnology, yet their use affects life expectancy, as do many other "traditional" drugs and procedures, including antibiotics, when they cure or remediate diseases. Restricting caloric intake, for example, has been found to slow both aging and deterioration to a considerable degree, in rats and primates, and some scientists are conducting research to develop a drug that produces the effect in pill form for humans, without the requirement for starvation (Rose, 2005). Classifying technology as being

"traditional" or its antithesis, "biotechnological" because of its effect on life expectancy is, therefore, a vague distinction, and constitutes a flaw in the moderate conservative argument concerning the need for a moratorium on the use of biotechnology. To be consistent, they would have to argue that human interventions which prevent illness or death, including widely accepted, non-genetic interventions such as cardiopulmonary resuscitation, diabetes drugs, vaccinations, etc., ought not to be used. However, moderate conservatives balk at the idea that it would be morally necessary to relinquish *all* technology, in order to avoid the use of biotechnology, since they recognize the benefits of many technologies. Kass (1985), admitted that, before the advent of a reasonable degree of control over the environment, "life was simply impossible", and McKibbon (2003), and Fukuyama (2002, Winter), were willing to accept pre-implantation analysis and discarding of embryos with serious genetic diseases.

Another problem with the conservative view concerning categories of technology, biotechnological or traditional, is that many moderate conservatives regard its use as legitimate if this is done in order to restore normal functioning, where "normal" is defined as average. For example, this would involve raising the life expectancy of those with progeria to about age 80, instead of 13 – but not to "enhance" functioning beyond the average. However, by allowing more and more individuals to reach the average, the average itself would change, and become steadily higher over time, making it difficult to distinguish between what does or does not constitute an enhancement (Parens, 1998, Jan/Feb.).

Technologies ought, therefore, to be viewed from the perspective of whether they are effective, safe and beneficial, as I will discuss, rather than their membership in an indefensibly vague and arbitrary category.

4.4. **Some problems with committing the fallacy of the fact/value distinction.** In the religious version of the "playing god" argument, only the natural is good, because god created it thus. Since the new biotechnology – but not traditional technology – is unnatural, its use is unacceptable. In the secular version, the natural is good because it has been produced by evolution, but biotechnology – as opposed to traditional technology – interferes with evolution, therefore its use is unacceptable. This means that deliberate attempts to alter significant human characteristics by the use of biotechnology – characteristics such as maximum lifespan, for example, but not necessarily average life expectancy – are dehumanizing and hence immoral (McKibbon, 2003).

These arguments commit the fallacy of attempting to derive normative positions from descriptive facts. There are good reasons why an "is" cannot give rise to an "ought", despite the neo-Aristotelian argument that value does not stand in opposition to facts (Anscombe, 1981). As Hume noted, there is a logical gap between the facts of the matter, i.e. that the natural world exists in a particular mode, and an evaluation of those facts, i.e. the natural world as it currently exists is valuable. This state of affairs does not mean, therefore, that the facts of the natural world ought not to be changed, and there are a number of good reasons why this is not, and has never been the case, for human beings and the attendant human lifespan (1955).

i. **Evolution could be improved upon.** Those who embrace the idea that an "ought" can be derived from an is, view nature as having a *telos,* i.e. human beings as they are currently instantiated, whose existence has been brought about by the process of evolution. However, evolution could be improved upon. Natural selection is a mechanism that operates on materials which already exist, and fashions them afresh, perhaps for a new purpose – for example, whales' ancestors were land dwellers, and their fins evolved from limbs. It does this via chance and random mutations (Marcus, 2008). Evolution occurs in straight lines, building on what has gone before, such that:

> many organismal adaptations appear jury-rigged rather than intelligently designed. The historicity of evolution dictates that natural selection fashions outcomes only from preexisting biological fabrics that in turn had idiosyncratic historical antecedents...humans have their share of phylogenetic legacies that constrain adaptations far short of designer perfection. (Avise, 1998, p. 16)

Examples of human characteristics that could conceivably be improved upon includes the close proximity of the esophagus and the trachea, which makes the possibility of choking on inhaled food a real danger. The digestive and respiratory systems of insects and molluscs do not display this flaw, and are entirely separate, but the vertebrate ancestor was an aquatic creature whose mouth had evolved to serve both for feeding and oxygen extraction, and humanity continues to bear this inefficient legacy. Other "maladaptive legacies" include the human appendix, which has no function, but which is prone to fatal rupture; a lack of a reserve second heart, which is not paired, unlike our lungs, eyes, kidneys, and opposable thumbs; a narrow birth canal that has difficulty accommodating the large skull of human infants; and back problems resultant on

bipedalism. The structure of the human spine is weak, and prone to damage, because it had to adapt from walking on all fours, to an upright stance, which has lead to a predisposition to chronic vertebral problems in human beings (Avise, 1998, pp. 17-18;cited Morgan, 1994). Increasing the existing human lifespan would arguably be an improvement upon that which has been provided by the process of evolution.

ii.**Past human interventions in the lifespan.** The "unprecedented" interventions potentially made possible by recent developments in biotechnology are merely an extension of what human beings have always done, i.e. modify the environment to improve their lot, which many would regard as being a legitimate and praiseworthy arena for human activity. Indeed, technology has been instrumental in the evolution of human beings, and human nature itself (Caplan, 2004). The oldest primitive tools that have been found were made two and a half million years ago, in what is now Ethiopia, by the human ancestor *homo Habilis*. Tools, quite literally, gave a cutting edge to human evolution, and supplanted natural processes as the main cause of biological changes (Marcus, 2008). The development of tools meant greater adeptness at hunting and the preparation of food, clothing, and shelter, which lead to better nutrition, which lead to an increase in brain size, which is associated with a longer lifespan. These changes in turn lead to the development of better tools, and the cycle would repeat itself (Marcus, 2008). As part of this cycle, some 600,000 years ago, *homo erectus* discovered how to produce and control fire, which made cooking possible. Recent research suggests that the development of the human jaw and vocal chords, which are different from those of other primates, was facilitated by this. Preparing food by using tools to grind it, and then cooking over the fire, made it softer,

and therefore easier to chew and digest. This allowed for the massive jaw muscles and large molar teeth necessary for eating raw food, which are characteristic of primates, to be dispensed with. This had two results: first, the bones of the skull, which are the anchor point for the muscles, could become lighter, which allowed room for the brain to expand; and second, the absence of large teeth allowed for changes in the shape of the mouth and larnyx, which in turn gave more room for the vocal chords to develop, thus allowing human speech. (Modern primates who have been taught language cannot utter words, because of the less sophisticated development of their pharynx and vocal chords, and have to use signs to communicate.) Cooking also allowed for better digestion of food, especially proteins, which in turn contributed to the development of a larger, more powerful, brain, and thus, the evolution of *homo sapiens* (Townsend, 2005; Wrangham, et al. 2003).

These are profound physical changes in human anatomy and functioning that were brought about by the use of technology to shape and control the environment, which in turn lead to the evolution of modern human beings. Human biology, physiology, lifespan, and brain capacity all evolved in consequence of the actions of proto-human ancestors. It is interesting to note that a quadrupling increase in human lifespan occurred at around 30,000 BC, and was accompanied by both "increased reproductive success", and a "creative explosion" that included a significant increase in both the number and sophistication of cave paintings. This is an indication that living longer has, in the past, been associated with advances in human culture and civilization, which themselves have promoted the living of lives with additional scope, i.e. beyond mere survival, constantly at the mercy of nature (Caspari & Lee, 2005). This provides

support for my argument that, in the future, should lifespan prove amenable to further increase, there would likely be similar beneficial effects in terms of self-realization for individuals.

The power that is prospectively being wielded to change the human blueprint is therefore neither unprecedented nor necessarily undesirable. The human gene pool has also been altered over the millennia "through wars, selective mating, better diet and the evolution of medicine." Directly influencing gene expression, or engineering genes themselves, would therefore be "a difference in degree rather than in kind of treatment" (Caplan, 1995, Sept., p. 142). Even without deliberate human intervention, evolution will continue to take place in the human species, contrary to Somerville's (2006) argument that humanity represents the pinnacle of natural selection. This will be random, however, and most mutations will prove fatal to the individual carrying them.

What would be different about the changes that may be brought about by direct human intervention is that they would be deliberate, rather than random, and rapid, rather than spread over eons. The speed of changes might pose moral problems. If research is hurried and therefore slipshod, then human survival itself might be threatened, but this argument falls within the province of my next section on the potential dangers of research. Very swift social changes might also be problematic, but this risk of harm must be weighed against the benefits to individuals of living longer lives. The fact that the proposed changes would be deliberately brought about is where the accusation of playing god is relevant, but as has already been established above, all such human actions designed to improve the lot of humanity and shield it

from the forces of Nature are playing god, but are not to be censured on that account alone.

iii. **There are differing reproductive strategies in terms of lifespan.** One of the arguments made by conservatives with respect to the length of the human lifespan is that it optimizes reproduction, and ought, therefore, not to be altered:

> life is a double edged sword. Reproduction generates the new bodies needed to survive in a hostile environment, and death is the way nature discards the old, worn-out bodies....the idea that individuals are disposable once their reproductive role has been accomplished remains a cornerstone of modern theories on the evolution of aging. (Olshansky & Carnes, 2002, pp. 57-8)

The evolutionary theory of ageing attempts to explain why species have different lifespans, based on the premise that the purpose of individual members of a species is to perpetuate that species. Benecke argues that radical life extension would not confer any adaptive advantage, moreover, without death, evolution would cease to take place (2002).

It is true that there is a sharp differentiation in potential lifespans between species that engage in asexual and sexual reproduction. Bacteria species, for example, reproduce asexually, producing identical daughters that are potentially immortal – it is believed that some bacteria in existence today are tens of thousands of years old (Bova, 2000). Species that engage in sexual reproduction produce non-identical offspring, which have, therefore, a greater chance of survival should environmental circumstances alter. However, this results in the loss of potential immortality: sex equals death as a

reproductive strategy. The process of reproduction also diverts resources to the production of offspring, thus reducing the life expectancy of the individual:

> diverting resources away from reproducing...in order to create an immortal [body] is genetic suicide. The risk of death for our ancestors was exceedingly high very early in life. In such a hostile world, unrepaired damage to the soma cannot be avoided. Even if attainable the resource costs required to create and maintain a perfect soma would be prohibitive....[we] are expendable. Death is the price we pay for the immortality of our genes. (Olshansky & Carnes, 2002, pp. 50-79)

However, while death is inevitable for all species engaging in sexual reproduction, there are significant differences in terms of lifespan between species that reproduce sexually, even where they have similar reproductive strategies or lifestyles. These differences are arbitrary, since they were caused by random genetic mutations. The length of the human lifespan could, therefore, conceivably have been different from at present, without compromising reproductive success. The mayfly, for example, lives but a day, and has, in consequence, no mouth or digestive apparatus because it does not live long enough to need them (Engel & Grimaldi, 2005). Living specimens of the humble arctic clam, which is the longest living creature on earth so far discovered, lives to over 400 years (Bangor University, 2007). The lifespans of these two species differ strikingly, yet both engage in sexual reproduction and produce fertilized eggs that hatch and develop into adults independently, with no input from parents. The bowhead whale has a similar reproductive strategy, and lifestyle, to that of human beings, a fellow mammal. Mothers of both species give birth to live young and nurse them for a

number of years, raising them in a group environment until they are mature and independent. However, bowhead whales have a lifespan of over 200 years, which is more than twice that of human beings (Fumento, 2003). It is unclear why this should necessarily be the case, if lifespans are crucially linked to reproductive strategy. It may therefore be argued that the human lifespan is itself a flawed artifact resulting from the random nature of evolution. Even within the parameters of reproductive fitness, therefore, there would seem, potentially, to be differing possible lifespans, some of which might be viewed as more optimal than others in terms of individual flourishing, while reproductive success remains unaffected.

4.5. **The arguments from undesirable consequences.**

i. **The consequences of "power over" would not necessarily be dehumanizing.** In accordance with the tenets of anarcho-primitivism, which has extreme views on the undesirability of the use of technology for improving the human condition, C. S. Lewis (1947), has argued that the much vaunted "mastery of nature" is actually "power exercised by some men over others, with nature as its instrument." Biotechnology, he argued, would be an even more effective way of enslaving human beings than were less potent technologies, via genetic manipulations that would cause future generations to be "subjects of a power wielded by those already alive" (p. 11). McKibbon (2003) has postulated that changing the genomes of future generations, even if this were limited to advantageous physical and mental characteristics, such as a genetic predisposition to a healthy weight, or the capacity for a variety of desirable talents and aptitudes, would be akin to "manufacturing" genetically programmed

"robots" by means of "a purchased code that will pump out proteins designed to change" their offspring, who would therefore be unable to have a sense of themselves as unique, free, individuals. Under these circumstances, he argues, it would not be possible for an individual to live a meaningful life, because this often involves battling against hardships to reach a difficult goal. Both the desire itself, and the performance, would be held in suspicion by the individual concerned, tormented by the question of whether these are authentic expressions of their own identity, or the result of preprogrammed, and therefore allegedly valueless, movements of "catalogue proteins"(p. 47 ff.). He regards the suffering of those afflicted with serious genetic diseases as unfortunate, since he admits that they *would* likely benefit from somatic gene therapy, but this would set in motion a slippery slope of increasingly unjustifiable genetic interventions, that would result in the commodification of persons. His solution is that suffering ought, therefore, to be embraced as an opportunity for character development. For example, he relates the story of his childhood friend Kathy, who died aged 15 of cystic fibrosis. She was "one of the happiest and kindest people I've ever known, the sort of person who makes everyone around her happier and kinder", and implied that she would not have been such a fine person if she had been cured by genetic medicine, because "her goodness, her kindness, [would not] mean what they did" (132 ff.).

Previous generations, by their actions, have wielded power over their descendants, as will we. However, I would argue that, in many cases throughout history, the power to influence future generations has brought about liberation rather than enslavement. This has proved to be the case, whether arising from genuine

concern for the welfare of fellow human beings, as for example was the case with the 18th and 19th century movement to abolish slavery, or, conversely, even where the original motives of the protagonists may not have been entirely altruistic, as with the movement to educate and improve the health of the 19th Century industrial proletariat, in order to produce more effective, and pliable, employees for the increasingly sophisticated industrial workplace, and a better quality of soldier to fight for the defence of the British Empire (Lindert & Williamson, 1983, Feb.). Institutions and technologies, including universal education and healthcare, have shaped the physical and mental stature of succeeding generations for the better – both height and intelligence, as measured by IQ tests, for example, increased considerably in developed nations over the course of the 20th century (Blair, Gamson, Thore, & Baker, 2003; Pinker, Kanaya, Scullin & Ceci, 2004, Fall). These changes have benefitted individuals, and also enabled social and political improvements undreamed of by their original promoters.

McKibbon's view of the value of suffering is simply cruel. Making the lives of those suffering from such diseases better is part of the moral imperative guiding medicine and science (Beauchamp & Childress, 2001). If suffering is, indeed, character building – which it may be, to some extent, arguably building perseverance and patience – then the opportunities for it in an ordinary life are quite sufficient, without adding an increasing inability to breathe and early death, as was the case for Kathy. It would be wrong to deny a person treatment on the basis of vague fears concerning a slippery slope of ever more that is, firstly, possibly preventable, and secondly, whose consequences, even if realized, are vague. Caplan (2004), argued that

the choice of: "objectified or commodified visions is not an inevitable result of biomedical progress." Their availability would be the result of "social and political choices, not scientific advances". Moreover, he goes on, those who have benefitted from biomedical progress so far do not seem to have paid the terrible price of "the loss of authentic happiness, the loss of what makes life meaningful" and suffer low self-esteem because they were born through in vitro fertilization, or use hearing aids or prosthetic limbs (p. 1142).

Having influence over future generations by wielding power in the present, therefore, is not necessarily immoral, particularly if safeguards are in place as to precisely what influences are sought, as I will discuss.

ii.The danger of hubris. The real issue to be addressed concerning biotechnologies is not whether scientists are overstepping their role by using them, but rather if they are doing so with a degree of humility that allows for due caution and forethought. This means that this version of the "playing god" argument actually collapses into the safety argument, which is important and may be decisive. Anarcho-primitivists and some moderate conservatives do not believe that safety concerns are the main issue as to why biotechnologies ought not to be used, while post or trans-humanists tend to dismiss the idea that there is a need for further regulation than already exists (Hughes, 2004; Kurzweil, 2005; Rothman & Rothman, 2003; Russo & Cove, 1998). Moderate liberals such as myself are, however, cautiously optimistic about the promised benefits of the new technology, but argue that the precautionary principle needs to be adhered to, such that even the fairly remote likelihood of particular risks ought to be considered as decisive against the use of a given

biotechnology, when devastating harm would be the consequence should those risks be actualized (Andorno, 2004; Raffensberger & Tickner, 1999). This, together with "careful regulation, legislation and societal consensus" (Caplan, 1995, Sept., p. 143), will probably be necessary to ensure the safe use of powerful new biotechnologies.

McKibbon argues that moral concerns about "playing god" ought not to be reduced to safety concerns, but it is a vague term, capable of many interpretations, and which:

> is not found in standard theological dictionaries....The phrase...has very little cognitive value when looked at from the perspective of a theologian. Its primary role is that of a warning, such as the word "stop". (Peters, 2003, p. 2)

As discussed above, this is perhaps why, when early concerns about genetic engineering and "playing god" were addressed by President Carter's ethics committee in the 1970's:

> in draft after draft of their report they kept reducing the moral questions to technical ones. "Playing God" was too vague; it was translated as "acting without knowing the consequences, taking risks." So the response was to control risks – to put more filters in the lab's safety hoods; to write better informed consent forms. The moral dilemma became somehow manageable. (McKibbon, 2003, p. 186; cited Rothman, 1998)

Elliott (2003), doubts that humanity is equipped to display wisdom with regard to the development and use of technology, due to the prevalence of hubris, particularly in North America, which is, in his view, simultaneously very advanced scientifically yet lacking in self-knowledge about where long-term self interest lies. However, it is not

clear that hubris is the primary motivating force, either for scientists or science itself. Beneficence may be the motivation rather than a desire to fulfill the egotistic and grandiose schemes of particular individuals. A desire to change the status quo, therefore, is not sufficient to warrant a charge of hubris. (This leaves open the possibility that the motivation might be well meaning, but still result in disaster, of course.)

Bronowski (1956, cited in Shattuck, 1996) argued that the discipline of science itself fosters the development of sound values, including self knowledge. Properly practiced science requires the exercise of reason, self-discipline, hard work, and attention to detail, usually in a group setting, in order to be successful. Taken together, these factors, it is argued, militate against the character failing of hubris. Scientists, however, like everyone else, may have mixed motivations, and together with the desire to do good, there is usually a legitimate desire for career success, that may burgeon in a particular individual, into a lust for fame, wealth, and power that oversteps the bounds of safety and good science, and thus render them liable to the charge of hubris. It is also possible that an individual's motives may be praiseworthy, but allied with a lack of understanding, or heedlessness, as to consequences.

As a case in point, it was fears about a proposed experiment involving genetically altered viruses that was the trigger for a group of scientists to call for a moratorium on genetic research in the 1970's – the individual scientists about to carry out the research were totally unconcerned about a potentially lethal pandemic should the altered virus escape from the lab, into an outside world with no immunities against it. If the scientific community at large had not serendipitously become aware of the

proposed experiment and taken urgent steps to stop it, then it would have gone ahead, with potentially devastating consequences (Shattuck, 1996; cited Watson & Tooze, 1982). A fear of hubris was evident in the letters to *Science* of Irwin Chargaff, a biochemist, who was concerned to restrain the "ambition and curiosity of a few scientists" (1976, p. 938; cited by Kolata, 1998), while Philip Siekevitz, a biologist, spoke of:

> that sin which the Greeks held to be one of the greatest, that of overweening pride....it behooves all of us biologists to think very carefully....before we plunge ahead into the darkness. (1976, p. 257; cited by Kolata, 1998)

The Asilomar II conference report in 1975 passed a motion that there were "feasible experiments which present such serious dangers that their performance should not be undertaken at this time" (Kolata, 1998, pp. 188-9). Legal advisors at the conference proposed that decisions about experiments which were potentially hazardous should include input from laboratory workers, together with "the surrounding community, the public, and such existing government agencies as the Occupational Safety and Health Administration and the National Institutes of Health" rather than the scientists alone. The freedom of inquiry which is the basis of science did not include, it was stated, "the freedom to do harm", and scientists themselves should be held personally liable for negligence (Kolata, 1998, p. 191).

This series of events was remarkable for the self-regulatory behaviour exhibited by the scientific community at large, which Shattuck argues was primarily driven by prudential and legal considerations, although "ethical and humanitarian considerations" were also "invoked many times" during the conference (1996, pp. 189,

192). However, the potential dangers involved suggests that the self-regulation of science, in the manner of medicine or law, is insufficient for ethics or safety. There needs to be layers of protection against the dangers of hubris over and above this. Government regulation is also a necessary additional layer, and the European Commission [EC] has instructed its policy makers to adhere to the precautionary principle, i.e. not approving particular experiments or research when:

> preliminary objective scientific evaluation indicates that there are reasonable grounds for concern that the potentially dangerous effects on the environment, human, animal or plant health may be inconsistent with the high level of protection chosen for the [European] community. (Wynne & Felt, 2007, p. 37)

Wynne and Felt go on to urge a more rigorous use of the precautionary principle than this, to not only include risk management by government policy makers overseeing scientists, but also by scientists themselves when framing "practical epistemic criteria and interpretive judgements" (2007, p. 38). The EC's "staunch resolve" to prioritize safety concerns has led to the EU being:

> misrepresented...not least by the US State Department, as expressing an allegedly anti-science culture. (Wynne & Felt, 2007, pp. 36-7)

In this vein, post-humanists such as Hughes argue that existing regulatory agencies are sufficient to test and regulate human enhancement technologies, because "the sole purpose of new agencies would be to ban technology on the basis of vague and spurious anxieties". The adoption of the precautionary principle, he argues, would result in the unneccessary deaths of many thousands of people waiting endlessly for

enhancement technologies that might extend their lives or cure their diseases, to be approved (2004, xix, xx).

This might be the case, and there are difficulties involved in defining what constitutes "objective science", and "reasonable grounds for concern", as per the European version of the precautionary principle. Besides, in 1976, the scientists themselves, as was later realized, did overestimate the potential dangers of the technology (Hughes, 2004, pp. 189, 195). This does detract from the charges of hubris and endangerment on the part of science and scientists leveled by those opposed to genetic research, but it is not unthinkable that individual scientists might transgress ethical and safety guidelines, as were the original experimenters who gave rise to the incident. Moreover, Hughes misrepresents the precautionary principle as exemplifying a "Catch-22" scenario, whereby technology ought not to be used until *all* of the consequences are fully understood, but it is, of course, impossible to understand all of the consequences of technology until it is used (2004, xxi). While the pace of the adoption of new technologies might be slower than in the event that there was no regulation, it would not be required that *all* possible risks were foreseen and assessed in advance – which is clearly impossible – but only those which would potentially be very serious. Given the potential power of the new biotechnologies, it is both prudentially and morally required to limit their use if there is a risk of serious harm, as with any other medical technology. It is also the case that governments and their policy makers are also prone to being influenced by powerful corporate and pharmaceutical interests to overlook safety concerns. Despite the assertion by the president and chief scientific officer of Incyte Pharmaceuticals that genomics and

genetics ought to be used accordance with the Hippocratic Oath: "first to do no harm, and second to solve disease," there are numerous examples of where the desire to expedite the distribution of profitable drugs has overridden this principle (Caplan, 1999). Many scientists also have close financial ties to the pharmaceutical industry, which may affect their decision-making and risk assessment, even unwittingly (Cosgrove et al., 2006). This is one of the reasons why public scrutiny in the decision making process concerning which technologies are ethical and safe to use, is necessary in order to buttress the decisions of scientists, government and policy makers, contrary to Hughes' more sanguine attitude.

Caplan argues, however, that public ignorance is such that meaningful involvement would not currently be possible. Nevertheless, he suggests undertaking a massive public education effort in order to overcome the widespread general ignorance concerning new techniques in science:

> we must create education forums – legislative hearings, town meetings, interactive Web sites, high school assemblies, book groups, radio discussions, television programs, and newspaper articles – about biotechnology and where it could take us. (1999, p. 83)

This type of in-depth, informed debate seems to be already more of a reality in Europe, as witness the recent widely-covered debate between Habermas and Sloterdijk on the "moral standing of anthropotechniques" (Mauron, 2005, S69).

Should a particular technology or procedure not be deemed ethical, or safe, to use, some authors have argued that it would nonetheless be impossible to ban its use because of its very nature. How would it be possible to detect if someone had gene

therapy abroad, for example? And if offspring were genetically altered by parents before they were born, and this was subsequently detected, would the offspring be punished? (Baylis & Robert, 2004). Others have argued that, while it would be difficult to do so, it would not be impossible. Research and development into genetic engineering could be policed, regulated, and enforced in the same way that other banned medical procedures currently are, meaning that it could not become widespread within society (Mehlman, 2003; Fukuyama, 2002, Winter).

The potential benefits and hazards of new technologies ought to be constantly debated by an informed public, together with the wisdom of utilizing them. The public response to new medical techniques and technology is often a combination of scepticism and fear, as is currently the case, notably, in Europe (Wynne, 2006). Kass (1997) terms this "the wisdom of repugnance", in the article of the same name. He advocates that such a non-verbal, non-reasoning response be regarded as an intuitive and wise response to new phenomena that ought to be heeded, since it has evolved as a protective process. I would agree that suspicion of new technology is a useful safety mechanism that guards humanity from both the dangers of hubris, since it leads to the requirement that scientists justify their research and purposes in the public arena, and the technological imperative that what can be done, ought to be done, so beloved of technophiles. The initial visceral response, however, ought to be just that – a moral "taking under advisement" that is subject to further review once more information is obtained, and a reasoned approach is able to be added to the visceral one. If a technology such as organ transplantation subsequently becomes widely accepted after an initial repugnance, then this should not be regarded as a sign that the public has

merely become inured or desensitized to it, and simply "does not know when to scream", as Kass has argued in testimony before the National Bioethics Advisory Commission, in 1997 (Kolata, 1998, p. 20). I would argue, rather, that acceptance is often a recognition that the benefits, when adequately assessed over a period of time, clearly outweigh anticipated negatives.

4.6. **Conclusion:** I conclude that most of these arguments are overstated and therefore generally unpersuasive, which means that many of the objections to prolongevism are weakened and shown to be lacking in cogency. "Playing god" is another aspect of the morally required, natural human effort to improve health and living conditions. This characteristic was evident even in proto-human ancestors, who initiated technological innovations that caused *Homo sapiens* to be brought into existence. Attempts to derive a "sacred secular" that gives value to what exists in Nature, with a corresponding duty not to fundamentally alter it by human interventions, fails because this relies on the process of evolution, which is a directionless, random, amoral force, that does not always produce the best possible outcome in terms of adaptations. Moreover, it is difficult to categorize technology as being traditional, and therefore legitimate, or biotechnological and therefore illegitimate, since traditional technology is also capable of having an effect on genes and their expression. Taken together, these counterarguments cause the argument from "playing god" to collapse into concerns about the dangers of a given technology, and the postulated lack of ability of human beings, in contrast to god, to forsee and curtail negative consequences. Science – and scientists – therefore, are not necessarily hubristic when they pursue prolongevism,

although in so doing, they do "play god". The challenge is to recognize that while we may play god:

> we cannot *be* god...being finite we must always proceed on the basis of incomplete knowledge, hypotheses, and beliefs. However, the fact that we do not have total knowledge does not release us from the obligation...to make decisions which we formerly left to God. (Augenstein, 1969, p. 142)

A degree of humility is necessary, in the face of acknowledged limitations, but it would not be in human best interests to abandon science and technology altogether, as would be necessary if human beings were to cease playing god, nor can the prospective new biotechnologies be relinquished merely because they are claimed to be – and this is arguable – different in kind to old technologies. While some are more powerful than anything that has gone before, they are not different, and must be assessed, therefore, as are current technologies, on their effectiveness and safety. This is a serious concern, and the precautionary principle may need to be invoked in order to avoid possible damaging consequences, together with appropriate regulative measures governing research and development, and the increased involvement and engagement of a concerned and educated public. Hopefully, this will prove sufficient to allow potential negative consequences to be prevented, mitigated, or remedied, while allowing the benefits of prolongevism to be enjoyed to whatever degree is safe. Hopefully, this would allow humans to "control technology rather than be controlled, and...defined by it" (Newman, 2003, p. 463).

CHAPTER 5: PROLONGEVISM AS PATHOLOGY.

5.0. **Summary of the Chapter.** In section 5.1., I outline the position that the desire for a longer life than is typical of the natural human lifespan is misguided, even pathological, and constitutes a symptom that the person having the desire is not living well. As evidence of this, Japanese women do not desire to live longer, because they live in a culture that embraces every life stage fully. Conversely, North American do want to live longer, because they live in a pathological culture that embraces narcissistic, youth worshipping, individualism. In section 5.2. as a whole I discuss a number of objections to this position, commencing with section 5.2.i., that life stages have shown themselves to be capable of being both extended and added to, as well as revisited. In section 5.2.ii., I object that many – male – eminent philosophers and scientists have desired to live longer, without this being attributable to pathology and narcissism. In section 5.2. iii., I note that Japanese society is not reported to be particularly happy or fulfilled, which more probably explains the lack of desire for living longer, than does an allegation of right living. In section 5.2., iv. I argue that the Buddhist religion, with its emphasis on giving up desires worldly goods, is prevalent in Japan and may explain why the desire for a longer life is not widespread. In section 5.2.v., I discuss how the "finely tuned sensitivity" to others needs and expectations may also have affected the Japanese womens' responses. In section 5.3., I conclude that Elliott's case as to the undesirability, in principle, of radical life extension is not, for these reasons, persuasive.

5.1. **The alleged undesirability of radical life extension.** The desire for a longer life has been categorized as misguided, even pathological, signifying as it does that the

person holding it is probably not living well, by a number of conservative writers, including Elliot (2003), Kass (2003), Callahan (1993), and Lucretius (Leonard, trans., 2004/1921). Those who hold this view typically argue that life has an optimal arc that allows for the adequate development of human capacities at each formative stage of life, consisting in growth, a peak of maturity corresponding to reproduction and raising offspring, then a gradual decline. This arc, it is held, corresponds to the current average life expectancy of about 80 years in the developed world at the beginning of the 21st century (Kass, 2003; Somerville, 2006). This is slightly more than the Biblical 'three score years and ten', but the diminished health of further years predicted in the rest of the verse (Psalm 90:10), has been somewhat ameliorated due to modern medicine and technology, together with clean water, safer working conditions, etc., so that it is reasonable for many to expect to live somewhat active and rewarding lives for about this length of time. It is implied that the psychological stages of life, in common with the physiological stages of life, are finite, and capable of full development in a life expectancy of about 80 years: it is "Enough" (McKibbon, 2003; Callahan, 1993).

Given this optimal framework, then, to desire more, in terms of life expectancy, is a misapprehension, on the part of the person who desires it, as to what is in his or her best interests in terms of living the best and most satisfying life for a human being. Elliott (2003), claimed that this misapprehension derived in part from the social norms of North American society, which emphasize individual flourishing as a goal, and regard lives as being "projects". On this view, enhancement technologies are embraced as being "tools to produce a better, more successful project". However, he argued that, generally, people do not know what the purpose of the project is, and are perpetually

confused about its nature because they are told that they have to find their "own individual purpose and develop it to its fullest", without knowing where their life choices should be anchored, given the fluid, subjective nature of the post-modernist philosophy which imbues society (pp. 299-300). In these circumstances, individuals might make choices that are whimsical but self-destructive, as witness the apotemnophiliacs who believe themselves to be inauthentic, or untrue to themselves, unless they have various portions of their anatomy surgically removed. Elliott commented that it was not surprising that "these people...used the language of identity and selfhood...to describe what they felt', for example, that amputation was a means of "becoming myself", because current North American society stresses just these attributes and attitudes. Individuals are urged to discover what is valuable in life, by "looking inside yourself" (2003, pp. 174, 212). The desire for amputation is a psychopathology that seems to be actually becoming more common, and he argued that this was perhaps because present historical and cultural conditions have not just revealed existing, hidden desires, but also actively created them, in a kind of "semantic contagion", such that "publicly identifying and describing a condition creates the means by which that condition spreads" (2003, pp. 230-1; cited Hacking, 1995, 1998). The implication is that a desire for radical life extension is just as perverse, and that both of these phenomena constitute an unrestrained and self-destructive individualism in pursuit of evanescent and illusory goals.

He argued that, in addition to this, in modern North American society pitfalls are liberally strewn in the path of would-be seekers after fulfillment, in the shape of rampant consumerism, the "tyranny of happiness" that results in a desperate seeking for

self-fulfillment, and most pernicious of all, a "culture of youth" that induced the fear of aging by denying the value of any life stages that occur once youthful attractiveness diminishes. Elliott's message is that North Americans have no idea how to live well, and in this "society of alienation", more years of life "would simply produce longer, more alienated lives". Given the chance to live longer, most people would only make different mistakes, rather than live better lives. The desire for prolongevism, together with other enhancements, is, therefore, "self-destructive, unhealthy, paranoid, or perverse" (2003, pp. 103-7; 284-5; 304).

Elliott contrasted this with Japanese culture, where community and consensus take precedence over individual desires. This has resulted in a very egalitarian income distribution, and "more equal societies, with smaller income differences between rich and poor [tend] to have better health". This means that, by the end of the 1980's, "after a long period of narrowing income differences", Japan had achieved "the highest life expectancy in the world" (Wilkinson, 2001, pp. 11-14). Elliott (2003) presented the findings of anthropologist Margaret Lock, who compared attitudes towards aging in women aged from forty-five to fifty-five years, in Japan, Canada, and the United States. She concluded that Japanese women did "not wish for lives nearly as long as those that North American women wish for themselves", and that:

> some Japanese women even look forward to ageing, [since] to get older in Japan is to advance in a social hierarchy, and this advancement is accompanied by more responsibility and greater maturity. (1993, pp. 205, 216, 378, 396)

Lock thought it significant that Japanese women lived in a culture which offered positive benefits in the sense of increased respect as they advanced in age and the social hierarchy, which had the consequence that they did not dread aging. They were continuing to grow as human beings, and would probably complete the developmental tasks required by human psychology by the end of their lives. By contrast, Elliott noted, in western cultures, and especially for women, to reach middle age was seen as "the beginning of a slow, downward decline into old age" (2003, p. 283). The loss of fertility, and sexual attractiveness, in a society where normality for women was defined in terms of physical beauty and reproductive capacity, translated into a self-image of abnormality. This was, in other words, an ageism that was especially pernicious to women. Elliott argued that, absent the "culture of youth" that caused women to "quail at the first wrinkle" (2003, p. 205; cited Mannes, 1964), women would not fear or dread ageing, nor would they attempt to defer or eliminate it by the use of various current and future enhancement technologies, but would rather welcome it in the way that Japanese women did. This represented a moral failure of society, with the reconstruction of moral and spiritual guidelines concerning the acceptance of ageing being the preferred solution, rather than a medical one that prolonged the period of fertility and physical attractiveness. (He also assumed that the findings of the study of women in both societies were able to be generalized to include males in both societies.)

Elliott argued that these two phenomena, the absence of fear of ageing, and the absence of a desire for a longer life, are related, and concluded that a wish for prolongevism indicated that there was something wrong with the life that was currently being lived by the individual who desired to live longer. If a person was living a life

that adequately developed all of its stages, within a caring social structure that restrained certain whimsical and possibly destructive desires for the good of the individual and society, then that person would neither need nor desire a life that was longer than the average life expectancy of advanced industrial democracies (2003; cited Lock, 1993, 216, 378, 396).

The implication of Elliott's argument is that it is not possible to attempt simply to merge the attitudes of the two cultures and come up with an optimum solution, i.e. combining a deceptively youthful appearance with a rigorously developed, mature character. The desire for, and pursuit of, the former eliminates the possibility of achieving the latter. The two goals are mutually exclusive, leading people down divergent roads, and the one that is chosen reveals much about the person concerned. Japanese women are deeply secure in their valued role as elders, and as a result they are uninterested in attempts superficially to retard ageing. Women who want artificially to retain the appearance – and the behaviour and the inferior social position associated with it – of youthful sexual attractiveness to men, will not be able to make the intellectual and moral transition to being fully a person in their own right. They will remain lost souls, and would be worse off, should they live longer. This is why Martha Holstein argued that she refused to do anything to change her ageing appearance, by for example, dying her hair, or undergoing cosmetic surgery (2001-2, Winter). Rather, she was working to "change cultural attitudes about older women" so that they come to be perceived as valuable in the same way that Japanese women were.

5.2. **A critique of Elliott's arguments.**

i. **The arc of life argument.** Elliot argued that the average life expectancy in developed nations is represented by the "arc of life", that is "the form and contour of our life experienced in time". This arc is delineated by a specified length of time, which is optimum for individual physiological growth, maturation, reproduction, decline, then death, with associated psychological stages. The next generation then has its opportunity to undergo the same process, and so on, *ad infinitum*, as the species evolves and flourishes. Aging and death are phenomena that ought, therefore, to be embraced in their entirety as valuable parts of this natural arc (2003, pp. 282-5). This was exemplified by Jung's depiction of the life course as an arc, where from the midpoint the main psychological task is the acceptance of, and preparation for, one's own inevitable death:

> from the middle of life onward...in the secret hour of life's midday the parabola is reversed, death is born. The second half of life does not signify ascent, unfolding, increase, exuberance, but death, since the end is its goal....Waxing and waning make one curve. (Feifel, 1959, p. 34)

The essence of this position is that, due to the fixed nature of human psychological development, a longer life would not be a better life, because psychological growth and development would be fulfilled, and therefore end, before physiological life came to an end. Further years would therefore be meaningless from the perspective of the person living them.

The supposed "arc" of life, however, is a physiological construct, whose stages do not necessarily correspond to psychological growth. For example, the arc of "lifetime

happiness" – a psychological category – is an inversion of that for physiological development, being high at the beginning and end of life, and at its nadir in the middle (Blanchflower & Oswald, 2008). As an example of this phenomenon, the writer and women's studies professor Carolyn Heilbrun, in *The Last Gift of Time: Life Beyond Sixty*, revealed how she had long vowed to kill herself on her 70th birthday, believing that the inevitable decrepitude associated with aging would increasingly render life not worth living. She found to her astonishment, however, that her 60's were the best years of her life so far. They were rewarding and rich in personal relationships and new activities, despite the limitations brought about by physical aging of the body, and so she decided to extend her deadline by five years, subject to reconsideration, and has continued to do so every time she nears it.

Additionally, while life is partly characterized by psychological stages, which have particular developmental tasks, these have shown themselves capable of being both increased in number extended (Katz, 2005; Jonson & Magnusson, 2001; Slater, 2003; Tornstam, 2005) This, together with the revisitation of former stages that may not have been accessed or fully developed in the past due to circumstances in the individual's life that did not allow for it, would allow for a longer life that continued to be characterized by psychological growth and development, and therefore to be desirable. Moreover, a human life has intellectual and self-realizational components that may require longer than the average life expectancy to be fulfilled, and their trajectory may potentially be open-ended. It does not seem that human beings ought, then, to be defined or limited by a characteristic that is concerned with only one aspect of what it is to be a person, namely bodily health and the decline that comes with ageing.

Furthermore, from the perspective of humanity as a species, procreation can no longer be required as a duty, as, for example, might conceivably be the case if the survival of the human species itself was concerned. Consider, for example, the television series *Battlestar Galactica,* where the total number of human beings in existence had been reduced to less than 50,000. The previously liberal government made abortion illegal, and young women were urged to have babies (Larsen & Moore 2004). In an overcrowded world, however, individual lives need no longer be determined by the requirements of reproduction, and therefore "monolithic species prototypes" for lifespan have become obsolete (Dixon, 1994, p. 614; cited in Overall, p. 35). The Biblical decree to "go forth and multiply" (Genesis 24:2), was given to nomadic tribes in the desert, in a largely empty world, and the edict has been substantially fulfilled. Given the enormous size of the world population, the survival of the Earth's ecosystem, and hence of humanity itself, seems partially predicated on lower fertility rates than in the past . If our sole, or even main, purpose in life is no longer to reproduce and raise the next generation, before dying to make way for subsequent generations, then it is unclear why we ought to accept a lifespan based on that premise. Individual flourishing may encompass living longer than the traditional lifespan has allowed for.

Moreover, while biology and reproduction may require a particular lifespan -- although, as I argued in Chapter 4, this need not necessarily be the case – persons also comprise psychological, emotional, and intellectual arcs of development in addition to the physiological arc of lifespan. The arcs concerned with psychological and intellectual development seem to be far more flexible than that of the physiological

lifespan. A longer life could result in the potential for longer stages in that life, for example, the enjoyment of a longer childhood and youth before the burdens of adulthood and earning a living are imposed. As life expectancy has increased throughout the 20th century, an elongation of psychological life stages has already become apparent. Adolescence, for example, is a relatively new psychological stage in human history. In primitive tribes adulthood was recognized as occurring once the ability to reproduce was established, just after puberty, at about age 14. With the onset of the industrial revolution, a prolonged education beyond childhood began to be required in order to learn the new technologies, a necessity if a person was to be able to earn a living and provide for a family, so adulthood was deferred to about age 18. Over the past several decades, adolescence has come to be prolonged into the late twenties and early thirties in some cases, in order to allow for the higher education necessary to function in an increasingly technologically sophisticated world. Rather than this prolongation being a cause for concern as it was in the 1950's (Blos, 1954), since it was presumed to indicate a reluctance to grow up and assume the mantle of adulthood, this delay is now seen as a legitimate phase of life that allows for more varied experiences, even though as a result, there has been a concomitant delaying of reproduction in many cases. Since Erikson devised his theory of life stages, more have been added at the end of life, as older people are having more years of life post retirement, coupled with better health and more opportunities for personally rewarding activities (Erikson, 1950; Gillick, 2006; Yankelovitch, 2005). There is also the potential for all adults, whether young or old, periodically to move in and out of the workforce or change careers altogether, in a sharing of work and leisure, making life more rewarding for all

concerned. Other psychological stages have been prolonged, for example generativity, the penultimate stage of life, which occurs after achieving a certain standard of living which allows for more than the attainment of basic necessities and discharging typical responsibilities towards raising a family, and before preparing for the decline immediately prior to death (Jonson & Magnusson, 2001; Tornstam, 2005). Intellectual development, which was once thought to decline inevitably with age, has now been found to continue to have the capacity to grow and flourish, absent illness and debility (Russell, 2008, March).

Erikson's stages, and Elliott's argument, assumed that an individual *had* fulfilled their life goals to some extent by the time they have reached their seventies, and hence that one can realistically be psychologically "integrated", i.e. in the final stage of life, and accepting of the imminence of one's own death. But a person may not have done this, or believe that they have. Overall, as I discussed in Chapter 3, argued that this is particularly the case for many women, who may have been denied opportunities for self development in their earlier years, in order to tend to others' needs and development rather than on their own. The postulation of a set life trajectory, associated with a particular lifespan, is therefore, sexist. She also commented that a person who was in possession of a great number of "talents, abilities, and capacities for experience" would also not tended to have fulfilled her potential (2003, pp. 49-50). Grandma Moses was a case in point of a project that would not even have been started if she had not lived considerably beyond the average number of years for her time. She started painting in the mid-1930's at the age of 67, upon the death of her husband, after a hard working life as a farm wife and mother. She commenced a remarkable painting career

which lasted over 30 years and produced over 2000 paintings by the time of her death at age 100. She was completely uneducated, and had no artistic training or encouragement, yet possessed a vast untapped potential that was only manifest because she lived beyond the average life expectancy of the time, and had no further family caretaking duties to perform (Gillick, 2006). Overall argued, further, that it was unjustified to assume that *most* people had in fact fulfilled their potential by the age of 70 or 75, let alone spectacularly gifted individuals such as Grandma Moses:

> so much of most human lives is spent in productive and reproductive work (except perhaps in the case of those who are extraordinarily wealthy and privileged) that many people have little time and opportunity for experiencing a range of other human goods. (2003, p. 49)

She concluded that the failure to recognize this possibility and its importance may well be classist as well as ageist. It is also important to note that the arc of happiness over the course of the lifespan has been reliably shown by an extensive international study of over one million subjects, to be inverted in comparison to the physiological arc, being high at the beginning and end, and very low in the middle, regardless of life circumstances (Blanchflower & Oswald, 2008). This gives rise to the possibility that happiness and satisfaction might continue to rise should bodily life continue, as is borne out by examples such as that of Grandma Moses, particularly if it were to be accompanied by good health and vitality.

To conclude, while many might not relish the potential lifespan of the legendary Greek Hyperboreans, a race of people who lived *hyper* (beyond) *Boreas* (the North wind), and who did not age or sicken, but had to leap into the ocean to kill themselves

once they were "sated with life and luxury" at the extremely old age of about 1000 years (Gruman, 1966, p. 22), it does seem that the psychological, emotional, and intellectual aspects of personhood are capable of functioning and flourishing considerably beyond the typical trajectory of both average life expectancy, and absolute lifespan, though to what degree is unknown, and probably varying from person to person, according to many factors, including desires and talents. There may be possible further new stages of human development, which, for those who live long and well enough to experience them, foster self-realization. The trajectory of a life may be far higher and longer than has been anticipated, and may not even be an arc, with an equal amount of time spent declining as in growing, but rather a straight, rising, developmental line with a brief hook of decline and death at the end, as is argued by the theory of compressed morbidity (Laditka, 2000). Living longer than is currently feasible, therefore, would not seem to be problematic for human functioning and well-being.

ii.**Narcissim and a culture of youth.** Elliott contends that it is chiefly those who are obsessed with maintaining a youthful appearance, as a result of the widespread and narcissistic youth culture in North America, and who consequently dread and fear ageing, who wish to live longer. This is both historically, and currently, inaccurate. Throughout recorded history, back to Taoism in China over four thousand years ago, many people, from a great variety of different cultures, and amongst them philosophers and writers such as those mentioned earlier – Bacon, Descartes, Franklin, Condorcet, and George Bernard Shaw, have desired to live longer, both in order to engage in more experiences and projects, and to achieve more in their chosen fields (Gruman, 1966). Benjamin Franklin, a philosopher and scientist, grieved over the fact that he would die

before he saw what the future would bring, and wished that there were a way for his body to be preserved, and be brought back to life at some point in the future, so that he could see the marvels that technology had wrought (Gruman, 1966). For Descartes in particular, the purpose of medical research was the prolongation of life, and freeing human beings from the debility of age. He was unhappy about the brief duration of life, since it restricted and limited the achievements that were possible for individuals, and through them mankind, to make. He himself is quoted variously as being desirous of reaching the age of five hundred, or to the age of the Patriarchs. Queen Christina of Sweden, with whom he spent the final months of his life, had the impression that he wanted to live forever (Gruman, 1966). His conception of the body as a machine, rather than a sacred vessel containing a vital spark, allowed for modern developments in biology, medicine, and physics, many of which have ultimately contributed to rising life expectancies in the developed world. Similarly, the scientist Francis Bacon asserted that god wanted human beings to be dissatisfied with the *status quo*, and to strive for more, in terms of both knowledge and power. He praised prolongevism as the noblest goal of medicine (Gruman, 1966).

It does not seem likely that these intellectuals and philosophers were in favour of radical life extension because they feared marginalization by society on account of a loss of youthful attractiveness. Nor would it seem, given their long standing fame through succeeding centuries, that they were devalued by society because they were 'no longer repositories of wisdom, because wisdom [was] no longer about tradition or the shared history of a community' (Elliott, 2003, p. 283). Nor were they likely to be alienated from the true meaning of life, such that their desire for more meant that they

were not living properly in the first place. These are all criticisms levelled by Elliott at those in the current day who desire a longer life. Rather, these were successful men who were lionized by society, and relied on their intellects for their position in life, not on their appearance or physical prowess. They were apparently living full and satisfying lives, and they wanted to live longer because there was so much more that they knew they could accomplish and experience.

Nor is the desire to live longer in the present day necessarily associated with a postulated infantile and psychologically restrictive desire to maintain an image of youthfulness -- and hence sexual desirability – at all costs. The desire to be sexually attractive is not necessarily to be denigrated, but it is just as likely that a person who desires prolongevity does so in order to further valuable life projects that have nothing to do with sexual desirability. Many women actually welcome the onset of 'post-menopausal zest' and anticipate the end of childbearing potential and responsibilities with enthusiasm rather than despair. This stage of life has typically been associated with a broadening of experience and activity, rather than a retreat into despair and self loathing, as Elliott asserts.

Sheehy (1998) conducted a survey of menopausal women in America, from diverse class, educational, and racial backgrounds. She found that those women whose worth was formerly estimated primarily in terms of their appearance and sex appeal were indeed diminished in postmenopausal status and self-esteem. These included "movie actresses, performers, [and] many full-time wives and mothers." However, women whose roles required "intellect, judgment, creativity, or spiritual strength"

enjoyed an *augmentation* of postmenopausal status and self-esteem. These included doctors, lawmakers, educators, politicians, artists, writers, and clergywomen (p. 250), and it may reasonably be the case that some women of this kind would be among those who indicated a desire to live longer in Lock's survey.

It is not just women who can age successfully and happily, or the reverse, according to how they approach meaning in their lives. Elliott tacitly acknowledges this when he discusses the different life courses of male professional athletes, who depend on their bodies for their livelihood and status, and a male professional such as a doctor, who depends on his skill and mental proficiency. The former reach an early peak and then are typically unable to compete successfully with younger players, while the latter "work their way up the career ladder, earning more money and more respect as they get older." He uses the example of the return, at the comparatively advanced age of thirty-eight, of the legendary Michael Jordan to the NBA after three years of retirement, who was "only a shadow of the player he used to be. He was simply not as quick or athletic as many of the muscled 25 year olds he was facing." This diminishment of physical skill often so disconcerts professional athletes that they may:

> simply flounder once they can no longer play competitively, squeezing out an unhappy existence at the margins of the sport. When a doctor retires at age 70, the arc of his career has run roughly parallel to the arc of his life. But when an athlete retires at age 35, he can see a long future stretching out in front of him with no career to fill it. (Elliott, 2003, pp. 284-5)

Women who rely primarily on their bodies, sexual attractiveness and fertility for their status and enjoyment of life will obviously suffer a diminishment in these when their bodies inevitably decline from their earlier youthfulness. They too may "squeeze out an unhappy existence at the margins" of society, and see their "long future stretching out with no career to fill it." Women who resort to cosmetic surgery will often find themselves in the position of the hapless Michael Jordan – possibly with fewer wrinkles than non-enhanced women of the same age, but still unable to compete successfully with younger women for male attention. Women who invest their skills in other areas in addition to those concerned with appearance, however , for example in a career as a doctor or teacher, will also potentially continue to "work their way up the career ladder, earning more money and more respect as they get older" in the same way as their male colleagues (Elliott, 2003, p. 285).

If this kind of person desired a longer life, then this would detract from Elliott's argument that doing so is an indication that the one being lived is deficient in some way. A worthwhile life, as lived by the doctors, lawmakers, educators, politicians, artists, writers and clergywomen mentioned above, could reasonably be characterized by a desire to continue living for many more years, given health and strength. Furthermore, activities would be improved by the retention of health and strength. If a greater degree of strength and energy were retained into later life, as might be the case with life prolonging drugs or technology, then the quality of life and the range of possible activities would improve. Holstein (2001-2, Winter), who was opposed to prolongevity because of the perceived devaluation of the elderly that it embodied, nonetheless

admitted that, if she were offered a pill that would enable her to be strong and agile – i.e. 'youthful' – enough to walk alone in the woods when she is in her 90's, she might well accept it gladly. Her reason for doing so would not be for the sake of a slavish conformity to society's perceptions of value and attractiveness, but rather for the sake of engaging in a life-enhancing pleasure that is only able to be enjoyed by the possession of a degree of youthful vigor and strength.

iii. The argument from an unfulfilling life. Elliott's characterization of the desire to live longer than is currently possible as being attributable primarily to a currently unfulfilling life is counterintuitive – when something is good, we tend to want more of it, and when something is unpleasant, less of it. There is a significant body of evidence to support the idea that the reason why Japanese women in Lock's survey did not desire to live longer may result from factors in Japanese culture that negatively affect happiness, self-realization, and well-being, such that living longer under these conditions might reasonably not be desirable. For example, the statistics for Japanese life satisfaction are lower than every other developed country, being just above Nigeria and India, but below China. The United States, however, is in the top five, with Switzerland, Denmark and Sweden at the very top. These low figures are despite the fact that respondents to surveys of this kind tend to "impression manage" their replies to produce a good effect (Nettle, 2005, pp. 52-3). It is also the case that suicide rates in Japan are the highest in all of the developed countries, which is itself an indication of an unhappy society (OECD, 2006; Diekstra, 1999).

The reported low levels of life satisfaction might be caused by a number of factors that Elliott maintains are actually conducive to happiness and life satisfaction. Japanese society expects individuals to resist their own desires and interests and put those of society first (2003; cited Benedict, 1947). One of these expectations is that the Japanese will work extremely long hours without complaint, the longest in the developed world. Nor does this willingness necessarily increase economic success, because the long hours may contribute, it is argued, to reduced productivity. The work culture seems to emphasize work for its own sake. Schor describes the unhappy existence of "white collar salarymen" in Japan, contrasting this unfavourably to conditions and hours of work in the United States, which is itself less fortunate in this respect than most European countries:

> [they] adhere to grueling schedules in a pressure-cooker environment. They face arduous commutes, an extended workday, and obligatory "after work" socializing. They are strongly discouraged from taking their vacations. (Schor, 1992, pp. 153-4)

Manufacturing and office workers in Japan work almost six weeks longer per year than workers in the United States, fourteen more weeks than most Europeans, and *seventeen* more weeks than Swedish workers. When the fact that many workers do not take their allotted holidays, the discrepancy in hours worked is even greater. Schor quotes a young American worker as saying "I don't want to be Japanese....I work hard enough as it is." The number of hours worked is inversely related to reported levels of happiness. Many thousands of Japanese workers have succumbed to *Karoshi,* or death by

overwork: "otherwise perfectly healthy, they keel over at their desks, usually after a prolonged stretch of overtime or a particularly high-pressure deal"(Schor, 1992, p. 154; cited Sanger, 1990, 19th March). Living longer, if this means working longer and harder, with little personal gain, might not seem particularly desirable . This is precisely the argument put forward by trade union leaders in the science fiction novel *The Trouble With Lichen.* They do not want to live longer if it simply means "six hundred years at the factory bench" (Wyndham, 1960, p. 124).

Working very long hours in this way is productive of a low quality of life, and therefore of reported happiness. There is little time or energy left over for either engaging in personal projects to the degree which they are socially acceptable, or fostering personal relationships. For example, rates of marital intimacy in Japan are notorious for being "markedly lower than those of normative samples in other studies in the United States". Moreover, studies show that there has been a significant decrease in rates of sexual intercourse in Japanese society as a whole over the past half century. Studies indicate that "coital frequency" diminished in patients with depression, but not for most other forms of mental illness, and that marriages which were under strain had decreased levels of sexual intimacy (Okabe & Mishima, 1999, pp. 7-9).

Taken together, these findings suggest that the Japanese as a whole are grossly overworked, and hence prone to lowered life satisfaction, depression, and reduced marital intimacy, in comparison to the United States and other developed countries. Conversely, the levels of happiness and life satisfaction reported by North Americans, together with the enjoyment of more leisure time, and hence potentially of more

opportunity for self-realization, and a greater degree of marital intimacy, indicate that the North American lifestyle is more desirable in some important respects than that of Japan. It seems plausible, therefore, that it is because life in the developed world, including North America, but excluding Japan, tends to be desirable, that more of it is desired, and *vice-versa,* rather than being the perverse result of widespread confusion and unhappiness, as Elliott argues.

iv. **The prevalence of Buddhism in Japan and the desire for prolongevism.** This might conceivably have influenced the reported lack of desire to live longer, because Buddhism is concerned with repressing desires for worldly goods, and eventually escaping from the wheel of life's pain after many reincarnations, to no longer be subject to rebirth (Honderich, 1995). Taken together, these factors – not least of which is an expectation of being reincarnated – militate against the desire for a longer life. The Japanese Bureau of Cultural Affairs, a government office reported 86,000 churches, with 95 million lay followers and an additional 250,000 nuns and priests, in Japan in 2002 – some 80% of the population of 120 million (Becker, 1990). This would indicate that Buddhist beliefs could have affected replies to Lock's survey in the negative, which would not have been the case to a significant degree for North American respondents.

v.**Individualism and the "finely tuned sensitivity" argument.** The structure and expectations of Japanese culture may also have affected the nature of the responses to Lock's questionnaire. Individual desires are expected, even required, to be subordinated to the well-being of society, sometimes even if this involves death. The

suicidal *Kamikazi* pilots of WWII are an extreme historical example of this expectation, but elements of it remain in Japanese society to this day. In Japan, "suicide is as ancient and honored as the samurai," and may be a respectable solution to life's problems, if it benefits society as a whole. The economic crisis of the 1990's produced a spate of suicides by near-bankrupt businessmen, one of which was related in the 1998 *Washington Post* article Death of Three Salesmen:

> The three company presidents...each a husband and father... sliced a rope into identical lengths, walked into adjoining rooms and killed themselves. They left notes directing that their life insurance payoffs be used to try to save their companies. One of the men, fearful of what he was about to do, apparently asked his friends to tie his hands behind his back. (Shigehiko & Yamamoto, P. A01)

It does not appear that the businessman who had his hands tied wished to die on his own or his family's account, but, conceivably, believed that it was his duty to atone for his sins to society, by making some economic amends.

Cultural expectations of this type may have led the Japanese women surveyed to subdue their own individual desires in favour of what is perceived to be best for society, to avoid being regarded as, or actually being, selfish. Women might be anxious not to be a burden upon their families as they age and lose their independence, since a higher percentage of older Japanese live with their children than in most other developed nations (OECD, 2006). There might also be a desire not to deprive the next generation of its own chance to flourish, together with fears of potential overpopulation in a country

that is a series of small crowded islands. This does not mean that such considerations would not taken into account by the North American women surveyed, but they might be less pressing than for the Japanese women, given the North American emphasis on personal self-realization and desire satisfaction rather than self-abnegation in the interests of achieving social harmony. Further support for this view is given by Elliott himself. He noted that:

> Japanese concern with the feelings of others has often been understood, quite plausibly, as a cultural marker of Japanese interdependence and emphasis on social harmony, as opposed to Western individualism. We worry about being embarrassed, while the Japanese worry about embarrassing others...[there is a] finely tuned sensitivity to what the audience is thinking. (2003, p. 72; cited Benedict, 1947)

As well as involving an active suppression of individual desires, this "finely tuned sensitivity" often results in Japanese giving the answer to their interlocutor that they think is expected, or appropriate, rather than what they may actually believe or desire (Elliott, 2003, p. 225). There might also be a fear of embarrassing the interlocutor with an unexpected, or unacceptable, response. This fear is a prevalent mental disorder in Japan, *taijin kyofusho*, whereby sufferers have:

> an intense fear of offending or embarrassing other people...[it] is a Japanese preoccupation with the proper public presentation of the self....[and] involves the fear that one's behaviour or appearance will make *others* uncomfortable. A

> nineteenth-century Western observer, quite understandably, called *taijin kyofusho* an "altruistic" anxiety. (Elliott, 2003, p. 71; cited Tajima, 2001)

It is interesting to speculate, therefore, how the Japanese women would have replied to the survey if they were told that living longer would actually be beneficial to society, because the predicted shrinking of the birthrate worldwide means that the population of Japan and of the world will start to decrease quite rapidly after 2050 (United Nations, 2004). Possibly, notwithstanding religious and cultural factors, and even without the desire to live longer due to low levels of life satisfaction and happiness, living longer might come to be regarded as a social duty, however arduous this may privately be regarded.

5.3. **Conclusion.** Elliott is possibly correct in arguing that a person who has no guidance from society as to how to live well, but rather many misdirections, and who therefore descends into alienation, even madness – grotesque instances of which are liberally sprinkled throughout the text – might not benefit from a longer life. However, it is also the case that, for many people, a longer life might give the opportunity to benefit from lessons which they might otherwise learn too late, despite Elliott's pessimism with regard to this eventuality – he envisages people making an interminable series of dire mistakes concerning how to live, whereby remedying one situation results in a different, but still intolerable situation.

To conclude, Elliott's assertion that the Japanese do not wish to live longer because they are satisfied and replete with life, is comparable to Lucretius' happy wise

man, who is satisfied at the end of a full life, and content to die at the end of his allotted span:

> if your past life has been a boon, and ...not all your blessings have flowed straight through you and run to waste like water poured into a riddled vessel, why...do you not retire from the feast of life like a satisfied guest and with equanimity resign yourself to undisturbed rest? (Leonard, trans. 2004/1921, 3.933-944)

However, the reality of the apparent Japanese lack of a desire for a longer life is actually reminiscent of Lucretius' *unhappy* wise man, who is content to die because life is difficult and unrewarding:

> If...all your enjoyments have been poured away and lost, and if life is a thorn, why do you seek to prolong your existence, when the future, just as surely as the past, would be ruined and utterly wasted? Why not rather put an end to life and trouble? (Leonard, trans. 2004/1921, 957-961)

Elliott has mis-characterized the desire for a longer potential life as being necessarily "self-destructive, unhealthy, paranoid or perverse", when it is actually the logical consequence of having something that is good, and therefore wanting more of it. The North American lifestyle seems to be objectively more desirable in certain respects than that of the Japanese. Contrary to Elliott's arguments, this may be due, in part, to a general expectation of respect for autonomy regarding the fulfillment of personal desires, and a cultural emphasis on the pursuit of self-realization as a legitimate goal, together with some degree of opportunity to engage in this. These factors potentially

contribute to higher overall levels of life satisfaction than is the case in Japan, where it is expected that individuals conform to the authority of the community in a variety of ways, including by obedience to an extremely demanding work culture that gives very few opportunities for leisure, and the subjugation of personal desires in order to facilitate social harmony. It is, therefore, reasonable to suppose that it is these positive factors that influence the reported widespread desire for a longer life in North America, rather than this being attributable to social and individual pathology.

CHAPTER 6: CONCLUSION.

6.0. **Summary of the Chapter.** In 6.1., I give a brief overview of the conclusions to each of the chapters. In 6.2., I give an account of the potential problems arising from prolongevism, and hence of the weaknesses in my argument. In 6.3., I give my overall conclusion.

6.1. **Summary of the conclusions.** Being alive is a good that seems to be capable of extension, to some degree at least. Doing so would allow for potentially greater access to desired experiences and projects, which together would allow, potentially, for increased self-realization. Science ought therefore to pursue the means of achieving radical life extension, which, if feasible, should be available to those who desire it. Taken together, the potential availability of new psychological stages for growth and development, coupled with the repeatability of many kinds of pleasures and experiences, means that the potential argument from boredom would not become an issue for perhaps a very long time, and when it did, it would probably signify that a desired level of self-realization had been reached. At this point an individual might no longer desire to live longer, but be unable to die of natural causes due to the means used to achieve prolongevism. This may mean that physician assisted suicide may need to be a legal option, since respect for human agency requires that individuals have the right to decide both to live longer if they so choose, and also to have assistance to die if they so choose.

Radical life extension would also be desirable because it would allow increasing numbers of individuals to achieve economic stability, which would enable them to engage in more of their desired experiences and projects. This development would be particularly beneficial to women, who still to this day suffer from decreased opportunities to engage in desired activities, due to social expectations of the female role involving reproduction and childcare, and associated financial injustices, as do males in the lower socio-economic class. By being able to continue to work beyond the current retirement age, older individuals would also benefit society by reducing the problem of an inadequate worker/retiree ratio and the potential break-down of the social security and pension systems (Cetron & Davies, 1998). Healthier older people, who keep working, would benefit society in terms of both providing for themselves, rather than relying on pensions that are paid for by a declining youth/worker demographic, and being productive in the work force itself, by virtue of greater knowledge, skills, and talents – research has shown that, if healthy, older workers are far more reliable and productive than younger workers, and this would be likely to continue should lifespan increase (Morrow-Howell, Hinterlong & Sherraden, 2001).

The argument from playing god devolves into the safety argument. The challenge is to avoid the technological imperative: i.e. because something can be done, it will be done. This will probably require the adoption of the precautionary principle in regard to science, whereby if a possible negative consequence of technology, though remote, would be calamitous, then use of that particular technology must be forsworn. An educated public, that engages in continual and open discussion of bioethical issues,

would also tend to restrain possible hubris on the part of science, scientists, and pharmaceutical companies. This will probably slow down the process of technological innovation, and hence the likelihood of radical life extension occurring in the near future, but this would be morally prudential and therefore required.

It seems likely that it is a good quality of life that drives the desire for prolongevism, rather than the reverse. The desire for prolongevism is not, therefore, a perversion, but the logical response to having something that is good, and wanting more of it.

6.2.**Potential weaknesses in my argument.** The conservative arguments pertaining to consequences are the strongest. These relate to how safe the technology proves to be, as well as to its cost and degree of availability to all of those who desire to avail themselves of it. The technology may never be safe enough to use, or, if safe, prohibitively expensive, such that only the wealthy, or those in the developed world through government subsidies, could afford it. Over time, this problem of distributive justice could, potentially, result in the division of society into the Genrich and Genpoor, i.e. the enhanced and the non-enhanced, eventually perhaps to the degree that two separate species arise (Silver, 1998).

The technology may prove to be safe, and, though initially expensive, eventually, as with other technologies, become cheap enough so that everyone who desires it would be able to access it. This could be achieved through its administration as a treatment through the health care system, as are children's vaccinations, rather than

as a market commodity, in the developed world. In the developing world, it might be possible to allow the technology to be produced and distributed cheaply, despite patent protection laws, as is now the case with AIDS drugs for Africans, generic versions of which are produced in India, with the consent of the big pharmaceutical companies (Angell, 2000). In this case, if the technology were to be both widespread and adopted rapidly, serious problems with overpopulation might ensue .

The effectiveness of the technology is also a factor in costs and overpopulation – if it produces a few extra years of healthy life, and then a rapid death, as is argued for in the compressed morbidity hypothesis, then this could be advantageous to both individuals and society as a whole. People would be able to continue working, so that they did not become a burden on society and the healthcare system. This would also potentially defuse the predicted pensions crisis that will arise when the post WWII generation retires, and has to be supported by smaller numbers of workers from subsequent generations (Cetron & Davies, 1998). If, however, the technology allows individuals to reach the age of 100 in good health, then to decline rapidly but not die, such that they have to be in personal care, as Fukuyama (2002) and Overall (2003) fear may be the case – Fukuyama imagines society becoming a giant nursing home, with half the population caring for the other half – then this might present serious cost, overpopulation, and quality of life, concerns (Callahan, 2003).

The best case scenario would be that the technology is at first modestly effective in increasing lifespan, so that even if only the wealthy could afford it, this would not be a serious problem for distributive justice. If the effectiveness of the

technology increased slowly over time, with concomitant cost, and hence availability, reductions, then more and more people who desired it would be able to access it. If, simultaneously, as has been predicted, the world population peaks in 2050, then commences to decline, fairly rapidly (United Nations, 2004), then having a long lived population might actually be an advantage, allowing for the retention of a world population base sufficiently large enough to allow for a postindustrial lifestyle, without accompanying overpopulation, pollution, social stagnation, etc. However, it is impossible to speculate if, when, or how these things will come to pass, each of which conditions would seriously affect the desirability of prolongevism.

Other problems would compound the worst-case scenarios. Continuing to be alive might prove to be an unlimited good, with an unending number of psychological stages, with the result that many, even most, individuals might desire to live for ever. Nagel (1986) hinted that the desire for prolongevity might be problematic when he admitted that, should he be given the choice between "living for another week and dying in five minutes", he would always choose to live for another week. He demurs, however, over the advisability of his choice:

> there is little to be said for [death]: it is a great curse, and if we truly face it nothing can make it palatable except the knowledge that by dying we can prevent an even greater evil. (p. 224)

Such an eventuality would potentially lead to extreme overpopulation, and social stagnation, since newer generations would not be able to rise in the social or career

hierarchy, as is the case in Vonnegut's science fiction story where the life preservation medication is derived from mud, and no-one wants to die (1998).

In view of some of the above consequences, governments may come to impose limits on life extension, possibly even resorting to involuntary euthanasia. The technologies may potentially be designed to serve corporate and military ends, rather than human needs, and/or used as a means of oppression. It may be unfair to allow those with the most talents to live the longest, because it would take them longer to reach a desired level of self-realization. This might lead to imposing limits on the length of life sought, which means that some would be no better off than at present: they would die before they wanted to. Living longer might have a negative impact on character. Rather than engaging in the "risky" developmental tasks that form some part of self-realization, those who know they are going to potentially live for a very long time might be very concerned with safety, as are Nietzsche's long lived, less-than super-men (Tille, trans., 1933). Finally, if radical life extension were to come about, this might open the floodgates for all manner of potential enhancements, some of which might be dangerous, or which people might later regret.

6.3. **Conclusion:** for individuals, while there are goods in life that do seem capable of being unlimited -- e.g. friendship and love – it is not known whether life itself is a good of the same nature. There may in fact be an optimum lifespan, but it does seem that this would differ between individuals, according to their talents and temperament. Even if this is the case, and there is a limit to the length of life that would be desired by

most individuals, nonetheless moderate life extension consisting of a number of decades of extra healthy life would seem to offer many benefits, both individual and social. The longer that life continues, however, the more problematic it may become. Boredom might become a problem for individuals, and overpopulation and social stagnation for society as a whole.

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