Gerontological Hygiene:

The role of anti-aging somatechnologies in the abolition of old age

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Statement of Originality

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

(Signed)_____   Date: _____04 October 2018_____

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Thesis Abstract

The central concern of this thesis is to expose and critique the myriad ways in which old age has become pathologised as a disease-state. The pathologisation of old age, I argue, has been enabled and legitimised by a number of scientific and medical discourses and, most notably, through the inclusion of old age as a listing in the *International Classification of Diseases* index. Informed primarily by the Foucauldian concepts of biopolitics and governmentality, I aim to explore the problematic discursive and technological regimes that perpetuate what I name as 'gerontological hygiene.' As will be seen, I also deploy a neoliberal framework to complicate common understandings of age and our approaches to bodies deemed 'old'. It is my contention that old age – and aging more broadly – is currently under attempted abolition; that is, through governmental, institutional and medico-scientific frameworks, there is an attempt to abolish age and aging because it has been framed as a pathology that needs to be 'cured.' As such, this thesis is concerned with addressing the over-arching research question: '*do anti-aging somatechnologies play a role in the abolition of old age*?' In the course of the thesis, I seek to examine the intricate nexus between ever-growing anti-aging discourses and practices.

In the course of my thesis, I tease out the inter-relations between biopolitical governance and anti-aging somatechnologies in order to examine the critical space between biopolitics and ethics. In this way, my thesis identifies a gap in the field of biopolitical studies in its failure, largely, to address old age and, specifically, the biopolitical and related somatechnological moves to abolish it. Further, while several texts critique the ethical use of technologies in and on the disabled body, there is a further gap that fails to address ethical implications upon both the body of elderly individuals and related subjectivities. I stage a number of interventions in this field, as evidenced by the below chapter descriptions.

Primarily deploying a Foucauldian lens in Chapter 1, I develop a framework of 'gerontological hygiene' to expose the manifold ways in which old age is currently undergoing both discursive and practical abolition. I proceed to elaborate on ongoing discursive practices designed to abolish old age in Chapter 2, where I examine medicalised somatechnologies such as telomere and genetic therapy, and institutionalised policy such as the World Health Organisation's *Global strategy and action plan on ageing and health* (2014). It is my contention that these strategies are oriented toward the abolition of old age, thus enacting a neo-eugenic regime of biopolitical hygiene. In Chapter 3, the thesis further examines the inter-connection between neoliberal self-surveillance and idealised notions of normative humanity through a critique of Heideggerian and Arendtian theories of what constitutes the human. Finally, Chapter 4 of this thesis undertakes an ethical examination of emerging anti-aging somatechnologies, drawing on Levinasian philosophy to critique anti-aging medical practice.

Introduction

I have often reflected on the manner in which old age is framed not only as a sort of deficit, but critically, as a form of disease-state. Existing in an intergenerational relationship myself, I am always interested in the reaction my husband and I receive when it is discovered we are, in fact, not father and son. The categories imposed upon us through *a priori* assumptions about age – and romance – sparked within me a curiosity. In societies that seemingly seek to empower older individuals through the marketing of anti-wrinkle creams and reinvigorated vibrancy, why were people still so shocked to hear that this man and I, with an age difference of twenty-four years, were actually in a monogamous relationship? This curiosity led to some informal research, where I noted cosmetic treatments such as anti-aging creams and community programs to ensure *all* elderly people remain active were increasingly reliant upon medico-scientific discourses in order to validate their claims. I then began to notice more frequent television news reports concerned with 'overcoming' age and the presentation of *aging itself* as a medical problem. I wondered if there was a connection between informal gasps of shock when I introduced my visibly older life partner and a broader discourse that positioned old age as a medical issue.

Having already been familiar with transhumanist, posthumanist and futurist discourses that seem to promote extended longevity, I began to academically research this anti-aging phenomenon. The increased value of youth is not a new phenomenon, of course, however with the increased development of technology, this anti-aging phenomenon has become a movement, as this thesis will endeavour to expose. The question therefore arose, "were wrinkle-creams and 'success' stories of extending the lifespan of mice designed simply to celebrate youth, or was there something else at stake here?" This thesis will demonstrate that discourses surrounding age are intertwined with biopolitical, governmental, neoliberal,

somatechnological and ethical regimes that, I argue, seek to remove old age in favour of an idealised youthful form. Thus, my research question is as follows, '*do anti-aging somatechnologies play a role in the abolition of old age*?'

To answer this question, in part, I would like to first clarify that somatechnologies do have a purpose and that they can be celebrated as vehicles that enable older people – and others with disabilities – to function with disabilities and with 'symptoms' of old age. Throughout the thesis, I will emphasise the problematic dimensions of these technologies, so it is important that I acknowledge here the ways in which these technologies can also be effective. What comes to be at stake in answering my overarching thesis question, is whether or not old age is actually being abolished through advanced anti-aging somatechnologies, and how this abolition is able to take place? That is, what are the conditions of its emergence, and indeed, its perpetuation? While certain technologies can be celebrated for their enablement of older people to function with disabilities, I would like to emphasise that processes of self-surveillance and self-assessment – tracked later in this thesis – have already begun. Hence, these technologies emerge within a nexus of biopolitical, governmental and neoliberal regimes that suggest getting 'old' is a problem in need of intervention – technological or otherwise, as this thesis will detail. Hence, while I do not argue that enabling older people to function with disabilities is negative, I would like to emphasise that the emergence of the technologies tracked in this thesis is heavily predicated on notions of the ideal human and thus, perpetuate what I will frame in this thesis as gerontological hygiene.

Part of addressing the argument that these technologies are underpinned by notions of the ideal human lies in the ways in which age and the aging process are understood. Generally, the aging process is recognised as a simple fact of life; we are born, we live, we get old and we die. It

has never been that simple, of course, for age itself is a social and cultural construct. As Estes and Philipson (2002, p. 280) state:

> in virtually all industrialized societies, with varying degrees of emphasis, responses to aging were formed around the institutions and relationships associated with welfare, retirement, and what became known as the "intergenerational contract". The associated discourses were fundamental in determining social identity in old age.

As such, aging has never merely been solely concerned with reaching a certain number; rather, it has been centrally preoccupied with what a person is entitled to during certain periods of one's life. For instance, in western societies, an individual aged five-years-old is entitled to enter the education system, an eighteen-year-old is entitled to vote, which in Australia, it is a legal requirement. At age sixty-five, an individual is entitled to retire. These and other examples demonstrate that aging is not simply a biological process, but one that occurs within a nexus of biopolitical and governmental regimes surrounding presupposed aged abilities. However, 'age-related demarcations (50+, 55+ or 65+), that are constructed in society to distinguish "the aged" from other, seemingly "ageless" adults, are quite arbitrary' (Baars & Phillipson 2014, p.12) and have shifted over time. As such, what is innovative about my thesis is the examination of the relationship between biopolitical governance of age and the ethical dimensions underpinning the emergence of anti-aging somatechnologies.

Further, what is of interest for me, and for this thesis, is how individuals in later life are constructed as somehow waiting to die. Moreover, how often these individuals are framed as *entitled to die*. At the very least, it is expected that older individuals will die sooner rather than later and as such, protocols are put in place to alleviate the economic burden they represent. The manner in which this alleviation takes place has shifted over time from regimes of care, to regimes of self-care, which, as Nadesan (2010, p. 15) argues, operate as forms of the 'neoliberal state relinquish[ing] paternalistic responsibility for its subjects but, simultaneously, hold[ing]

its subjects responsible for self-governance'. As such, it is argued in this thesis that a neoliberal understanding of old age has framed a decline in health as a personal responsibility – and a personal failure. Further, old age is not only increasingly understood as a medical issue, but is also, as my thesis aims to argue and demonstrate, normalised as a disease-state. For instance, Birren and Stacey (1988) demarcate 'normal aging' from a state they call 'terminal decline'. Normal aging, as defined by Moody (2002, p. 4), 'is not a disease but eventually leads to functional declines and involves increased susceptibility to death from specific diseases'. Terminal decline, however, should be viewed as 'a phase of biological, psychological, and social decompensation and not as "normal aging"' (Birren & Stacey 1988, p. 55). As such, it will be impossible to adequately answer my research question without first acknowledging the complexities of the term 'age'. Indeed, age can be constructed in various ways, from social/cultural, to biological and physiological, to psychological. To answer my research question, I first need to frame the concept of age and highlight the way in which I will deploy the term. Following this, I will detail my other primary concepts, including biopolitics, neoliberalism and ethics before moving into a brief outline of each chapter and the empirical grounds for the thesis.

Understanding 'Age'

To frame 'old age' as a disease-state through medico-scientific discourse, it is critical to first identify the manifold ways in which categories of age and aging are constructed and understood. There are several approaches to understanding age, including biological/chronological, social and cultural, spiritual and psychological. Silverstein et al. (2009) mobilise three distinct categories for theorising age that are helpful for this thesis – firstly, biological and biomedical; secondly, psychological; and thirdly, social scientific approaches, including anthropology and the development of the 'Life Course' approach

popular among sociologists (Dannefer & Kelly-Moore 2009; Cardona 2007, 2008). Typically, 'the life course perspective has included two broad yet distinct, paradigmatic orientations, which may [be] termed the *biographical* and the *institutional*' (Binstock & George 2011, p. 4, emphasis in original). The life course acknowledges that components of aging from genetics to agency operate together to produce a trajectory for an individuals' life. I will elaborate mostly on the first category, for reasons that will soon become clear. However, the psychological and social scientific approaches must firstly be given attention.

The psychological approach primarily relies on notions of cognition development and assesses what is typical or expected of an individual at a certain age (Schaie & Willis 2009). Cognitive aging is depicted as the gradual decline 'in measures of process, or fluid cognition' (Salthouse 1999, p. 196), which is related specifically to 'learning, memory, reasoning and spatial ability' (Salthouse 1999, p. 196). However, as Salthouse highlights, there are several variables in age-related cognitive evaluation that rarely demonstrate any difference between subjects aged twenty-five to seventy-five, re-enforcing the arbitrary nature of age demarcations, as listed above (Baars & Phillipson 2014, p. 12). The purposeful visibilisation of differences inferring decline in older subjects is alarming, precisely because this only serves to highlight decline or illness, which is profoundly similar to early studies of already-ill elderly patients in the Hopital General that eventually led to universalised elder care[1]. Critically, there have been connections made between psychology and the social sciences, which resulted in what has been framed as 'social gerontology'. This approach rests between the second and third categories mentioned above and considers negative stereotypes surrounding aging and old age, and environmental factors of aging, such as housing. Importantly, this approach enables the interconnection of age with concepts such as sex, gender and race (Baltes & Carstensen 2009). Indeed, Baltes and

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[1] This will be detailed further in the Chanpter 1.

Carstensen (Baltes & Carstensen 2009, pp. 214) mobilise key qualifications of dependency in the later life course stating that:

> three qualifications should be emphasized: Dependency means passive control; reinforcement of dependency leads necessarily to non-use of existing skills and thus to a possible acceleration of aging decline via disuse; and the compensation strategy, dependent behaviour, is dictated by the environment; it is not self-selected.

The critical moment to mark in the above passage is the correlation between dependency and regimes of control – what will be framed from this point on as a form of biopolitics. Baltes and Carstensen (2009, p. 214) point to social and environmental factors of the aging process that are crucial for this thesis, specifically in relation to the nursing home, which formulates part of my empirical ground. Indeed, 'environmental gerontology has undoubtedly re-emerged as a major field of enquiry … and in the process raised significant issues about older people's relationship with the physical and social contexts that shape everyday life' (Phillipson 2007, p. 326). Whilst Baltes and Carstensen's qualifications are valuable, and they later explain that self-selection is possible 'when and where necessary', I argue against the negation of self-selection. I do this specifically because, as will be shown, biopolitical regimes generate not only the internalisation of social and cultural expectations and norms, but they also produce the embodiment of those expectations through everyday practice, whether consciously or otherwise. In relation to aging, I will demonstrate how dependency can be self-selected through neoliberal ideals of productivity and self-assessment. This is but one problematic dimension of existing aging studies that this thesis seeks to interrogate.

The notion of assessment is perhaps the most significant component of any approach to age and aging. The social scientific approach was built upon anthropological and ethnographic research into aging across various cultures and societies across. It was not until the early 1940s

that anthropological studies into old age were popularised through the seminal work of Leo Simmons, titled *In the Role of the Aged in Primitive Society* (1945), which examined the roles of, and perspectives towards, aged bodies in seventy-one non-industrialised societies. While Simmons' work was unable to provide clear and distinct attitudes towards elderly individuals, his research provided a platform for further ethnographic studies. Gubrium and Holstein (2009) highlight the social construction of the aged identity, furthering the connection between age and other socially constructed categories such as race, sex, gender and class. Phillipson (1982) complicates biological approaches to age when he mobilises the intersection between old age and capitalism. Indeed, he states that 'we are rather more interested in old age as a problem for a society characterised by major inequalities in the distribution of power, income and property' (Phillipson 1982, p. 1). The shift away from the biological component of aging is critical in the development of gerontological studies, regardless of one's theoretical framework, precisely because this exposes age and aging as a multifaceted experience, unable to be defined clearly by a single approach. It is problematic to assume one can understand the process of aging purely from a biological perspective. As such, sociological approaches to aging further consist of the development of the 'life course' approach, focusing on both social interaction and social structure, and aspects of political economy that lead to age-related inequalities, inclusive of aspects such as health, wealth, longevity and marital status (Dannefer & Uhlenberg 2009). Within social scientific approaches to gerontology there also reside categories such as environmental – as mentioned above – and humanistic concepts. Humanistic gerontology, as described by Biggs, Estes and Phillipson (2003, p. 22), seeks to 'critique existing theories and to construct new positive models of ageing based on research by historians, ethicists and other social scientists'. The multitude of dimensions in which gerontology is approached further highlights its complexity as a discipline and a category unto itself. The psychological and social scientific approaches to aging are important for this thesis, precisely for how they are

inextricably interwoven with the first approach to aging mentioned above – that being the biological and biomedical approach.

According to López-Otín et al. (2013, p. 1) the biomedical approach to aging is principally characterized by a progressive loss of physiological integrity, leading to impaired function and increased vulnerability to death. This deterioration is the primary risk factor for major human pathologies including cancer, diabetes, cardiovascular disorders, and neurodegenerative diseases.

For the above cited authors there are nine hallmarks of aging that need to be overcome: 'genomic instability, telomere attrition, epigenetic alterations, loss of proteostasis, deregulated nutrient-sensing, mitochondrial dysfunction, cellular senescence, stem cell exhaustion, and altered intercellular communication' (López-Otín et al. 2013, p. 1). In this way, aging is inseparable from medical understandings of health. The short passage above provides a clear understanding of the biomedical approach as underpinned by the assumption that aging is – or at least can be – a disease-state. Importantly, the biomedical approach can be fragmented further, specifically based on assumptions of *causes* for aging. That is, some biogerontologists (Barja 2008; de Grey 1999, 2004a, 2004b, 2005, 2007; de Grey & Rae 2007; Johnson, Sinclair & Guarente 1999; Rattan 2010, 2012; Sinclair & Guarente 1997) argue that aging is caused by oxidative stress, while others (Gilchrest & Bohr 2001) advocate for the gradual shortening of telomeres and malfunctioning mitochondrial DNA as the root cause. Regardless as to whether this is factual or not, it is my contention that biomedical discourse seeks to prove all other age-related illnesses are merely symptoms of the disease of age. Hence, increasingly, scientific communities are framing the aging process itself as a disease-state requiring intervention or a 'cure'.

It is my argument that anti-aging discourses and the resulting emergent somatechnologies, formulate a revision of what it means to be human. This is dangerous precisely because of the unethical biopolitical regimes deployed to find a 'cure' and the manifold ways in which such regimes reify discourses of idealised corporeality. As Waldschmidt (2005, p. 191) asserts, 'the concept of normality has gained such great suggestive power, especially in the course of the last century, that one can hardly avoid its influence'. This is an important point, precisely because the government of bodies – in particular, *deviant* or *nonproductive* bodies – has seen 'normality' as the bell curve standard. As Davis (1997, p. 52) states, 'normalcy, rather being a degree zero of existence, is more accurately a location of biopower', thus enabling the governance and surveillance of bodies. Further, 'professional discourses and social policies, rehabilitation programs and therapeutic practices, all with the aim of making normality possible for their clients and recipients, revolve around this central notion' (Waldschmidt 2005, p. 191). Moreover, with the large-scale adoption of techniques such as workplace equality for disabled employees, 'normality' is once more reinvigorated through the visible demarcation of difference. Davis (2000) frames this through the notion of 'bending over backwards', whereby employers of disabled individuals feel they are somehow going to extreme lengths to accommodate perhaps one employee. This is worth noting, precisely for the discursive implications this carries; not only are able-bodied people – here, the employer – assumed to be exceptionally flexible and malleable, but Davis argues that discourses of disability position disabled individuals are self-centred and narcissistic. Davis makes a critical point here by not only highlighting the ableist structures of workplaces in general, but further, discourses of sovereignty as to whether a disabled persons' *request* for equal access is actioned, or not. Indeed, he states that 'the implication is that to redress a problem, the redresser must engage in a painful, extreme action' (2000, p. 199). In this way, discourses of normativity are enforced and maintained, for even if access requests are met, the employer is still considered to have

'bent over backwards'. Similar to old age, I find Davis' argument aligns with the way that nursing homes are designed as sites of medicalised quarantine, as will be argued throughout this thesis. To 'redress', to use Davis' framing, towards a more homely feel is, thus, to bend over backwards. Hence, the strategies and somatechnologies to be explored throughout this thesis will expose the problematic biopolitical and ethical dimensions of anti-aging that constitute neo-eugenic hygiene.

My contention is not simply that *all* anti-aging practices are bad, or necessarily that we should not aim to 'cure', reverse or prevent the onset of old age. Rather, the contention is that the ways in which western society is aiming to achieve this goal draws upon neo-eugenic ideologies of hygiene. It is not simply a matter of achieving the goal, but importantly, how this goal is achieved. To demonstrate the danger of our current anti-aging pathways, this thesis examines the relationship between biopolitical governance and ethical philosophy. The revision of humanity, then, can come to be seen as problematic, perhaps because of the disciplining of old age as a scientific quandary.

For example, scientific research that looks firstly at the physiological and biological components of aging, as represented through oxidative stress and other cell damage, cannot be meaningfully separated from understandings of social, cultural and psychological components of aging. This thesis will interrogate all three approaches through the term 'aging'. It is the increasing understanding of aging as a result of mitochondrial DNA damage, telomere shortening, and oxidative stress that continues to mobilise anti-aging research and thus promote aging as not only a health concern, but as a disease-state. I argue throughout this thesis that the scientific understanding of age has led to the medicalisation of old age, and further, has influenced the design and implementation of both institutionalised and governmental policies

and treatment protocols. Indeed, as Walker (2008, p. 363) maintains 'when policymakers propose practical solutions to social problems those solutions are based on an implicit set of beliefs about the nature of the social problem and its causation'. Of critical concern here, though, is the construction by policymakers as intervening in a crisis – that is, policy frameworks become a site for both crisis construction and crisis management (Estes 2001), which arguable enables discriminatory discourses to be embedded within both governmental and institutional policy.

While the scientific approach to aging is mobilised in this thesis as the primary mode to understand the 'term', it must be noted that the three approaches – biomedical/biological, psychological and social science models – operate together in complicated ways. Indeed, I argue that the scientific approach to aging is influenced by socio-cultural and psychological models of the age body, and vice versa. The complicated ways in which these beliefs of old age are constructed is a critical concern for this thesis, and as such, it is the combination of these methods of controlling the aged body that I argue formulates what I term 'gerontological hygiene'; by this term, I mean the systematic removal of old age through neo-eugenic and biopolitical regimes that seek to not only frame old age as a disease-state, but also as avoidable through neoliberal regimes of self-assessment. Importantly, gerontological hygiene is inscribed by those asymmetries of power exercised by institutions, governments and perpetuated through various forms of discourse, which this thesis will track. Critically, this term does not suggest the *killing* of elderly people, rather the complicated ways in which the biomedical turn aims to abolish old age as a corporeal state.

An understanding of age and aging, however, is not sufficient in answering the thesis question outlined above. Further, an understanding of my own framing of 'the elderly' is needed.

Critically, I do not intend to homogenise all elderly individuals by the catchall 'the elderly', which subjectifies certain bodies as an undifferentiated collective. There are a range of different subject positions surrounding elderly people – and their bodies – which must be noted. Indeed, modes of demarcation and difference surround issues of gender, sexuality, race, ethnicity, class, and (dis)ability. It is my contention, therefore, that discourses embedded within governmental, public and institutional policies systematically reduce the elderly body politic to a homogenised and undifferentiated group. As I move through the thesis, I purposely avoid the phrase 'the elderly' for these reasons, except where this language mimics that which appears in the policies and aged care prospectus that I detail in each chapter. In those cases, 'the elderly' will appear in scare marks, to highlight and interrogate the use of such homogenising language.

It is also critical to unpack my thesis question through the exploration of how everyday discourses and practices surrounding age can be understood through the application of cultural theories. For the purposes of this thesis, I will deploy a biopolitical framework, influenced heavily by French philosopher Michel Foucault. As mentioned earlier, I will also mobilise the concept of neoliberalism as a guiding principle for the thesis. The intersection of these frameworks with the more recent theoretical structure of somatechnics enable the thesis to move towards answering the thesis question, precisely for the role new and emerging advanced anti-aging technologies play in the abolition of age and the perpetuation of the gerontological hygiene. Further, this thesis will examine the critical relationship between biopolitics and ethics, where I analyse the problematic unethical dimensions of various emergent somatechnologies. The inter-relation between these two disparate fields is critical in understanding the dangerous moves being made in an attempt to abolish age. As such, I will now outline the theoretical frames of biopolitics and neoliberalism.

Foucauldian Biopolitics

While Michel Foucault is generally credited as coining the term biopolitics in his lectures of 1978-9, many scholars before him had in fact identified similar notions. In fact, biopolitical thought can be traced back to the early 1900s when Rudolph Kjellén first employed the term to denote the science of life and the 'laws of life that society manifests and […] promote' (Kjellén 1920, p. 4). Foucault re-imagined biopolitics during the 1970s in order to provide an analytical interpretation of colonialism and racism, and also a theoretical framework for mechanisms of power which aimed to govern both individual bodies and a nation's population. Nadesan (2014, p. 167) acknowledges these complex regimes of power when she asserts that 'power may be centralized in a sovereign figure, or it may be dispersed throughout daily life in the form of laws, social norms, and personal habits'. The shaping of the individual, and the individual *body*, is important to mark here, precisely as biopolitics operates at both the micro and macro level. As Nikolas Rose furthers, 'the regulatory apparatus of the modern state is not something imposed from outside upon individuals who have remained essentially untouched by it. Incorporating, shaping, channelling, and enhancing subjectivity have been intrinsic to the operations of government' (Rose 1999, p. 217). Importantly, too, Nadesan further acknowledges that power can be resisted. Thus, while power in its various manifestations may impose strict regimes that shape daily practices, there exists the possibility for active resistance, as will be shown later in this thesis through a case study of Veronica Gardens Nursing Home in Sydney.

Scholars in the years since have re-interpreted what Foucault (1990, p. 140) originally traced back to the sovereign power over life and death and what he termed the 'calculated management of life'. For Foucault (1990, p. 136), the link between sovereignty and biopolitics

meant that biopolitics was 'essentially a right of seizure: of things, time, bodies, and ultimately life itself'. Indeed, '[t]o exercise sovereignty is to exercise control over mortality and to define life as the deployment and manifestation of power' (Mbembe 2003, p. 12). Biopolitics, then, can be viewed as a regime of control – of birthrate, life expectancy and so on. These modes of control can be seen throughout eugenic regimes, such as that of forced sterilisation and liquidation. 'Control, [then], is no longer just the necessary counterweight to freedom, [but] it becomes its mainspring' (Foucault 2010, p. 67) in the sense that biopolitical control creates notions of freedom and informs societies of what they are and are not allowed. Further, biopolitical control influences what people *should* do, which Rose (1999, p. 218) names as the 'therapeutic imperative'. 'It can even be said that the production of a biopolitical body is the original activity of sovereign power. In this sense, biopolitics is at least as old as the sovereign exception' (Agamben 1998, p. 11). Agamben's perspective on both sovereignty and biopolitics takes yet another turn, as his focus lands predominantly on the notion of *zoē*, or bare life. Agamben (1998, p. 10, emphasis in original) notes that 'the entry of *zoē* into the sphere of the *polis* – the politicisation of bare life as such – constitutes the decisive event of modernity and signals a radical transformation of the political-philosophical categories of classical thought'. Indeed, 'the inclusion of bare life in the political realm constitutes the original – if concealed – nucleus of sovereign power' (Agamben 1998, p. 11).

While some scholars – Nikolas Rose, for instance – point to the sixteenth and seventeenth century Europe as establishing a connection between 'the tasks of good government and the techniques of producing industrious, able, obedient, and disciplined subject (Rose 1999, p. 225), Foucault argues that it was during the eighteenth century that a paradigm shift occurred which changed the focus from the individual to a state's population. This can potentially be examined as the transformation of raw sovereign power into biopolitics, which is, as Foucault

(2008, p. 317) states, 'the attempt, starting from the eighteenth century, to rationalise the problems posed to governmental practice by phenomena characteristic of a set of living beings forming a population: health, hygiene, birthrate, life expectancy, race …'. Importantly, Rose (1999) tracks an earlier form of biopolitics, predicated on Christian ideology, rather than the more scientific and 'rational' mindset of the eighteenth century. Furthermore, 'biopolitics deals with the population, with the population as political problem, as a problem that is at once scientific and political, as a biological problem and as power's problem' (Foucault 2008, p. 245). Foucault, here, outlines the biopolitical notion of a population as 'problem', unruly and in need of control, and biopolitics, then, as a regime for this control of life, and indeed, *over* life. 'Biopolitics doesn't refer only or most prevalently to the way in which politics is captured – limited, compressed, and determined – by life, but also and above all by the way in which politics grasps, challenges, and penetrates life' (Esposito 2008, p. 30). Thus, biopolitics, in its necropolitical forms, operates as a method of reduction – that of *sacred* life into *bare* life, what Agamben denotes as *zoē* (1998) – and a justification, through its succeeding sciences, for the disenfranchisation of several modes of (human) existence. Both scholars – Agamben and Esposito – thus demonstrate how targeted populations 'are essentially denied life by withdrawing its means' (Nadesan 2014, p. 169). Processes of exclusion are invoked by the sovereign, then, as a means of 'symbolical[ly] designating populations as outside of, and even threatening to, the body politic' (Nadesan 2014, p. 169). Biopolitical strategies of control were adopted throughout various aspects of society, from the 'management of cities, space, and sociality in the name of minimisation of disease, to attempts to maximise the quality of the race through the administration of birth and death' (Rose 2006, p. 54). Likewise, the human body, which, for Foucault, 'is thus not "natural" but "created" and reproduced through medical discourse' (Powell 2006, p. 30).

The institutionalisation of the sick and diseased into places of quarantine – for example, the hospital – can be viewed as a manifestation of both biopolitical regimes and sovereign power. This notion of confinement is by no means a contemporary one. For example, during the seventeenth and eighteenth centuries when almshouses were deployed as a method of the removal of the inferior, 'the townsmen in the almshouse were the aged (typically in their seventies and fully deserving the designation of "ancient"), and a small group of them were acutely disabled, crippled or blind' (Rothman 1971, p. 40). Once a body is institutionalised and therefore removed from 'healthy' society, it can be argued that they become dehumanised. Specifically, in the sense that these bodies are reconfigured through the adoption of a new identity, whether it be 'diseased', 'ill', or 'patient'; that is, detrimental to society and perhaps even deemed as a 'life unworthy of life' (Esposito 2008, p. 194). Medical professionals, in this sense, acted on behalf of the sovereign, particularly when considering that the doctor and other medical professionals had the power instilled in them to end one's life if deemed incurable; for he 'possesses the knowledge of what qualifies as a valid life endowed with value, and therefore is able to fix the limits beyond which life can be legitimately extinguished' (Esposito 2008, p. 114). This, in turn, raises another rather potent question explored by Esposito (2008, p. 8): 'Why does a politics of life always risk being reversed into a work of death?' Indeed, Esposito's inquiry into the link between biopolitics and thanatopolitics also raises the question as to whether biopolitics and sovereign power are nothing more than regimes of sacrifice – if not *murder,* as in the Nazi context – for the perceived enhancement of the targeted population.

Important to note here is the connection between the enhancement of the targeted population and the notion of Social Darwinism, which influenced both political and scientific practices, particularly in the United States. Despite Darwin's theory originating in England, the 'United States took to the notion at an unusually fast pace, endowing it with a sympathetic reception'

(Hofstadter 1992, p. 5). Social Darwinism did indeed stem from Charles Darwin's initial notion of natural selection and denotes its application towards not only human society, but critically, towards the human itself (Rogers 1972). D. Collin Wells theorised about Social Darwinism in the early 1900s, defining it as:

> the general doctrine of the gradual appearance of new forms through variation; the struggle of superabundant forms; the elimination of those poorly fitted, and the survival of those better fitted, to the given environment; and the maintenance of racial efficiency only by incessant struggle and ruthless elimination (Wells 1907, p. 695).

Utilising Wells' definition, the argument can be made that Social Darwinism came with the 'assurance that evolution guaranteed the final fruition of human virtue and the perfectibility of man' (Hofstadter 1992, p. 16). Hence it is easily understood why American eugenicists found Social Darwinism to be of extreme interest, as it intrinsically matched their own beliefs that 'the same Mendelian concepts determining the colour and size of peas, corn and cattle also governed the social and intellectual character of man' (Black 2003, p. 2). The disenfranchisation of a wide range of (human) bodies in the wake of Social Darwinist theory reinforces notions of hierarchies of life and given that this theory – and others influenced by it, such as the "science" of eugenics – was so widely deployed in settler-colonial nations can partially account for the subsequent genocide that spanned generations. Hence, the deployment of Social Darwinism as a leading factor in political and scientific discourse can be interpreted as a biopolitical regime in which eugenics came to fruition. Social Darwinism, then, may be interpreted as an example of Esposito's (2008) earlier qualm of why a politics of life faces the perpetual risk of being made into a work of death.

Certainly, there is evidence enough for this to make a substantive claim for it, particularly when considering the sovereign power of the state. Where one may be inclined to consider the notion

of sovereign power as repressive, specifically for its seemingly despotic ability to control both the individual and the population, it can also be contextualised as productive. As Foucault (2012, p. 194) notes, 'we must cease once and for all to describe the effects of power in negative terms: it "excludes", it "represses", it "censors", it "abstracts" it "masks", it "conceals". In fact, power produces; it produces reality; it produces domains of objects and rituals of truth'. This is not to suggest that power does not exclude, conceal, mask and censor − in many ways, it does − but rather to suggest that processes of exclusion and concealment are themselves productive of bodies, subjects and populations.

Biopolitics as an apparatus of power is that which, 'beginning in the eighteenth century, took charge of men's existence, men as living bodies' (Foucault 1990, p. 89), and through the medical profession, this governance over existence and living bodies, became a central focus of western society during this era. That is, the sovereign power of the state, and its subsequent control over the individual, began to inscribe scientific and medical gazes, which 'brought with it a different way of seeing illness and well-being related to structural and personal spaces' (Powell 2006, p. 31); in relation to the human, the 'body defines, by natural right, the space of origin and of distribution of disease' (Foucault 2003, p. 3). Through the medical profession, the body then, comes to be seen as a site of inspection, infection, and danger; the individual body 'is the disease itself' (Foucault 2003, p. 15). Possibly as a result of the discovery of certain diseases as contagious, 'disease became constituted in the social body rather than the individual body, and deviant types were identified as needful of control for the sake of the health of the whole population' (Lupton 2012, p. 33). The health of the entire state or population became centralised and as Athanasiou (2003) states:

> [b]iopolitics, in the sense of political power concerned with managing human life,
> has always been intricately interwoven with thanatopolitics, the episteme of
> speculation on and rationalisation of death: from the obsessive fear of epidemic

disease in Europe after the Cholera epidemic of 1832 to the sinking of the *Titanic*

through which Europe at the beginning of the century found itself "confronted with

its own death" (Athanasiou 2003, p. 151-2).

This confrontation of death can perhaps be identified as the initiation of the construction of deviant bodies as dangerous. As perceptions of death began to change, so too did perceptions of how the living should be treated. Certain bodies were seen as dangerous and deviant; ultimately these bodies were constructed as needing isolation and, if seen as incurable, liquidation. The construction of the asylum was particularly significant for the deployment of specific bodies deemed as abnormal, subhuman, or some other variation that placed the body – and thereby, the subject – lower on a hierarchical structure of life. I now turn to a brief outline of neoliberalism as a foundational concept deployed further in Chapter 2.

Neoliberalism

Initially conceptualised in terms of deregulation of the economy and the decentralisation of power away from the government and towards the individual (Foucault 2010), neoliberalism establishes and enforces a system of regulatory practices, including legal, social, and political. I acknowledge that the term neoliberal can be understood in various ways, which infers that the term itself is quite ambiguous. For this reason, I mobilise the concept of neoliberalism within a Foucauldian framework which, as will be developed in this thesis, constructs the human worker as capital, and reconfigures the subject as *homo œconomicus*, where 'the populace … was presumed to be governed by the individual pursuit of liberty and market self-interest, tempered by prudence, and shepherded by the pastoral apparatuses of police' (Nadesan 2010, p. 7). Further, according to Todd May this reconfiguration

seeks to maximize his welfare by means of making the best use of his resources and

his environment. He is, in short, a capitalist in all aspects of his life. He sees the

> projects of his life in terms of enterprises that require certain inputs and have the
> possibility of yielding particular benefits (May, 2006, p. 156).

This notion of *homo œconomicus* is significant for any discussion of neoliberalism, for the construction of subjectivity, human use value, and notions of the risk society, are all embedded within this framework. Foucault (2010, p. 147) argues that '*homo œconomicus* … is not the man of exchange or man the consumer; he is the man of enterprise and production', hereby implicating the emergence of *homo œconomicus* as consistent with a discursive rupture that enabled the rise of neoliberal practice. Moreover, *homo œconomicus* curtails state power through the demonstration of the state's 'inability to master the totality of the economic field' (Nadesan 2010, p. 7; Foucault 2010, p. 292). Where Foucault characterises liberalism as formulated around commodities and consumerism, neoliberalism shifts perspectives to focus instead on individual enterprise and production. Rose (1999, p. 230) furthers this claim by stating that at the very heart of neoliberalism is the theme of enterprise, which comes to structure our lives as citizens. He notes that 'individuals are to become, as it were, entrepreneurs of themselves, shaping their own lives through the choices they make among the forms of life available to them' (Rose 1999, p. 230). It is seen here, then, that neoliberal governance forces individual responsibility within the market, decentralising the state's role. In the context of this thesis, neoliberal subjectivity becomes of extreme importance, precisely because the State's role appears decentralized in that older individuals are encouraged to self-assess their health, their needs and their social responsibility to remove themselves to a nursing home – as will be demonstrated in Chapter 2.

Importantly, as Mitchell and Snyder (2015) note, neoliberalism formulates the notion of *inclusionism*, precisely in relation to disability. While my thesis focuses on aging, there is an important intersection between old age and disability, specifically in terms of the strategies

deployed to either keep some 'abled' or 'young'. Carlson (2005, p. 137) states that through a Foucauldian lens, it is possible to ascertain that 'new means of producing knowledge produce distinctly new kinds of individuals'. Hence, the reformulation of both old age and disability in medicalised states can enable the emergence of new kinds of subjectivities. Mitchell and Snyder turn to the notion of inclusionism, by which they implicate policy surrounding the care and management of those deemed disabled by heteronormative standards of corporeal embodiment.

Indeed, they state that 'inclusionism has come to mean an embrace of diversity-based practices by which we include those who look, act, function, and feel different' (Mitchell & Snyder 2015, p. 4), thus reifying the value of those modes of embodiment coded as normative (Mitchell & Snyder 2015, p. 2). Critically, Mitchell and Snyder develop this framework of neoliberal inclusionism through a Foucauldian biopolitical lens, which 'from the eighteenth century forward, [was] conceptualized in relation to economic formulations of national strength and capital accumulation' (Nadesan, 2010, p. 63). While Mitchell and Snyder's (2015) work explicitly focuses on disability – which, for them, incorporates old age – I find their work transposable to the field of gerontology. Specifically, strategies of inclusion that I complicate in this thesis include productive aging, which is embedded within discourses of the categories of age. The theoretical frameworks of biopolitics and neoliberalism, on their own, may enable a critical inquiry into the topic at hand, however it is my contention that the ethical implications of treatment protocols and attitudes towards old age and aging are also of significance. Moreover, I argue that the development of anti-aging technologies re-animate neo-eugenic ideologies of perfection.

Somatechnics

It is through an ethical inquiry that the problematic dimensions of these technologies and their implications for bodies deemed 'elderly' or 'old' and the wider community are visibilised. The importance of advanced anti-aging technologies cannot be understated here, precisely because it is my intention throughout this thesis to mobilise several emerging anti-aging strategies, some of them technological. I deploy a somatechnic framework for this reason, where somatechnics can be understood as the 'mutual enfleshment of technologies and technologisation of embodied subjectivities' (Sullivan & Murray 2009, p. xi); in other words, the symbiotic relationship between technology and the body. Somatechnics posits that technology and the body are formed, and indeed *informed* by each other. Somatechnologies then,

> harbour possibilities for disruptions, counter-actualisations, destabilisations and for the creation of new selves, affinities, kinship relations, and cultural possibilities. Yet, they also contain within them the danger of being reterritorialised, of being dammed up by various apparatuses of capture – the state, the body politic, the nation, heteronormativity, neoliberalism (Sullivan & Murray 2009, p. xi).

This definition is critical for my thesis, precisely because I critique the use of anti-aging technologies as not only attempting to abolish age, but forcing a reconstruction of identities and selves, relations between ourselves and others and call attention to ethical dilemmas surrounding emerging cultural possibilities. Critically, as well, the development of anti-aging somatechnologies are specifically mutually entangled with, as Sullivan and Murray (2009) highlight, government bodies, neoliberalism and the body politic. The inter-relation between somatechnics and biopolitics is critical here, precisely for the ways in which emerging anti-aging somatechnologies are predicated on regimes of control over life. Hence, I frame technologies of anti-aging as somatechnologies and further mobilise their development and

emergence as ethically problematic. As such, I now outline Levinasian ethics, a framework which will be deployed further in Chapter 4 of this thesis.

Ethics

In chapter 4 of this thesis I outline slavery in terms of the ways in which non-White individuals (amongst many others) were assumed to be less than human and trace the genealogy of the concept of the human to problematise current conceptions of some elderly bodies as diseased bodies. I now want to critically amplify my analysis precisely by focusing on the foundational role of ethics in both the discursive construction of the nonhuman and, significantly, in the development and deployment of neo-eugenic somatechnologies. The historical treatment of certain bodies and the ways in which they were discursively produced demands ethical questioning; indeed, what is ethics? How are ethical boundaries to be established, and to whom/what shall they be applied? How far can ethical boundaries be stretched to develop 'cures' for serious diseases? In relation to this thesis, specifically, what are the ethical boundaries established in considerations of old age as disease, furthermore, of aiming to 'cure' old age?

These are some of the questions that Chapter 4 will examine, specifically in relation to the often problematic history of human experimentation that necessarily forces the human to examine what – and more specifically, who – has been considered human. Through an examination of the history of longevity, specifically the developments of rejuvenation and anti-aging technologies by 'medical professionals'[2] such as Leo Stanley, John Brinkley, Serge Voronoff, and Eugen Steinach, Chapter 4 will argue that rejuvenation and anti-aging

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[2] This term has purposefully been placed under interrogation, as further in this chapter, the qualifications of some of these individuals will be challenged.

technologies are rooted in eugenic ideology, thus enabling a critical discursive analysis of ethical principles, and indeed, the absence of ethical principles in the construction of contemporary anti-aging technologies. To trace the history of European longevity movements, I deploy the critical example of xenotransplants, precisely to examine the co-implication between human and nonhuman subjects. Xenotransplantation has historically taken many forms, such as blood transfusions between sheep and humans, however the context of xenotransplants for this chapter is that of testicular transplants. These experiments were conducted originally on prisoners so that medical practitioners could observe the effects for sexual rejuvenation (Stambler 2014b). This movement grew into the 1920s and 1930s and acted as one of the most popularised and commodified forms of longevity treatment in the early twentieth century, hence its critical value for Chapter 4.

Studies into ethics have been carried out by many scholars, most notably, though, by Emmanuel Levinas, whose work in the field of ethical inquiry has shaped and influenced important contemporary scholars such as Critchley (2007), Zylinska (2005), and Hand (2009). Indeed, Levinas' work proves critical for contemporary notions of ethics, particularly surrounding 'essential questions about democracy and secularism, state and security, asylum and rights, religion and rationalism' (Hand 2009, p. 3). The applicability of Levinasian ethics to various aspects of contemporary society is significant here, and by no means has Hand outlined every avenue to which this philosophy of ethics can be applied. Indeed, 'an ethical event occurs in every encounter with difference, with the "face" and discourse of the other that addresses me and makes me both responsible and accountable' (Zylinska 2006, p. 81). As such, this thesis will adopt Levinasian ethics to examine the contemporary state of ethical boundaries in medical science and the ethical concerns associated with gerontological hygiene research. Subsequently, this type of research demands further consideration of ethical questions,

including how and where ethical lines are constructed, the control of and access to the technology, and critically, the implications for human subjects. To undertake this line of inquiry, the GeroScience Network will be examined in Chapter 4.

Chapter Outlines and Empirical Ground

To answer my research question, I employ several poststructural theorists, such as Michel Foucault, Emmanuel Levinas – as outlined above – Jacques Derrida, Martin Heidegger and Hannah Arendt. These theorists offer foundational and critical philosophical inquiries into structures of power, ethics, and conceptualisations of the human. Indeed, Foucault's conceptions of biopolitics and governmentality operate throughout the thesis as primary frameworks. Derrida's deconstruction of the concepts of the [hu]man and the animal is essential in answering my thesis question, precisely because notions of gerontological hygiene are predicated upon the discriminatory discourses that position hierarchies of life. It is my contention that elderly individuals are currently subjugated through medico-scientific and governmental regimes of power that preference youth. The role of ethics in this thesis, then, cannot be understated, particularly, as I demonstrate in Chapter 4, because the field of biogerontology rests on the systematic dehumanisation of elderly individuals. The theoretical framework of Levinasian ethics is critical for this thesis in that his work enables the exposure of unethical treatment towards elderly people in general, but more specifically those who present with 'symptoms' of old age, both historically and in contemporary western nations. Further, the intersection between biopolitics and somatechnics has thus far been under-explored in the fields of cultural- and bio-gerontology. This thesis attempts to address that gap.

It is important to note that this thesis is produced in the field of Cultural Studies, rather than sociology or biomedical gerontology, hence the theoretical framework – as outlined above –

mirrors that of a cultural studies discipline. Thus, I aim in this thesis to expose the manifold ways in which anti-aging somatechnologies are intertwined with biopolitical and governmental regimes aimed at the eventual abolition of old age. Further, currently in the sub-discipline of cultural gerontology, there are several texts that examine the connections between age and gender (Edmondson 2013; Twigg & Martin 2015a, Twigg & Martin 2015b) age and sexuality (Brettschneider & McCoy 1988; Winn & Newton 1982; Gott 2004; Gray & Garcia 2012; Worsfold 2011), age and health (Cardona 2008; Asquith 2009; Chari et al. 2015; Burau et al. 2016;), while a growing number of researchers are interested in the connection between old age and biopolitics (Katz 1996, 2005; Dannefer & Phillipson 2010), as well as aging and narrativised depictions of dementia (Hartung & Meierhofer 2009; Swinnen & Schweda 2015) I situate this thesis in this emergent body of scholarly work that is critically examining age through a range of contemporary cultural theories.

In Chapter 1 use Foucauldian genealogy and archaeology to expose the various ways older individuals are shaped and produced through a medicalised lens. I mobilise both the genealogical and archaeological approaches specifically because I trace the emergence and development of the biopolitical and governmental regimes underpinning constructions of certain elderly bodies as medicalised subjects. Indeed, the field of gerontology comes under question throughout this chapter – what are the discursive enunciations, discontinuities, transformations and ruptures that enabled gerontology to firstly become a discipline, and secondly, to emerge the way it did, as a distinct discipline from geriatrics? This critical question can aid in understanding what Stephen Katz calls the 'disciplining of old age' (1996). Further, the more recent emergence of biogerontology, which is predicated on scientific and medical approaches to the control and abolition of old age, is dependent upon both an archaeological approach and genealogical method of inquiry. This inquiry is further underpinned by the

concept of eugenics, which as Chapter 1 demonstrates, is inextricably connected with normative assumptions of the human – and the human *body*. I argue that eugenic ideology responsible for the tragedies that culminated in World War II have not been eradicated. Rather, similar ideologies re-emerge in contemporary western societies as *neo-eugenics*, which enables and, at times, justifies specific confinement and treatment protocols for certain elderly bodies. Where Chapter 2, as outlined below, mobilises the space of the nursing home as an empirical site of inquiry, Chapter 1 first establishes the technological dimensions of neo-eugenic discourse.

In Chapter 1 I mobilise the case study of the pseudo-medical anti-aging somatechnology Trinfinity8 to expose the discursive production of aging-as-disease. As will be seen, this technology is predicated on the notion that old age is a disease-state and offers a holistic approach to its reversal, effectively *curing* the user of the ailment of old age. Embedded in this technology are notions of New Age spiritualism intermixed with the science of genetics. Trinfinity8 uses medicalised knowledges of DNA to sell anti-aging to the consumer, however the science – as detailed in Chapter 1 – is questionable. This technology is buttressed with emerging hard science approaches such as caloric restriction, adipose therapies and pharmacological approaches through the repurposing of Metformin, which have conjured 'successes' under laboratory conditions with testing on various non-human species. It is significant to call attention to both pseudo- and hard- science approaches, precisely to demonstrate the extent anti-aging discourses permeate the biomedical spectrum. I argue that these somatechnologies pursue a neo-eugenic ideology predicated on the assumption that old age is not only undesirable, but further, is something that needs to be abolished biomedically.

Chapter 2 points to the critical role of anti-aging technologies in perpetuating what I name, as discussed above, as 'gerontological hygiene.' I frame this as both a discursive neo-eugenic movement and a regime of biopolitical practices aimed towards the abolition of age. This chapter mobilises a neoliberal framework to explore the complicated ways in which subjects are constructed as *homo œconomicus*. Critically, I apply this notion to specific forms of the elderly body to expose the discursive regimes of self-surveillance and the manufacturing of categories of age – such as Third and Fourth Age – which are manipulated for both economic gain and rejuvenated understandings of normative bodies. There is a significant amount of research on the lived experience of elderly individuals and methods of retaining independence are widely adopted – such as active, productive and healthy aging programs, examined in Chapter 2 of this thesis – however, there has been little work that critiques the value of these programs or how they manifest. Indeed, Chapter 2 argues that these programs are developed less as a method of enabling elder autonomy and more a method of reducing healthcare costs; I do this through an examination of aging policies and an analysis of the structure of nursing homes in the United States, the United Kingdom and Australia. Specifically, I draw from the example of the Regis Nursing home franchise, highlighting problematic areas of their Constitution and daily practice, particularly in relation to Foucauldian surveillance techniques. In this way, I argue that these programs instil a discourse that suggests people are no longer *allowed* to be old. Further, this discourse operates through medical, scientific and governmental communities, which I argue perpetuate gerontological hygiene. The critical question then develops – what is it to be human, and who can be considered in this category?

In Chapter 3, I address this question; I examine two critical theorists' conceptualisations of the human as a category. I do this precisely because the complexity of the research question can be more easily understood by acknowledging the problematics of a stable definition of the

human. Chapter 3 of this thesis exposes the trajectory of 'humanness' that has historically enabled certain groups to be denied ethical treatment and stages a critique of the broad field of humanism. The question of the human is critical for moving towards answering my research question, precisely because I argue that notions of 'humanness' are predicated on colonial assumptions of the white, abled, male body. Categories are often defined by what they exclude, thus I aim to expose the invisibilisation of many elderly people from stringent constructions of the human. To do this I trace the works of Martin Heidegger and Hannah Arendt. Each theorist explores the strict criteria one must meet to be seen as human, enabling my critique to point to the problematics that underpin such criteria. Chapter 3, then, stages a critique of humanism and philosophical constructions of the category 'human' to expose the exclusion of certain groups from the human and call attention to the ways in which contemporary western medico-science justifies unethical practice surrounding old age.

Chapter 4 builds on Chapter 3 to demonstrate aspects of unethical practices occurring in medicalised quarantine sites such as the Regis and Aveo nursing home franchises. I frame nursing homes as sites of medicalised quarantine, precisely because of the ways in which these sites mimic the design and layout of hospitals. Further, as examined in Chapter 2, nursing homes across the United States, the United Kingdom and Australia operate through biopolitical regimes of control, under the guise of care. I examine the method of care delivery, the type of care residents are 'entitled' to and the notions of both surveillance and self-surveillance through a Foucauldian framework. This thesis also examines the NSW Aging Strategy (2012), precisely because it evidences the construction of elderly people as homogenised, undifferentiated and unproductive neoliberal subjects, and the biopolitical regimes of control that seek to construct old age as disease-state. While I focus on one policy in particular in the body of this chapter, I note there are several aging policies of significance. For example, the *Age Discrimination Act*

2004 (Amended 2013) provides a vague and broad overview of the ways in which it is legal to discriminate against people on the basis of their age. Indeed, the Act states, '[i]t is not unlawful to discriminate on the ground of age if a particular exemption is applicable (Divisions 4 and 5 of Part 4)' (Age Discrimination Act 2004). The Act, in conjunction with other existing age policies, such as the *Aged Care Act 1997* (Amended 2014) enables the poor treatment and quarantining of many elderly people and perpetuates the notion that old age is inherently problematic.

Further, this chapter will mobilise the contemporary case studies of telomere-based therapies, stem cell therapies, and mitochondrial gene therapies to examine the current manifestation of ethical considerations in the search for anti-aging commodities. As such, this chapter begins with a critical examination of ethics to consider notions of the human from a medical science perspective. Furthermore, this section of the thesis aims to apply the significant work of Heidegger, Derrida and Arendt in considerations of precisely who/what shall be categorised as human by critiquing methods of medical science and the discursive production of disease. Considerations of ethics must be accounted for here and this line of inquiry will enable this thesis to develop an argument surrounding the ethical boundaries that have been created, and broken, in the quest for the 'cure' for old age; ultimately, I apply questions of ethics to contemporary notions of gerontological hygiene through an examination of the GeroScience Network[3], an amalgamated term for a network of institutions focused on the erasure of age. Further, the emergence of Google's initiative Calico towards the acquisition of immortality and the secrecy surrounding their activity will also be examined. Chapter 4 stages an ethical inquiry into the development, emergence and use of such anti-aging somatechnologies. In this

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[3] The GeroScience Network consists of the Mayo Clinic, Buck Institute, Barshop Institute, Albert Einstein College of Medicine, Stanford, Harvard, Johns Hopkins, and Wake Forest Universities, and the Universities of Washington, Arkansas, Minnesota, and Michigan.

chapter I attempt to identify the demarcation between human and nonhuman, as understanding the differences here – and who/what shall be denoted as human – enables an analysis of the (un)ethical relations at stake in the deployment of both policies and procedures, and anti-aging somatechnologies.

As noted above, I frame ethics through Levinasian philosophy, however I also adopt Derridean understandings of ethics to acknowledge the incomplete and sometimes problematic dimensions of Levinas' work. Despite its shortcomings – such as Levinas' overly anthropocentric perspective – I find his concepts of Other and Same highly valuable for my own analysis. That is, I argue that elderly subjects are dehumanised through unethical regimes of Othering and a systematic negation of human status as discursively built into various institutional and governmental age-based policies. Building on my analyses in Chapter 2, this chapter further mobilises the nursing home as an empirical site, as well as examining the use of anti-aging technologies of telomere-based and stem cell therapies, mtDNA manipulation and gene therapy. As stated above, the nursing home is deployed again as a medicalised quarantine site in Chapter 4 but is also further examined through dimensions of ethics. Indeed, I build on my problematisation of the human in this chapter by asking how discourses of the human influence, shape and inform the structure of the nursing home. Moreover, how are biopolitical, neoliberal and governmental regimes coalescing in these spaces and what are the ethical implications or dilemmas here?

The thesis concludes by offering a possible and plausible trajectory for future anti-aging research, based on emergent technologies in the field of nanotechnology. While it is acknowledged that the potential use of nanotechnologies are manifold, there are specific ways in which the connection to anti-aging can be made. It is important to understand that my thesis

cannot conclude, per se, precisely because this field of biogerontology and its quest to abolish age is perpetually growing and evolving. I re-enforce my position in this conclusion, that is to say, anti-aging is not *inherently* a bad thing, but that the current trajectories of anti-aging research are fraught with problematic dimensions. I offer a brief posthumanist framework to address the ways in which the current and developing technological routes will further mobilise gerontological hygiene. That is, through immersive advanced nanotechnologies and the somatechnologies examined throughout the thesis chapters, the body of the human is likely to be recalibrated in such a way that old age simply no longer exists.

Chapter One

The Biopolitics of Somatechnologies and Diseased Bodies

This chapter draws upon the theoretical framework of biopolitics established in the Introduction to this thesis, so that I may begin to address the primary concerns of this thesis. As stated in the Introduction, the overarching concern of this research is, as I hereby label it, the gerontological hygiene movement. To interrogate the manifold ways in which older subjects are (re)-produced through a medicalised lens, I firstly trace a genealogy of the biopolitical and governmental regimes that underpin this production. As such, this chapter utilises Foucauldian biopolitics to examine the inter-relations between old-age-as-disease and the deployment of evolving anti-aging somatechnologies.

Further, I draw upon eugenics as a framework for enforcing regimes of hygiene, proposing that similar eugenics discourses are in operation in an attempt aimed at the abolition of age. Neo-eugenic discourses, as will be shown in this chapter, are embodied within several emerging somatechnologies, such as Trinfinity8 and caloric restriction. Importantly, the ranges of technologies that are assessed in this chapter demonstrate a critical shift in approaches to aging, and importantly, treatments for anti-aging. That is, Trinfinity8 represents the fusion between New Age spiritualism with technology, discussed here as example of junk science, whereas anti-aging treatment protocols developed through caloric restriction and adipose therapies come to formulate hard science. What is at stake in this chapter are the discursive underpinnings of those technologies. That is, discourses underpinned by biopolitics, neo-eugenics and governmentality that influence the emergence – and shape – of anti-aging somatechnologies.

Deploying these technologies as contemporary case studies of neo-eugenic approaches to the abolition of old age is a critical step for this thesis. Precisely by examining the ways in which these technologies are co-implicated with what I frame as medicalised quarantine sites, that is, nursing homes operate as care facilities for many elderly people. I argue that these facilities are critically influenced by the same neo-eugenic discourses of abolition embedded within anti-aging somatechnologies. Bound within medicalised discourses, these spaces come to represent quasi-camp zones, which institutionalise certain bodies – in this case, 'old' bodies – as unacceptable for mainstream society. Nursing homes and anti-aging somatechnologies, I contend, are underpinned by a series of discourses that operate under the assumption that old age is a disease-state; hence, these institutions and technologies are deployed as dispositifs of control, and ultimately, come to underpin gerontological hygiene.

Biopolitics

Disease can be understood as a blanket term for countless illnesses and deficits affecting not only the human, but also almost every life form in existence, including plants, animals, and even bacteria. The term disease denotes a problem that inhibits any species from performing its expected roles (Haber and Smith 1971). Operating outside the medical profession, but critically engaging within it, Michel Foucault configured the spatiality of disease, the hierarchisation and organisation into species and families, and identified the primary principles of this configuration of disease. The configuration and classification of resemblance of diseases acts as one of Foucault's primary principles, outlining also the ordering of the diseases based on resemblance to one another (Foucault 2003, p. 8). The classification of varying degrees of disease is potentially what is at stake in the construction of specific types of human bodies as diseased and, ultimately, as incurable. In the case of the human, disease is often discussed as a condition that negatively affects corporeality, such as cancer, diabetes,

HIV/AIDS, among many others. However, in an age of constant technological progression, the parameters for understanding diseases have begun to shift to include categories such as aging; this is largely due to the development of the notion of transhumanism[4], which has rejuvenated eugenic fears of the imperfect human. As Simon Young (2006, p. 32) states:

"Human" – the word is synonymous with suffering and failure. "I'm only human"; "the human predicament"; "the tragedy of the human condition": they all tell the same truth – that humanity is a disease-state from which to be cured!

Not only does Young argue that humanity itself is a disease-state, but he also elucidates fears of our own imperfection. It is precisely this fear that transhumanists aim to overcome through advanced technologies that seek to fundamentally improve the human condition through enhancement technologies; not only does the transhumanist discourse ascertain that there will be no room for individuals such as those exhibiting 'symptoms' of old age in their future, but also that aging will be eliminated through these same technologies (McIntosh 2008). I position the resulting technologies as 'somatechnologies', as detailed in the Introduction to this thesis, precisely because of the interrelation between body and technology. Indeed, somatechnologies are predicated on the notion that the body is always-already technologized, which transhumanism does not suppose.

The development of somatechnologies aiming to eradicate diseases, including aging, can be seen as an extension of humanist ideologies that sought to create the perfect human, and as such, aids in the construction of aging and disability as diseases that need to be 'cured'. Indeed, these bodies are formulated largely as nonproductive; those bodies which, according to Mitchell and Snyder (2015, p. 214), 'represent those who belong to populations designated "unfit" by capitalism'. The inter-relation between the medicalisation of these 'nonproductive'

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[4] I mention transhumanism here only briefly, for the theoretical framework of transhumanism does not align with my own. Hence, I will use somatechnics for my theoretical framework throughout.

bodies and the neoliberal formulation of human-as-capital cannot be overstated here, precisely because 'in the realm of medicine, the norm still holds powerful sway. No one wants to celebrate abnormality in the medical sense – no one is calling for valuing high blood pressure or low blood sugar' (Davis 2011). This thesis will understand diseased bodies as inclusive of both old age and disability, however problematic that may seem, to examine the technologies that seek to revive biopolitical hierarchies of life and eugenic regimes. It is important to include disability in this discussion, precisely because the ways in which disabled bodies are formulated as nonproductive can also be applied to those exhibiting old age. This chapter seeks to analyse how the imbrication of biopolitics and regimes of normativity discursively construct aging as a disease needing to be cured.

The construction of aging-as-disease within a Western context can certainly be seen as a neo-eugenic biopolitical movement reinforcing notions of the sovereign power over life and death. As Phillipson (2006, p. 201) states, though:

> research on ageing can no longer be confined to local or national cultures, as it is shaped by a transnational context, with international organisations (such as the World Bank and International Monetary Fund) and cross-border migrations creating new conditions and environments for older people.

Phillipson's point is critical point here, precisely because healthcare in Australia is intertwined with policy frameworks derived from both the United States and United Kingdom. I argue that this globalised approach to aging compels us to understand ageing as a transnational construct. The sovereign power over life and death is ever more prominent here, specifically in that certain bodies are given priority and favour over others; indeed, certain bodies are deemed as not only undesirable, but unacceptable. The biopolitical construction of certain bodies – including, but certainly not limited to the aged– as diseased, is not limited to a contemporary context. Indeed, biopolitics has experienced a long global history, of which its foundations

began with colonialism and discourses of degeneracy and widespread racism (Foucault 2003).

In order to understand the trajectory of Nazi Germany in regard to biopolitical regimes of genocide, one must first look to where these ideologies began. 'The material premises of Nazi extermination are to be found,' Achille Mbembe argues, 'in colonial imperialism on the one hand and, on the other, in the serialization of technical mechanisms for putting people to death—mechanisms developed between the Industrial Revolution and the First World War' (Mbembe 2003, p. 18). Despite the lack of public awareness of this, biopolitics and eugenics did, 'in fact, blossom in the United States, Canada, Britain, and Scandinavia, not to mention elsewhere in Europe and in parts of Latin America and Asia. Eugenics was not therefore unique to the Nazis' (Kelves 1999, p. 435). As Kelves demonstrates, the first eugenicist movements did indeed originate in America, which, in 1907, introduced forced sterilisation to the state of Indiana, upholding widely held beliefs of the need to remove subjects classified as 'inferior' (Lantzer 2011). Forced sterilisation, of course, was intrinsically based on eugenic principles and was carried out in 30 American states by 1931 (Garver & Garver 1991). Further, as Hubbard (2006, p. 94) states, German eugenics found its roots not only in American discourses underpinning sterilisation practices, but also in 'arguments and policies developed largely in Great Britain'. Nazi Germany must then be seen as a culmination of a worldwide eugenic program designed to rid humanity of 'inferior and foreign elements' (Hubbard 2006, p. 94).

Those who were forcefully sterilised may not have been identified specifically as *diseased*, however the construction of inferiority has shown to be instrumental in the development of certain bodies as diseased. This notion of inferiority is most usually associated with notions of Nazi eugenics during the liquidation of countless individuals (MacKenzie 1976; Farrall 1979; Mitchell & Snyder 1997; Garver & Garver 1991; Brechin 1996; Kelves 1999; Black 2003; Rose 2006). Importantly, Nadesan (2010, p. 154) marks that while Foucault draws upon Nazi

regimes for his analysis of biopower as operated through state sovereignty, 'his analysis of this modality of power can apply to any state that defines security biopolitically and then acts violently in its defense'. As such, regardless of what terminology has been used to historically demonstrate the undesirability of certain bodies – and subsequently, certain modes of existence – these people were nevertheless constructed as something in need of either redemption through medicine, or eradication for incurability. Hence, positioning those deemed 'old' as diseased not only enforces notions of hegemonic bodies, but also demonstrates a resurgence of eugenic regimes – that is, neo-eugenics – within a biopolitical framework. Biopolitics, as defined by Foucault (2010, p. 317), is an attempt 'to rationalise the problems posed to governmental practice by phenomena characteristic of a set of living beings forming a population: health, hygiene, birthrate, life expectancy, [and] race'. As stated previously, racial ideologies can be seen as the foundations of biopolitics, and importantly, the position of those ideologies within colonial discourse not only enabled biopolitical regimes, but also, critically, necropolitics. As Achille Mbembe (2003, p. 17) argues:

> that race (or for that matter racism) figures so prominently in the calculus of biopower is entirely justifiable. After all, more so than class-thinking (the ideology that defines history as an economic struggle of classes), race has been the ever present shadow in Western political thought and practice, especially when it comes to imagining the inhumanity of, or rule over, foreign peoples.

Control over foreign peoples is but one aspect of the notion of racism as a biopolitical technology. In fact, 'in the economy of biopower, the function of racism is to regulate the distribution of death and to make possible the murderous functions of the state' (Mbembe 2003, p. 17). Nadesan (2014, p. 167) further states that 'biopower is a formulation of power believed to be unique to the modern era in that it emphasizes the government of life'. Hence the construction of what Agamben terms as the *camp* (1998), which ultimately allowed not only sterilisation, but also the necropolitical power to kill, enabled by colonial biopolitical regimes

and their racial ideologies. A critical aspect of biopolitics is the existence of the camp and its removal of specifically targeted individuals for the betterment of society. The notion of segregation became widely practiced in America in the early 1900s; the aim of segregation was ultimately the same as sterilisation – to dissolve undesirable bloodlines by destroying the reproductive capability of those deemed undesirable, unfit, or inferior (Black 2003). Segregation took the form of what is now known as the camp, – also practiced in the 1800s, described as 'confinement' and 'Retreats', which will be discussed further in this chapter – the initial characteristics of which were 'colonial war, an implicit racial/ethnic difference in the interned population and the invocation of a "state of exception" based on considerations of "national security" rather than criminal behaviour on the part of those imprisoned' (Perera 2002). In fact, it was this desire for national security that allowed a social-democratic government to deploy the first camps in Germany (Perera 2002), which declared 'a state of siege or of exception and a corresponding suspension of the articles of the German constitution that guaranteed personal liberties' (Agamben 1997, p. 107).

In this way, the camp as a biopolitical form can also be seen as intrinsically bound up with Agamben's notion of the 'homo sacer' (1998), which also pertains distinctly to eugenic regimes. However, while Agamben focuses predominantly on Nazi eugenics and the notion of the camp, this thesis will examine the American history of eugenics and the social uses to which this (pseudo-)science was put; it is important to understand that the concept of an inferior race, and consequently ideas on how to improve and eradicate inferiority, did not begin with Hitler. Indeed, as described above, long before eugenic regimes of racial cleansing emerged in Nazi Germany, eugenics was a well-practiced pseudo-science within the United States (Black 2003).

The resurgence of eugenic ideas – that is, neo-eugenics – can be seen in contemporary Western society through the development and deployment of both anti-aging and anti-disability technologies. Marketed as rejuvenation technologies, anti-aging 'medicine' has risen to be acknowledged as more than cosmetic creams that eliminate wrinkles; indeed, anti-aging medicine claims to restore and rejuvenate the body, and most importantly, reverse – or even 'stop' – the aging process. Such technologies as Trinfinity8 – an anti-aging technology that uses computer software to supposedly enhance and improve the mind, the body, and the spirit of those seeking life extension and that I will discuss in detail below – demonstrates emerging anti-aging 'medicine' that boasts the potential for immortality.

The deployment of anti-aging and anti-disability technologies can be seen as a form of neo-eugenics in the sense that it seeks to eradicate what are perceived as the inferior members of the species. Where once inferiority was generally understood as 'immigrants from eastern and southern Europe, partly because [of] their representation [as] criminals, prostitutes, slum dwellers, and feebleminded' (Kelves 1999, p. 436), in a current Western context, the notion of the inferior may very well be expanded to include specific forms of the elderly. While the treatment of the 'inferior' and the 'diseased' necessarily needs to be viewed quite differently today than during World War II, similarities can be drawn to American eugenics in relation to their quest to isolate, quarantine, and ultimately, exterminate. It is critical, too, to acknowledge that not only are non-normative bodies a socio-cultural construct, but so too, is the notion of normativity. Lennard Davis demonstrates this in relation to disability, precisely by arguing that 'the "problem" is not the person with disabilities; the problem is the way the normalcy is constructed to create "problem" of the disabled person' (Davis 2006, p. 3). The 'problem', as Davis puts it, not only concerns the disabled individuals, but can be expanded further to what Mitchell and Snyder (2015, p. 40) refer to as 'nonproductive bodies'. That is, normalcy is

constructed around hegemonic understandings of the body that exclude certain others; of course, this is specifically what historical eugenic regimes were predicated upon. In a contemporary western context, then, it is critical to mark the resurgence of normative ideologies in relation to old age. Where Hubbard (2006, p. 93) argues that 'people shun persons who have disabilities and isolate them, so they will not have to see them. They fear them as though the disability were contagious', similar arguments can be made in relation to current treatment protocols for certain elderly bodies, specifically in relation to what I name as medicalised quarantine sites, or nursing homes[5].

This chapter, then, will examine the notion of biopolitics through the emergence of somatechnologies in relation to diseased bodies, and the resurgence of neo-eugenics in a contemporary context. The deployment of anti-ageing somatechnologies across a broad spectrum of scientific disciplines – such as that of Trinfinity8, which I discuss in the next section as junk science, and hard science technologies and practices such as caloric restriction and adipose therapies – illustrates the durable nature of a paradigm of enhancement and notions of not only acceptability, but also of normativity and homogeneity. Moreover, the differences between Trinfinity8 and caloric restriction enable a tracking of anti-aging research from the realm of junk science to hard science. Before I can engage in a critical examination of Trinfinity8, which relies on the commodification of new age spiritualism to strive for its legitimacy, I now turn to a brief history on longevity and rejuvenation techniques[6].

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[5] This will be introduced more appropriately in the Origins of the Camp section in this chapter and developed more effectively throughout Chapters 2 and 4.

[6] Importantly, this history is developed in Chapter 4 of this thesis, in specific relation to ethics.

A Brief History of Longevity and Rejuvenation Techniques

A more in-depth history of European rejuvenation techniques will be presented in Chapter 4 of this thesis; however, it is prudent for contextual reasons to introduce a brief history here. I will focus primarily on the twentieth century in this section. There is some crucial research that predates the twentieth century, which I outline here, such as Cornaro's ([1550] 2005) *The Art of Living Long* being published in its native Italian during the 1500s and subsequent 'longevity guides' being widely produced by the 1600s (Boia 2004, p. 66). The strategies deployed to increase longevity included temperance, an early form of caloric restriction, where Cornaro would consume 'twelve ounces of solid food and fourteen of liquid … no more than survival rations' (Boia 2004, p. 64). Cornaro espoused four discourses of the temperate life, where he detailed his transformation from what he describes as a sick and infirmed individual to a healthy and happy member of society. Importantly, Cornaro did not see old age as a state to be avoided, rather he embraced it as a stage of life with its own rewards (Haber 2004, p. 516). This is significant for a history of rejuvenation techniques as Clive McKay later developed this model in 1934 for modern caloric restriction (Cornaro 2005, p. xxix). This, in turn, has been furthered by Aubrey de Grey, a prominent figure in American biogerontology.

Also, during the 1600s was the era of alchemy, which I frame as a pseudo-science, and so discount from my history of longevity[7], along with the emergence of vampirism and the fetishisation of 'young' blood through transfusions, which did not yield practical results. Roger Bacon, as well, is a prominent historical figure in anti-aging and studies of longevity, though his focus was somewhat from Cornaro's, and also heavily influenced modern biomedicine. Bacon considered the body as a form of machine and postulated that if one component 'broke

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[7] It is not practical to include every turn in the history of ideas surrounding longevity; I focus on those that have been developed into contemporary biogerontological practice, specifically because of the inextricable connection between historical notions of old age-as-disease and contemporary ones.

down' that the entire machine of the human body would necessarily falter. This was known as the 'solidest physiology' (Cornaro 2005, p. xxxi).

Robert Butler (in Metchnikoff [1908] 2004) points to France as having a growing percentage of older people in the 1830s. Early research around this time was produced through the biological sciences – that is, biologists such as Metchnikoff began to ruminate on the issue of growing old, and indeed, to seek ways to prolong the human lifespan. Through his studies of the 'dragon tree', which seemed not to have a point of what he framed as 'natural death' (2004), Metchnikoff began to question the properties of human beings that led to death. Around the mid-1800s, the emergence of the compound microscope enabled scientists to gain a deeper understanding of cell structure, which further demarcated the biological differences between micro-organisms, plants, animals and humans. Indeed, it was around this time when scientists discovered that bacteria did not grow old and die, but rather, experienced infinite rejuvenation. In the late-1800's, Metchnikoff named his phagocytic theory, 'reporting parallels between the digestive activities of amoeboid cells and changes in embryologic development' (Achenbaum 1995, p. 27), which were espoused to have implications for various developing scientific fields, such as microbiology and pathology. Metchnikoff developed this in relation to immunology (Achenbaum 1995, p. 29), however, to further his research in longevity studies. This enabled his development of orthobiosis and in fact led to the development of pro-biotic diets (Stambler 2014, p. 299).

The modern scientific turn in studies of longevity developed even further in the early 1900s, with the popular work of Ignatz Nascher leading to the emergence of the field of 'geriatrics' in 1914 as a vehicle through which to study 'old age' (Burstein 1947). With the foundational scientific corpus made publicly available, several scientific researchers aimed to develop the

works of Cornaro, Bacon and Metchnikoff. Indeed, this period saw the proliferation of a revised use of blood transfusions, as well as xenotransplants as a form of rejuvenation. This will be examined in more depth in Chapter 4 of this thesis in particular relation to ethics. Importantly, as will be seen, these transfusions and xenotransplants did not cure old age. Patients were also denied government welfare as a result, beginning in the 1940s (Haber 2004, p. 519), shortly after the publication of 'Edmund Vincent Cowdry's highly respected book *Problems of Ageing* (1939)' (Achenbaum 1995, p. 23). From this, it is surmisable that 'aging' was not vanishing, as early twentieth-century gerontologists had promised, and renewed interest in finding a cure for old age. Stambler (2014, p. 302) examines the resulting emergence of cell therapy in the 1930s. Conducted by Paul Niehans, this was known as cell suspension, whereby 'fresh' cells of an embryo would be injected directly into a patient in the hopes that aging would be arrested. This led to the American Geriatrics Society and the Gerontological Society of America to demarcate between 'normal old age from treatable, pathological conditions' (Haber 2004, pp. 519-520). In 1961, Leonard Hayflick discovered that human cells, in contradistinction to bacteria, have a 'finite lifetime' (Hall 2003, p. 4); that is, the cells are 'programmed to divide a more-or-less fixed number of times' (Hall 2003, p. 4) before reaching senescence. This came to be known as the Hayflick Limit, a theory which, as of writing this thesis, has not been disproven. Though the immortalised cell, as discussed in Chapter 4 of this thesis, does stretch the boundary of the Hayflick Limit.

Since these important developments in studies of longevity, there has been a proliferation of interest in recent years in developing a long-term 'cure' for old age, and aging in general. Recent developments include different theories of aging and the furthered development of Cornaro's dietary restriction (as caloric restriction), examination of the roles of small molecule mimetics, stem cells and mitochondrial DNA (Masoro and Austad 2006). These ideas are

further examined in Chapter 4 of this thesis and as such, my brief history of longevity and rejuvenation techniques ends here. As mentioned previously, I turn now to the technology of Trinfinity8, which demarcates the differences between hard science and junk science. Importantly, Trinfinity8 is reminiscent of Bacon's early approach to longevity, whereby the body is an organic machine that maintain all of its parts to function.

Algorithmic Somatechnologies: The 'Magic' of Trinfinity8

To develop a framework for somatechnological interventions into aging, it is important to understand what Trinfinity8 is, how it works and the foundation for its creation. Trinfinity8 is not the first anti-aging technology to enter the market, however it is perhaps one of the most relevant to this thesis, due to its inherent somatechnic qualities. The interrelation between technology, spirituality and medicine is quite unique for a technology of this sort, for anti-aging technologies such as laser treatments and skin care are positioned as little more than scientifically endorsed products, resting in neither medicine or spirituality, but wholly in the field of bio-technology. This approach is reminiscent to that of early longevity research, particularly Roger Bacon, who aimed to demonstrate the key to living longer lay in the holistic care of the body, both in mind, spirit and physicality (Boia 2004). Indeed, this technology finds utility in Bacon's approach being synthesised with contemporary scientific approaches to aging. Much anti-aging research posits aging as a condition in need of a 'cure'; the resulting anti-aging technologies thus deploy the notion that indeed aging is a disease. As Cardona (2008, p. 476) declares:

> Anti-ageing medicine, as promoted by the A4M, positions ageing as an 'illness'- a
> pathological condition of great impact for the economic, social and personal welfare
> of the individual and the state—and argues that biotechnological intervention
> currently exists to ameliorate and even possibly 'cure' ageing through hormone

> replacement therapies, genetic engineering, caloric restriction diets, early diagnostic
>
> and risk assessment tests, dietary supplements, antioxidants and stem cell therapies.

A4M is the shortened term for the American Academy of Anti-Ageing Medicine, which was formed in 1992 by twelve physicians who shared the same approach towards ageing; that is, as a 'treatable condition or disease' (Nielson 2006, p. 159). The A4M's institutional doctrine can be seen in other institutions such as Geron labs, whose research into 'genes, cellular metabolism, caloric intake, DNA damage' (Hall 2003, p. 82) aimed not only at discovering the cause of aging, but furthermore, discovering ways to treat aging, thereby constructing it as something in need of treatment. The President's Council on Bioethics report *Beyond Therapy: Biotechnology and the Pursuit of Happiness* (2003) discusses the notion of health and 'wholeness', that is, not only the human as healthy, but importantly, as whole – in possession of both a 'happy soul' and an ageless body. Technologies such as Trinfinity8 have been constructed with this particular focus, and the dream of 'wholeness' as one soon to be realised through the use of biomedicine. The report continues to discuss the retardation of aging through 'caloric restriction, genetic manipulations, and prevention of oxidative damage' (President's Council on Bioethics 2003, p. 173) – developments that have been informed by the investigation of others such as Aubrey de Grey, whose own research into the cancellation of aging has become widely renowned in anti-aging communities. What is critical to mark is the reason for this sort of research – why invest in anti-aging research if not to find a 'cure' for the aging process? By the very nature of its work, then, this sort of research posits aging as in need of a 'cure'.

Trinfinity8 deploys this notion through both the purpose of its creation and its form. Marketed as a rejuvenation algorithm technology inspiring bio-energetic rejuvenation through a quantum interface (Trinfinity8 2014), it boasts seven key areas of rejuvenation ranging from skin, hair

and energy restoration to weight management and body sculpting. One can ascertain from this that the applications for Trinfinity8 are virtually endless (certainly that is what the proponents of the product will have you believe), stimulating the reversal of aging across almost every part of the body, both inside and out. Perhaps the most significant aspect of Trinfinity8, though, is the notion of DNA restoration through the unique rejuvenation algorithm delivered via a computer. However, more is claimed for Trinfinity8 in terms of the human dimensions comprising the digital infrastructure enabling its properties:

> The unique software program was developed as a direct result of information brought
>
> back from a near death experience by Dr. Kathy Forti. Trinfinity8 is the first system
>
> of its kind to use a personal computer to deliver non-invasive rejuvenation programs
>
> based on mathematical codes, vibrational energies, and fractal formulations that are
>
> in harmony with core energetics that encompass all of nature (Trinfinity8 2014).

The inclusion of the near-death experience seems almost entirely unnecessary here, however it seems Trinfinity8 is aiming to merge science with New Age spiritualism in order to 'convincingly' promote the rejuvenation of both the body and the soul. Indeed, the notion of New Age Spiritualism becomes central to Trinfinity8, providing a holistic approach to the rejuvenation of the human body, colonising and manipulating traditionally Indigenous spirituality for the creation of a 'new medicine'. In particular, the Native American Indian dream catcher is a tool often referred to in this process of adaptation and manipulation (Jenkins 2004), whereby the dream catcher became a commodity of spiritual healing produced for a globalised market. According to Jenkins (2004, p. 11), this colonial commodification of spiritual tools has repeatedly reached mass audiences, for 'at the start of the twentieth century, between the two world wars, and again from the 1970s onwards', the New Age movement became popular precisely for its interjection into 'powerful social and intellectual fields' (Jenkins 2004, p. 11). The New Age movement effectively re-packaged and re-sold religious doctrines through the dissemination of esoteric and mystical themes.

In a sense, New Age spiritualism can be understood as the commodification of spiritual tools into alternative medicine. Yet this analogy would be too simplistic, and indeed, unjust, for the New Age movement is a vast complex of ideologies, beliefs and doctrines, ranging from the spiritual to the ethical and political (Aupers & Houtman 2006; Kemp & Lewis 2007). Hence it can be difficult to discern precisely what one means when referring to New Age Spiritualism; Dawson (2011, p. 311) notes that there has been a fusion between spheres traditionally recognised as separate – those of 'spiritual' and 'material' – where 'each is treated as a differentiated and thereby contingent representation of an all-embracing and absolute, overarching reality'. Beck (1992) intimates that perhaps new spirituality is a response to the conception of the self as not only the site, but more precisely, the centre of planning and action. Beck's notion is humanist in nature, perpetuating discourses that elucidate the human not only as the centre of all things, but also separate from every other species (Miles 1989; Tarnas 1991; Heidegger 2001; Calarco and Atterton 2004).

In accordance with humanist paradigms, the spiritual can be acknowledged, as pertaining to religious discourse, as related to the incorporeal and the intangible, whereas the material can be seen as oppositional terms, relating to the corporeal and the intangible. Importantly, the fusion between the tangible and the intangible is perhaps the key aspect of New Age spiritualism, particularly for this thesis and the example of Trinfinity8, where neo-eugenic somatechnologies aim not only to rejuvenate the body and eradicate the disease of aging, but also aim to provide these 'medical' treatments through a holistic approach. Kemp and Lewis (2007, p. 22) further discuss New Age spiritualism by moving towards a clear definition, stating New Age spiritualism has an 'emphasis on health and healing—physical, mental and spiritual—which expresses itself in alternative medicine, as well as spiritual practices such as

various types of meditation'. This definition, though, is not static and has been challenged by scholars of religion, particularly those writing within Christian and Catholic ideologies. It must also be noted that the 'beliefs and rituals of [New Age] are finding their way into other realms of U.S. culture and are even being appropriated by other religious groups' (Musik et al. 2000, p. 73) such as 'Buddhism, Hinduism, philosophical Taoism, western Sufism and neo-Paganism' (Kemp & Lewis 2007, p. 20).

New Age spiritualism need not relate to only one of the aforementioned, but characteristically borrows from several in a bricolage of beliefs, values and ideologies (Jenkins 2004; Aupers & Houtman 2006). There has been a noticeable shift in spirituality in the sense that it has 'moved from a concern for the perfection of the soul to the authentic growth of the whole person' (Muldoon & King 1995, p. 336), where 'people are or feel compelled to make themselves the centre around which all else is to revolve' (Dawson 2011, p. 310). While Dawson (2011) discusses this notion in specific relation to religion and the perpetuation of the late-modernist notion of the individual as a sovereign self, he nonetheless furthers his thesis by providing a larger context of commodification and consumption, where 'the quest for spiritual realisation represents … the self as "project"' (Dawson 2011, p. 313). If one were to examine the self in this way, then the assertion that New Age spiritualism seeks to improve, enhance, and provide therapy for the body can make for a logical conclusion. It is through this lens that one is able to pursue the notion of New Age spiritualism as a pivotal aspect of the medical field. The humanist discourse outlined by both Muldoon and King (1995) and Dawson (2011) is reflective of various medical treatments, both already available and those that are currently under development, which insinuates the imperialistic nature of the New Age movement in general, but more precisely, New Age spiritualism. It is vital to mark here the influence – indeed the necessity – of technology on notions of New Age spiritualism, specifically that of

biotechnology. Ray Kurzweil (2000) notes the development of what he refers to as spiritual machines, those machines that do more than just calculate and surmise, but which can connect to the human in an intimate manner.

By spiritual machines, Kurzweil (2000) refers to the development of Artificial Intelligence, which he posits must necessarily force the human to reconsider the differences between themselves and the machine. Kurzweil (2000, p. 16) asks:

> [a]re computers thinking, or are they just calculating? Conversely, are human beings thinking, or are they just calculating? The human brain presumably follows the laws of physics, so it must be a machine, albeit a very complex one. Is there an inherent difference between human thinking and machine thinking?

Kurzweil makes a connection here between spirituality and consciousness, implying that if a computer is thinking – and conscious – then it is necessarily spiritual, and offers the reverse by questioning the same qualities within the human. This may not be a universal view, however in relation to New Age spiritualism, which takes advantage of specific technologies to heal the body, perhaps one must consider the possibility of the spiritual machine. What is important to mark here is not only the differences between the human and the machine, but also critically, the relationship – indeed, the *inter*relationship – between them. Specifically, for Trinfinity8, how are the crystals able to determine which cells are damaged? Is there indeed some communication between the human body and the technology? Luckman (2006) asserts the relationship between technology and human rests in the reactions between electromagnetic fields and the human body's 'bioenergies', a relationship able to be controlled and manipulated through the construction of certain technologies. Hence, the development of bio-technology for medical purposes is of particular focus here, specifically regarding the manipulation of quantum science and the construction of the spiritual machine.

In particular reference to Trinfinity8, biotechnology plays a significant role, specifically regarding the application of quantum physics onto – and into – the body, for the purpose of cell manipulation and restoration. One might suggest this process to be quite intimate, particularly given that the crystals are asked by the computer to seek not only damaged cells and DNA, but more importantly, damaged and exhausted parts of the user's soul. Proponents of bio-technology posit that treatments for biological challenges will be revolutionised (Berne 2004; Kurzweil 2006) with the introduction of new technologies, such as 3D organ printing, which theoretically could reproduce one's own internal organs with fresh, genetically matching, ones (Mironov et al. 2003; Fedorovich 2007; Visconti et al. 2010). The development and manipulation of nano particles may also see technologies, posed by many (Bergsma 2000; Bostrom 2003; Kurzweil 2000, 2005 and 2006; Egan 2007) as nano-bots, which have been theorised to not only replace the need for a human heart (Kurzweil 2005), but to also 'destroy pathogens, correct DNA errors, eliminate toxins, and perform many other tasks to enhance our physical well-being' (Kurzweil 2005, p. 227). Kurzweil surmises that the human will therefore be able to live without aging, and while these technologies may not exude notions of New Age spiritualism, they do indeed perpetuate discourses of alternative medicine/treatment, while still positioning aging as a treatable – if not *soon-to-be-treatable* – condition. Surrounding bio-technologies are several questions of ethics and indeed, of the human, which will be examined later in this thesis, but it is critical to mark here the similarities between New Age spiritualism and bio/nano-technologies. Trinfinity8 acts as a technology embodying both New Age spiritualism and biotechnology for its supposed fusion between spiritual fulfilment through the vibration of crystals and both corporeal and genetic restoration through the dissemination of quantum physics.

Trinfinity8 can be considered somatechnic in nature for a variety of reasons including its function of reversing – indeed, defeating – aging. Trinfinity8 operates through an unavoidable connection between user and technology, namely, a home computer. The apparatus of the technology is not inserted into the body; however, the algorithmic coding is dispersed throughout the user on a genetic and cellular level, thereby forging a connection between user and technology. The removal of this once clear boundary between technology and human position Trinifnity8 within the realm of somatechnics. The algorithm technology is delivered via a USB port and translated through to the body via 'specially designed, lab-grown, hand-held quartz crystal transmitter/receiver rods' (Trinfinity8 2014) and can be attained for US$8200. Some may view this as a small price to pay for the retrieval of youth, however the implications of Trinfinity8 must be scrutinised here, for this technology can be seen as a neo-eugenic somatechnology in the sense that it relies on eugenic ideologies of eradication. The applications for therapy and enhancement endowed within Trinfinity8 are quite extensive, and also raise questions about the therapy/enhancement dichotomy often associated with advanced medical treatments. Furthermore, it is within this dichotomy that notions of normativity, and consequently, disease, rest. Karpin and Mykitiuk (2008, p. 414) discuss the concepts of both therapy and enhancement in this way:

> Conventionally, therapeutic interventions are understood to restore or bring an individual's morphology and capacities within the normal range, while enhancements imply going beyond that which is normal. The concept of 'normal' embodiment is the fulcrum upon which the therapy/enhancement distinction rests and from which it derives its purchase. Moreover, normatively, the idea of 'normal' or 'normalcy' sets the standard around which bodies are evaluated, regulated and are even permitted to materialise.

While the therapy/enhancement dichotomy is a much larger issue than outlined here – it will be detailed in much greater depth further in the thesis – it is important to understand the

fundamentals when examining Trinfinty8, for it elucidates adequately the function of therapy within the framework of neo-eugenic somatechnologies. According to Karpin and Mykitiuk (2008), therapy restores the human to normal capacity, thereby creating a division between what is normal and what is abnormal. In relation to Trinfinity8 and the applications it claims to successfully implement, the standard of normality for the aging body is not firmly established at a particular age, however it does promote the notion that the restoration and subsequent maintenance of youth is the ultimate human goal. Leon Kass (2009) examines this notion when he problematises the difference between therapy and enhancement, drawing comparisons between treatment for cystic fibrosis and muscle therapy for athletes. Kass examines this through the lens of potential immortality, qualifying that the dreams and fantasies of the humans' ability to overcome the limitations of both body and soul are no longer dreams or fantasies, but feasible possibilities that have 'revived the ancient dreams of human perfection' (Kass 2009, p. 13), due to the advancement of biotechnology. The therapeutic capabilities of Trinifnity8 – such as the ability to rejuvenate damaged DNA – have been examined to some degree, though as will be shown, not to a sufficient extent to adequately determine its precise therapeutic capabilities.

Experts from various scientific fields have conducted studies on the effects of Trinfinity8 on weight loss, heart rate variability, electro-meridian analysis and gas discharge, and human DNA. Proponents of Trinfinity8 include the data of these research studies precisely because they found the algorithm achieved its goal/s. However, upon examination of the studies, one can ascertain that further research is necessary before the value of Trinfinity8 can be determined. For example, the quantifying of data in the weight loss research, carried out by Dr. Norm Shealy, only used a control group of five people, and found that most of the test subjects indeed did lose weight; it can be argued that an effective research study should sample a larger

control group to ascertain accuracy. In order to achieve the desired results, Shealy only had to prove that three of the five actually lost weight, which is not scientifically sound[8]. Another study found that the anti-aging program, 'Reverse Aging', was effective in three experimental conditions and argued for the validity of the Trinfinity8 program, citing it indeed does have a profound impact on healing the body (Trinfinity8 2014). These research studies have not been carried out in enough depth to accurately suggest the rejuvenative powers of Trinfinity8, but nonetheless addresses the potential of this and similar technologies utilising the science of quantum physics. The inclusion of such research is interesting to note here, for the scientific experts that have endorsed the product do indeed work in anti-aging related fields, such as quantum biology. The endorsement of these specific people – and indeed, their related institutions – acts as a method of securing trust in potential consumers of the product. Not only are these leading anti-aging professionals endorsing Trinfinity8 and its various applications, but ultimately the eradication of aging. Furthermore, the scientific seal of approval that Trinifinty8 has been granted further positions aging as a treatable condition, and Trinfinity8 as eradicating a disease-state.

While research into the technology of Trinifinity8 itself may be lacking, research into the Regenetics Method – developed by Sol Luckman in 2006 – and electromagnetics and bioenergies in the human body has been carried out to question and investigate the secrets of human DNA. Luckman (2006, p. 217) describes Regenetics as 'the registered service mark for an integrated method of DNA Activation,' adding further that 'Regenetics also describes a field that represents the exciting confluence of energy medicine and molecular biology. As such, it

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[8] Gauch (2003, p. 1) outlines general principles for scientific method, the common core of which includes 'hypothesis generation and testing, deductive and inductive logic, parsimony'. He further discusses the need for sampling and representative samples, both independent and dependent variables and other foundational principles that ensure scientific verifiability. It is my contention that the sample used by Shealy is not representative of a larger population, does not account for either independent or dependent variables. The results are thus unreliable and unverifiable.

is a synonym for Wave-genetics and Electrogenetics' (Luckman 2006, p. 217). Perhaps this definition only complicates the matter at hand – that is, the concept of Trinfinity8 as a neo-eugenic somatechnology comprised of both scientific and New Age spiritualistic components. However, Regenetics and DNA Activation are a vital aspect to Trinfinity8, where DNA Activation is a non-invasive method of 'stimulating a self-healing potential in the genome' (Luckman 2006, p. 208). Trinfinity8 boasts its own potential to achieve this, however it is marketed as DNA rejuvenation for the primary purpose of defeating aging.

Not only has the practice of Regenetics informed the construction of Trinfinity8, but so too has the notion of bioenergies. Luckman (2006, p. 19) posits that geneticists have begun to use the term 'biocomputer' to describe human DNA, and 'in order to "reset" our bioenergy blueprint in a way that will not only "take" but also "hold", we must go directly to the source of the electromagnetic malfunction in our genetic code'. His research found that one must employ both sound and intention to 'activate the self-healing mechanism' found in the human biocomputer that is DNA. French anthropologist Jeremy Narby has dedicated several years to the notion of understanding DNA; he carried out an ethnographic study of the healing practices of shamans in the Amazon jungle and returned with questions surrounding the ability to manipulate DNA, positing that it 'is not merely an informational molecule, but also a form of text and therefore is best understood by analytical ways of thinking commonly applied to other forms of text' (Narby 1998, p. 144), a notion borrowed from American biologist Robert Pollack. Central to this notion of DNA as a text is the subsequent theory that like other texts, DNA too can be read and re-written. To suppose DNA is nothing but a text, however, would be too simplistic, for the human genetic blueprint 'is far more complex and intractable than the operations of textual analysis' (Pugliese 1999, p. 423). While DNA can be considered a text for its relationship with semiotics and subsequent scientific discourse, it must be acknowledged

to be much more than a text – as Pugliese (1999) suggests – particularly when viewed in correlation to more recent sciences, such as the study of bioenergy, which aim to connect DNA with a fusion of spirituality and medicine.

Bioenergy can be synonymous with electromagnetism, though it is specifically located within the human body. Once more a connection to New Age spiritualism can be found in this science as it depends on the notions of aura and chakra to determine a bioenergetic blueprint. Furthermore, the science of bioenergy has been examined from a quantum biology perspective, which states that 'the human body is a hologram composed of intersecting lines of bioenergy' (Luckman 2006, p. 23). These intersecting lines can be conceptualised as high-frequency force fields, each one pertaining to a specific area of the body, responsible for its maintenance and correct functioning (Luckman 2006, p. 22). Important to note here is that scientific research into bioenergy is not limited to Luckman, indeed this particular research into the applications of bioenergy has been carried out in various fields, including agriculture and livestock. However, human bioenergy research, though with some focus on cancer treatment (Juang 2004), is primarily focussed on the practical intervention of the aging process (Chien et al. 1991; Linnane et al. 1992; Kovalenko et al. 1998a; 1998b; Fukagawa 1999)[9]. The applications for the human are quite significant, particularly if one were to rejuvenate humanist ideologies of immortality, which is a concept explored further in this thesis. Trinfinity8 takes advantage of these new scientific developments through the use of vibrating crystals, the aim of which are to stimulate the self-repair mechanism in DNA, thereby manipulating the bioenergetic fields and rejuvenating the body to a state of absolute health.

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[9] I have used Luckman (2006) as the primary source here for his theoretical approach to the science, whereas the other contributors to the field are based solely within a scientific framework of the applications of bioenergy.

Trinfinity8 is a significant example of the construction of aging as disease by virtue of perpetuating the obsession with both a young body – via anti-aging computer software – and the human capacity for 'ascension'. This concept will be unpacked further in Chapter 3 of the thesis, but it is sufficient here to outline it as involving the re-inscription of Heideggerian philosophical frameworks regarding the uniqueness of the human, and an affirmation of humanist ideologies that suggest – and advocate for – the quest for human immortality. Trinfinity8 as an anti-aging 'medicine' can be seen as yet another commodification of the aging process and its framing as an illness, however 'medicalisation occurs within the scaffold of disease' (Mykytyn 2008, p. 315), thereby enforcing other anti-aging research and solidifying the notion of aging as a disease.

Anti-aging medicine has been described as a paradigm shift in the way humans think about not only disease, but also health. Where, as the California Anti-Aging company (cited in Mykytyn 2006, p. 646) states, 'traditional medicine seeks to treat the complications of aging … anti-aging medicine seeks to change the process of aging in the first place'. Thus, biogerontology has become a field in which leading scientists across the globe aim to eliminate, or at least pause, the condition of aging. One of the world's leading proponents of anti-aging research is Aubrey de Grey, whose research thus far has identified the possibility – and indeed the *probability* – of achieving infinite life extension through technology. De Grey's research (2005), while potentially recognised as ground breaking, leaves the questions of necessity and desire completely unanswered; he does not address why the postponement of age is needed, which indicates a resurgence of the humanist desire for immortality. 'Anti-aging interventions—measures intended to slow, arrest, and reverse phenomena associated with aging and to extend the human life span—have been part of human culture and societies for millennia' (Binstock 2003, p. 5; Juengst et al. 2003), and as such the notion that 'natural death

is not the inevitable penalty of life' (Pearl 2009, p. 16) has been widely mobilised as a justification of life extension research.

Apparent in de Grey's research is this same notion when he suggests that the elimination of aging is necessary to human evolution, consequently removing 'age-related physiological decline' (de Grey 2007, p. 417) resulting in conditions such as disability. In his paper 'A Strategy for Postponing Life Indefinitely' (2005), de Grey specifically lists the 'Seven Deadly Things' comprising the types of physiological damage that ultimately result in death. Concluding that this list is complete due to the list being last updated over twenty years ago, de Grey's definitive catalogue conveys a sense of convenience – it becomes easier to assume that the list is complete, as opposed to warranting further examination or refinement, in order to progress the science of anti-aging. While de Grey does not assume aging is a disease in written or verbal testimonies, his research accounts for that position when considering his strong focus on obliterating aging because of its 'disease-causing' nature. The discursive normalisation of anti-aging medicine then, as Cardona (2008, p. 476) states, principally aims at:

> position[ing] ageing as an 'illness'- a pathological condition of great impact for the economic, social and personal welfare of the individual and the state—and argues that biotechnological intervention currently exists to ameliorate and even possibly "cure" ageing through hormone replacement therapies, genetic engineering, caloric restriction diets, early diagnostic and risk assessment tests, dietary supplements, antioxidants and stem cell therapies.

Technologies are being deployed that extend beyond hormone replacement and genetic engineering, as 'anti-aging practitioners assert that there is much more that technoscience can do to retard, halt, and even reverse aging' (Mykytyn 2006, p. 644).

Old age, then, becomes framed as a disability and is scrutinised as a site for intervention, particularly when 'diseases commonly associated with old age become symptoms of aging' (Mykytyn 2006, p. 646). Furthermore, disability, like aging, becomes curable through these same technologies, as the paradigm maintains: if aging is eradicated, so too will the associated illnesses and diseases. Mykytyn (2008) argues that aging is not a disease, rather, that aging causes disease. If one considers the various discourses that construct aging as in need of a 'cure', then perhaps the correlation between old age and disease becomes clearer. Furthermore, discursively, in biopolitical terms 'old' bodies are situated as inferior and weak, and thus are treated accordingly through governmental regimes of confinement, and in some instances, through biopolitical frameworks of the right to kill, as in the instance of forced euthanasia. Trinfinity8 obviously does not practice confinement, but rather eradication. Through the eradication of old age, one must consider the future of the human self-image and 'how the human being will conceptualise itself' (Benedikter, Girodano & Fitzgerald 2010, p. 1104), particularly in light of new technological developments in general, not only those aimed towards anti-aging, the preservation of youth, and the perfection of the human.

In the interest of the perfection of the human, Jennifer Fitzgerald (1998) carefully approaches the topic of disability and the technologies that have been developed to 'cure' it, and – purposely or not – finds credence with Neil Badmington's notion of humanist remains when she states that 'unfortunately, we seem to be using this technology to respond to difference in the way in which we have done for centuries – by choosing to eliminate rather than embrace and care' (Fitzgerald 1998, p. 149). Within this quote, Fitzgerald demonstrates humanist ideologies of elimination over embracement, and thus opens a line of inquiry regarding the use of somatechnologies within an ethical framework. Fitzgerald's notion can be applied not only to disability, but importantly to gerontology and the erasure of age. Questions arise, however,

regarding the implications of Trinfinity8 upon not only notions of the self, but also notions of governmentality and the technologies that facilitate them. For instance, how does the deployment of an anti-aging computer algorithm influence or reaffirm biopolitical notions of aging as disease? The implications for the self, if regarded as ageless, must be acknowledged here, for 'the point is that it is not sufficient to focus on the destruction of forms of identity without taking into account the production of new modes of subjectivity linked to governmental technologies' (Lemke 2002, p. 59). One cannot understand fully what new modes of subjectivity will/can be produced until these begin to emerge.

Trinfinity8 as a somatechnology marks the visibilisation of these emerging subjectivities, which will be examined throughout this thesis; further, this somatechnology enforces notions of hierarchies of life and the biopolitical role of the sovereign in a contemporary western sphere. Ultimately, the technology of Trinfinity8, and the research surrounding its construction, can be seen as a strategy to abolish the 'disease' of aging, thereby reinforcing hierarchies of bodies, of people, and of life. The construction of anti-aging technologies, then, can be read as neo-eugenic by their very nature. In order to track the neo-eugenic ideology encapsulated in anti-aging technologies such as telomere-based and stem cell therapies, and caloric restriction, this chapter provides a brief exposition of the emergence of eugenics and the ways in which the ideologies underpinning the Nazi state remain in contemporary western societies, albeit in a vastly different form.

The American Dream, Eugenic Practices and the Nazi State

As stated earlier in this chapter, neo-eugenics is similar in nature to that of eugenics; while it is problematic to suggest that neo-eugenics are highly similar to the eugenics that culminated in the Nazi concentration camps, it is possible to see similarities with the eugenics discourse

initiated within America and England in the late 1800s. Notions of (non)-acceptable human bodies became cemented within a discourse of normativity justified through both eugenic science and medicine. As Donald MacKenzie (1976) suggests, notions of the unacceptable human body during this period were largely due to social position. Qualities such as 'mental ability, predisposition to sickness or health, or moral tendency' (Mackenzie 1976, p. 499) were seen by eugenicists as inherited, and therefore the 'logical' basis for the mobilisation of the governance of birth rates; indeed, the governance of procreation, and furthermore, of life itself (Mackenzie 1976; Kelves 1999; Black 2003) was but one aspect of the encapsulation of ideas surrounding what it meant to be a (normal) human being. It is not stretching the imagination to see the hierarchical structures deployed here. In fact, as Lennard Davis (1995, p. 34) suggests:

> [t]he new ideal of ranked order is powered by the imperative of the norm, and then is supplemented by the notion of progress, human perfectibility and the elimination of deviance, to create a dominating hegemonic vision of what the human body should be.

Biopolitically, this hierarchical vision of human bodies presupposes a definition of both normativity and acceptability, and it positions many elderly bodies and the 'diseased' at the perimeter of the social order. Even prior to the Nazi state, biopolitical social positioning was a defining factor throughout various western and European societies, and the rejuvenation of Mendelian genetics provided an opportunity for scientific regimes to endeavour to perfect the human. As such, 'eugenic ideas were put forward as a legitimation of the social position of the professional middle class, and as an argument for its enhancement' (Esposito 2008, p. 146), which inevitably led to genocide across America and Europe, eventually culminating in the Nazi death camps and the liquidation of countless individuals (Kühl 1994).

While the death camps of the Nazi state are perceived as the culmination of a thanatopolitical regime, it is vital to acknowledge that Hitler did not invent the concentration camps; indeed,

the notion of death camps was first deployed in America during the early practice of eugenics, which has been cogently been described as 'racism disguised as science' (Allen 2001, p. 5). Race may have been the most visible factor of discrimination and persecution during the Nazi state, however as stated earlier, visions of early eugenics consisted of the removal of what was broadly defined as 'the unfit', as Dennis Hodgson (2004, p. 345) states, 'early eugenic visions of a "lethal chamber" for the unfit and instances of eugenic "euthanasia," such as Dr. Harry Haiselden's denial of treatment to a severely deformed newborn in 1915, foreshadowed Nazi gas chambers'. The foreshadowing of lethal gas chambers can be found in American history, with doctors such as William McKim and G. Frank Lydston suggesting the gas chamber as methods of weeding out mentally and physically defective 'stock.' McKim suggested 'inflicting a "gentle, painless death" with carbonic acid' (Quinn 2003, p. 5), while Lydston 'advocated the use of the gas chamber "to kill properly the convicted murderer and the drivelling idiot"' (Quinn 2003, p. 5). In several states across America eugenics was considered progressivist; indeed, the notion of deploying gas chambers was considered a necessity for the protection, and the improvement, of the human race. In *Man, the Unknown* (1939, p. 318), Alexis Carrel insisted that the insane 'should be disposed of in euthanasia institutions' supplied with proper gases' and as an inventor and Nobel Prize winner, his ideas were highly regarded. While sterilisation became widespread, some American doctors felt that if 'compulsory sterilisation wasn't employed broadly enough, "euthanasia may become a necessity"' (Quinn 2003, p. 5), hence Carrel's – and others' – advocation of gas chambers became seen as necessary progressivist reform.

Although the Nazi regime created sites of industrialised, mass extermination, it is vital to note here that institutional justification for these genocidal programs drew upon US eugenic theory (Black 2003). The resulting death camps and forced sterilization of the Nazi state can be

perceived as forms of 'extreme and perverse outcome[s] of a particular version of biopolitics' (Quinn 2003, p. 5) encountered by those deemed 'unfit' or 'unacceptable' (Pernick 1997; Carlson 2001; Ordover 2003). The fact that millions were killed under the aegis of eugenic rationalisation evidenced that there was something disastrously wrong with eugenic theory. Indeed, these regimes became commonplace by the 1940s, spreading across the globe as a legitimate science. The legitimised science of these regimes of control and biological strengthening was strongly discredited at the end of the Second World War after the horrors of the death camps came to light.

The death of extreme eugenic regimes can largely be seen as a result of the cultivation of concentration camps in Nazi Germany. However, the ideologies that initially drove eugenics may have lived on; indeed, it can be argued that eugenics has never been too far from the minds of many scientists and geneticists, who publicly seek to eradicate various modes of existence and produce both disability and aging as bodily diseases. While the eugenics of old forced the sterilisation of countless individuals and eventually the liquidation of those deemed inferior, weak, and problematic for the survival of the human species (Ploetz 1895; Brechin 1996; Kelves 1999; Allen 2001; Black 2003; Fukuyama 2003; Nasedan 2008), neo-eugenics maintains the search for the perfect human. The methods being utilised today may be recognised as subtler than those practiced in America and Europe during the 1900s; this does not, however, infer that these methods are any less dangerous.

The mobilisation of technologies deemed 'somatechnologies' are beginning to dominate medical discourse with the promise of establishing an eventual 'cure' for the imperfect human; those who are incurable are often placed within an institution or medical facility, which may be viewed as an extension of eugenics as a neo-eugenic regime of isolation. Indeed, not only

was a pivotal aspect of eugenics the need to sterilise people, but also the notion of isolation and quarantine also defined eugenic movements throughout both America and Europe. Quarantine and isolation still occur as a neo-eugenic ideology; however, the dynamics have altered significantly. In relation to retirement and nursing homes, elderly patients in many cases become complicit in both desire and need for the spaces of the retirement/nursing home for their services, facilities and access to specialised care. Nonetheless, the notion of the camp as developed by Agamben can be inextricably connected to the notions of confinement and Retreat explored during the 1800s. Perhaps, too, part of the gerontological hygiene movement is the willingness and desire of those deemed 'old' to be quarantined and isolated as an acknowledgement of their 'disease-state'; moreover, 'as individuals, society has a number of culturally and socially defined expectations of how people of certain ages are supposed to behave and how they are positioned and classified' (Powell 2006, p. 8). As such, this chapter now turns to an examination of some emergent anti-aging somatechnologies that I frame as neo-eugenic in nature.

Neo-Eugenic Somatechnologies

The thesis Introduction unpacked the critical concepts of biopolitics, governmentality and neoliberalism. It was crucial to outlay the historical significance of these theoretical positions, inclusive of eugenic frameworks, precisely because, as I will argue here, anti-aging technologies – whether produced through junk science as above, or through hard science as detailed later – depend upon neo-eugenic discourses of eradication. These technologies are inextricably bound up with notions of life as hierarchical, thus implicating a range of non-normative bodies in a biopolitical regime of abolition. As has been established, this thesis focuses on the role of anti-aging technologies in the construction of age as a disease-state. Consequently, aged bodies are encompassed within a biopolitical nexus that at once sees them

as diseased, but also as commodities in a neoliberal exchange. It is my contention that anti-aging somatechnologies, such as Trinfinity8 and caloric restriction, demonstrate the powerful ways in which discourses of the sovereign operate under neo-eugenic ideologies in contemporary western societies.

The sovereign right to life and death has been practiced throughout the centuries as a strategy of power. However, as Foucault identifies, developments in the late eighteenth century of a complex form of sovereign power, which Foucault termed as 'biopolitical,' focused on fostering the healthy bodies of a nation and eliminating those seen as deviant bodies, and indeed, 'diseased' bodies. This political right achieved its extreme form in the Nazi state through the genocide of all bodies that did not match the criteria for the Nazi's ideal of a master race. However, sovereign power 'is the power to "make" live and "let" die' (Foucault 2003, p. 241) not only in the literal sense. When considering the notion of freedom and allowing the population to act in specific ways, to 'kill' does not, in Foucault's mind, need to be the act of physical murder. Rather, sovereign power can be enacted through 'the fact of exposing someone to death, increasing the risk of death for some people, or, quite simply, political death, expulsion, rejection, and so on' (Foucault 2003, p. 256).

The notions of rejection and expulsion can be understood as the driving force behind regimes such as the Nazi State, or more precisely, the eugenic movements that initiated in America and Europe for the purpose of subjugating specific bodies. Indeed, 'the subjugation of human life and death to biopolitical sovereignty comes to be what is at stake in modern technology' (Athanasiou 2003, p. 136), particularly through the rejection of specific bodies, and the subsequent construction of those bodies – specifically, in this context, those elderly bodies presenting 'symptoms' of 'aging' – as diseased. Haber and Smith (1971, p. 88) argue that

disability is 'sometimes conceptualised as an extension of the sick role', from this rejection. I argue this is applicable to forms of the elderly body, as well, and has in fact aided the construction of aging as a disease-state. While contemporary methods of rejection see the addition of technologies to specific bodies in order to eradicate undesirable characteristics or to impose the illusion of being a 'whole human' – which are seen as neo-eugenic in nature – eugenic regimes first mobilised in America from the late 1800s were employed to 'improve' humans as a species and ensure its survival for future generations.

Despite the striking similarities between eugenics and neo-eugenics, it is important to mark a primary difference between eugenics and neo-eugenics; that is, that eugenics was, in some cases, mobilised as a genocidal movement. Despite the fact that neo-eugenics aims to eradicate specific bodies – just as eugenics sought – neo-eugenics does not subscribe to the minimum requirements of genocide as outlined by Esposito (2008, p. 137):

> (1) that there exists a declared intention of the part of the sovereign state to kill a homogenous group of persons; (2) that such a killing is potentially complete, that is, involves all its members; and (3) that such a group is killed insofar as it is a group, not for economic or political motives, but rather because of its biological constitution.

Neo-eugenics, while aiming to eradicate disability and aging, must not be considered a form of genocide; there has been no declared intention from the state to purposefully destroy the aged, but rather a 'humanistic' approach through scientific discourse that promotes the 'crisis' of old-age (Cooper 2006). It is tempting to use the term *gericide* – used in the novel *Unisave* by Axel Madsen (1980) – to initiate theoretical positions on the systematic eradication of old age through anti-aging somatechnologies.

These somatechnologies, as will be explored further in this chapter, rely heavily upon medical discourse propagated during the height of eugenic regimes, which again deploys neo-eugenics as resurgence of biopolitics. Within a medical framework, eugenic theories stemmed from Gregor Mendel's theories of pea-plant genetics, which emerged throughout 1856-63. Generally identified as the most significant contribution to eugenic thought, Mendel's ideas were not extrapolated for humans until some time later by Francis Galton, whose clear influence from Social Darwinism led to eugenic regimes in America and Britain in the early 1900s (Kelves 1986). Indeed, 'the eugenics movement in the United States was nourished by both the rediscovery of Mendel's laws of inheritance and the belief that all or at least most human characteristics could be genetically determined and passed down from parent to offspring' (Garver & Garver 1991, p. 1110). Mendelian genetics had been all but forgotten until Galton's revival, which was highly influential in the construction of eugenics; in 1883, Galton coined the term eugenics – a derivation of 'the Greek word for "well-born"' (Hubbard 2006, p. 94) – to refer to 'a plan to encourage the "best people" in society to have more children (positive eugenics) and to discourage or prevent the "worst elements" of society from having many, if any, children (negative eugenics)' (Allen 2001, p. 2). Galton's initiation of this paradigm altered yet again the perception of the human – both living and dead – and further mobilised notions of both acceptable bodies and of disease through the scientific lens of genetics.

For Galton, and indeed various other scientists as well as politicians, such as Alfred Ploetz and, many years later, Charles B. Davenport and Adolf Hitler, 'eugenics was no ordinary applied science. It was the basis of a scientific religion which could lead to the utopian situation where problems such as alcoholism, criminality, disease and poverty had disappeared' (Farrall 1979, p. 111). Genetic experimentation, like most other sciences, was first conducted eugenically on domestic animals by the University of Chicago. Shortly afterwards, in 1910, the Rockefeller

Institute funded Charles Davenport's request for finance towards the study of heredity in humans, furthering eugenic science's reductive biological continuity between humans and animals to the quality of the stock they came from. Indeed, 'if a farmer or breeder wants to encourage a better reproduction of vegetables and rabbits, or conversely, wants to block a defective stock, why, the exponents of the new science asked, should it be any different with man?' (Esposito 2008, p. 131). This notion rested on a fundamental understanding of classifications of 'normal', strictly endorsed by the Bell Curve as a method for identifying who and what shall pass as normal, both biologically and psychologically. Davis (2002, p. 101) situates the Bell Curve as emerging in Europe towards the beginning of the nineteenth century through the establishment of statistics. His genealogy acknowledges that statistics enabled the notion of a norm and

> [i]n this paradigm, the majority of bodies fall under the main umbrella of the curve.
> Those that do not are at the extremes – and therefore are abnormal. Thus, there is an
> imperative placed on people to conform, to fit in, under the rubric of normality'
> (Davis 2002, p. 101).

If a subject did not rest comfortably within the parameters defined by structures such as the Bell Curve, it was classified as defective, and in some cases, nonhuman.

As biopolitics in the form of eugenic science spread across the globe, it became rationalised and adopted 'into a movement in various countries throughout the world in the first three decades of the 20th century, but nowhere more solidly than in the United States and, after World War I, in Germany' (Farrall 1979, p. 111). This framework, in which eugenics was understood seemed to legitimise discriminatory cultural practices such as racism, and stabilised class and gender dichotomies. Furthermore, discrimination took place in terms of ability – primarily the ability for labour. Mitchell and Snyder (2006, p. 15) posit that 'in eugenics, arguments about the ability to labour were also used, but only by way of invalidating people with disabilities on

the basis of their failed labour skills'. During the eugenic period, the ability to labour was contextualised as an essential aspect of human validity, thereby justifying the segregation of disabled people (Mitchell & Snyder 2006, p. 16). Marked as unable to perform labour tasks, disabled individuals were concealed from the public and, in the context of the Nazi state, ultimately exterminated. What is vital to note here, to accurately illustrate the disenfranchisation of the disabled, is the almost erased history of the eradication of the disabled body prior to the Holocaust. Mitchell and Snyder (2015, p. 123) trace the emergence of 'killing centres' dispersed around Germany during the early stages of the Nazi state. These killing centres first targeted the disabled, and it was only when the eradication of the disabled was complete that 'apparatus such as the crematoria ovens were dismantled and sent off for reuse at the newly constructed death camps' (Mitchell & Snyder 2015, p. 124).

Despite biopolitics, as a term, existing prior to Foucault's use of it, his innovative conceptualisation is significant for understanding the discursive construction of gerontology and disability as disease in a contemporary context. Furthermore, utilising biopolitical frameworks of health, acceptable bodies and hegemonic norms for the development of bio- and soma- technologies to overcome and 'cure' these new-age diseases can be viewed as a strategy to rejuvenate humanist notions of acceptable bodies in a somatechnic context through a re-deployment of eugenic regimes. These somatechnologies ultimately seek to perpetuate the humanist quest for perfection – and ultimately, through anti-aging technologies, immortality. Where eugenics sought to eradicate 'a life that is already dead because it is marked hereditarily by an original and irremediable deformation' (Esposito 2008, p. 137) through forced sterilisation and liquidation, neo-eugenics proposes to eliminate unacceptable 'diseased' bodies through corporeal transformation via transhuman somatechnologies. Contemporary western society deploys the illusion that is a fair and equitable society, however this is, in fact,

illusory when one considers the similarities between historical eugenic regimes and emerging neo-eugenic regimes. Although the neo-eugenic methodologies are updated and more advanced today than ever before, the end goal remains largely the same as those identified by eugenic scientists in early America – to perfect the human through the eradication of the diseased and the inferior.

Somatechnologies, though, are not without their grey areas, and can sometimes be seen as troublesome by purists who question whether the integration of technology into and onto the human body will alter the human to a point at which it will be unrecognisable as human, as 'contemporary medical technologies do not seek merely to "cure" diseases once they have manifested themselves, but to control the vital processes of the body and mind' (Rose 2006, p. 16). Theorists have argued that the outcome of this control will be highly dependent upon who is given, and/or takes, control over processes that can potentially alter and shape the mind and body (Fukuyama 2003; Kass 2009). Fears regarding who controls/distributes these technologies have shaped technophobic paradigms, and according to this dogma, somatechnologies become just as undesirable as those modes of existence that 'pure' humans have sought to eradicate. However, this does not imply that the desire to perfect the human no longer exists, rather it suggests that a wide range of people are frightened of the use of advanced technologies to meet this end. For purists, the use of such biotechnologies places the human at risk of 'losing' their essence, the very aspect of humans that make us human (Heidegger 1967 & 1977; Fukuyama 2003). The argument can also be made that whoever controls these technologies will therefore control the outcome of the human and shape the human into his/her/their own vision. In this sense, the use of anti-aging somatechnologies is a neo-eugenic dispositif.

In the way that Trinfinity8 operates as a bridge between new age spiritualism and the quest to actively reverse aging, more scientific approaches have simultaneously been developed. While Trinfinity8 can be seen as junk science for its reliance on harnessing the power of crystals, more feasible scientific methods such as caloric restriction and adipose tissue therapy are currently undergoing significant advancements under the rubric of 'Rejuveneering' (Wood 2016). A simple portmanteau meaning Rejuvenation Engineering, a multitude of biogerontologists have begun to adopt this discursive framework. Indeed, as David Wood (2016, 58) claims:

> rejuveneering will bring about a kind of phase transition, similar to the way in which continuing to apply heat to water results first in the water becoming hotter, and secondly (the phase transition) in water turning into steam as it boils. Here, the application of heat is analogous to the application of general scientific, technological, and engineering principles. The first phase of outcome is the retardation of aging. The second phase is the reversal of aging.

The phase transition described by Wood is embodied in current research, most notably undertaken by the SENS foundation. Aubrey de Grey, founder of the institute, dedicates his research to the abolition of age and has published extensively on what he terms the Longevity Escape Velocity (de Grey 2004), and further conducts experimental research on the effects of caloric restriction on mice and rats. De Grey's research is heavily influenced by the work of Clive McCay, who first began testing the impact of caloric restriction on animals in 1935. Resultant of research of this sort, and other research such as stem cell and telomerase therapies, there have been further understandings of the biological causes for aging. Biogerontologists, such as de Grey, argue that the biological underpinnings of aging are not simply enabling us to grow older, but critically, they argue that aging is the root cause of other diseases and disabilities. Indeed, López-Otín et al. (2013, p. 1195) identify nine essential characteristics of aging, including 'genomic instability, telomere attrition, epigenetic alterations, loss of

proteostasis, deregulated nutrient-sensing, mitochondrial dysfunction, cellular senescence, stem cell exhaustion and altered intercellular communication'.

The identification of these nine characteristics pose a critical difference between Trinfinity8 and more reliable scientific inquiry, precisely because Trinfinity8 acknowledges general decline in spirit, mind and soul, thus offering a holistic spiritual rejuvenation experience. Whereas the dissection of aging into these nine components enables scientists to not only target specific aspects of aging, but also develop technologies designed to abolish old age itself. Wood (2016) further identifies a range of potential therapies, currently being developed through institutions such as SENS and those affiliated with the GeroScience Network. Wood (2016, p. 69) poses two distinct types of regenerative mechanisms – those already in operation in young humans, which can potentially become manipulated to avoid loss of potency with aging, and those mechanisms operating within non-human animals (such as *C. Elegans*, fruit flies and mice), which biogerontologists are aiming to trigger in humans. These regenerative mechanisms include the prolongation of 'healthy' life through telomere elongation, caloric restriction, and stem cell manipulation, among various others.

Further, Wood (2016) notes synthetic biology and genetic engineering, mechanical replacement body parts and nanotechnologies as trajectories for future research. Futurists and transhumanists, for example, Ray Kurzweil, argues that these technologies are achievable in the next one-hundred years, however for the purpose of this thesis, I will only examine those technologies either already developed or in development at the time of writing. Hence, while nanotechnology has experienced momentum (Hamlekhan et al. 2014), its applications in anti-aging remain mostly limited to skin care products. Similarly, while technologies such as 3-D organ printing are currently being developed, my contention is that these are focussed less on

aging and more generally towards human life extension. That is, the research does not identify a failing heart or lung as *necessarily* symptomatic of old age, but rather as a result of the fallible human body. Despite, as Austad (2016, p. 4) notes, 'aging [being] so intimately intertwined with numerous diseases and disabling conditions that almost any discussion that begins with aging ends on disease', I argue that discourses of disease have turned to aging as the root cause. Thus, aging-as-disease must necessarily be separated from age-related diseases. I do not suggest that these technologies are unimportant, however for the purposes of this thesis, I do not argue they are specifically *anti-aging* technologies. Further, the development of these technologies is currently quite distant from operational utility.

For this reason, my attention now turns towards technologies that have proven results in non-human species and are currently undergoing human clinical drug trials. These technologies include caloric restriction and adipose therapies. Andy Walker, Kay Svela Walker and Sean Carruthers (2016) state that caloric restriction has existed as an anti-aging method for over five hundred years. As mentioned earlier, Clive McCay, alongside Mary Crowell, in 1934 'published a breakthrough study that found mice fed a calorie-restrictive diet almost doubled the typical life span for their species' (Walker et al. 2016, p. 360). McCay and Crowell made popular in the twentieth century what Luigi Cornaro had been practicing in the fifteenth century. Significantly, the publication by McCay and Crowell influenced scientists throughout the 1980s and 1990s, leading to de Grey's current research and have enabled the hard science research of caloric restriction to formulate a large section of the SENS foundations research objectives. Caloric restriction, scientifically,

> extends lifespan in species ranging from flies to primates [and] acts partially
> through a decrease in total adipose tissue mass, in addition to intracellular
> mechanisms within adipose tissue such as decreasing inflammation, increasing
> autophagy and DNA repair mechanisms, reducing cellular senescence, and

preventing age-related changes in gene expression (Palmer & Kirkland 2016, p. 97).

The co-implication between the restriction of caloric intake and adipose tissue mass, as mentioned in the above quote, is quite significant; the authors here essentially state that caloric restriction facilitates a decrease in the mass of adipose tissue (commonly known as 'fat'). Inquiries into the uses of adipose-derived cells are currently 'widely used in the [medical] clinic to treat ischemic diseases and enhance wound healing. Interestingly, adipose-derived stem cells (ASCs) are also effective in antiaging therapy, although the mechanism underlying their effects remains unknown' (Zhang et al. 2014, p. 1). Further research conducted by Palmer and Kirkland (2016) has identified a critical connection between adipose tissue dysfunction and telomere length. Telomere-based therapies will be examined in Chapter 4 of this thesis, but it is notable here that anti-aging somatechnologies cannot be isolated to one part of the human body, rather are often co-implicated. Indeed, Palmer and Kirkland (2016, p. 98) explain that 'with age, macrophages [cells capable of detecting and destroying pathogens] accumulate in subcutaneous fat, but no significant change is seen in visceral depots'. They not further:

telomere length is also shorter in subcutaneous versus visceral adipose tissue, independently of BMI or diabetic status. […] Accordingly, subcutaneous but not visceral adipose telomere length shortens with aging. […] This shorter basal length and age-related shortening of telomeres in subcutaneous depots may make subcutaneous adipose tissue a key contributor to increasing senescent cell burden with aging (Palmer & Kirkland 2016, p. 98).

Hence, adipose therapies, caloric restriction and telomere lengthening procedures, scientifically operate together as a significant intervention in aging. As Huffman, Schafer and LeBrasseur (2016) notes, the most efficient dietary intervention specifically aimed towards human longevity remains that of caloric restriction. Researchers including those at the Sinclair Lab, operated through Harvard Medical School's Department of Genetics, recently identified

a 'geometric framework' (Solon-Biet et al., 2014) – a method of nutritional modelling 'used to measure interactive effects of dietary energy, protein, fat, and carbohydrate on food intake, cardiometabolic phenotype, and longevity in mice' (Solon-Biet et al., 2014, p. 418). Critically, another of the Sinclair Lab's publications identifies the specific reasons for the research; that is, 'the prevention or delay of the onset of age-related diseases prolongs survival and improves quality of life while reducing the burden on the health care system' (Mitchell et al. 2014, p. 836).

While research into aging continues, an acknowledgement towards the primary goals and objectives cannot be understated. Here there is a demonstrated biopolitical agenda, whereby the 'burden' on the health care system, presumably by those experiencing older life, comes to be recognised as a vital component. I argue that the research, then, is underpinned by biopolitical and neo-eugenic regimes of hygiene. Rather than allocating resources for the care of elderly bodies deemed as 'in decline', this research proposes that there should not be a need for this sort of care. While the abolition of old age remains the primary objective, I argue that this objective is influenced by the desire to enforce an idealised version of the human. More specifically, an idealised *young* version of the human. As will be demonstrated further in this thesis, categories of age are defined by levels of independence, autonomy and one's perceived 'burden' on the health care system. In this way, the neoliberal agenda enshrined in anti-aging endeavours will be examined in further depth later.

At this juncture, it is important to understand the route current biogerontological treatment protocols are taking. Where technologies such as Trinfinity8 enforce neo-eugenic ideologies of an idealised human through infinite rejuvenation, hard science follows this same trajectory. The connection in the ideological underpinnings of these technologies is significant to mention,

for while they differ in form, the ageist discourses from which they emerge are the same. That is, both junk science and hard science are influenced, and informed, by neo-eugenic regimes that suggest old age is a disease-state that must be eradicated. Indeed, 'the Geroscience Hypothesis posits that … interventions that would retard aging would … simultaneously prevent or delay the onset of multiple chronic diseases' (Sierra & Kohanski 2016, p. 4). The perpetuation of scientific discourses surrounding age-as-disease has led to an increase in the funding of research focused on abolishing biological processes of aging.

As such, the hard science of caloric restriction has demonstrated repeatable successful results in non-human species, such as fruit flies, worms and mice. While fruit flies and mice have historically been the preferred test subject for biogerontologists, the *C. elegans* – otherwise known as a nematode, or worm – became a notable test subject in anti-aging research during the 1990s. Austad (2016, p. 6) details the use of the nematode, precisely for its 'aging biology [which], under conditions of overcrowding, food shortage, or high temperature – conditions not conducive to successful reproduction – developing worms enters an alternative 3rd larval stage called dauer', which is essentially a period of arrested development. Through manipulation of this biological function, through controlling food intake and mimicking caloric restriction, biogerontologists have reportedly enabled a tenfold increase in longevity in nematodes. Further, through the deletion of a specific gene – the clk-1 – in nematodes, scientists were able to extend the subjects' lifespans (Lakowski & Hemiki 1996). This has enabled the recent undertaking of clinical drug trials focused on mimicking caloric restriction. The primary study of note here is the repurposing of Metformin from a treatment for diabetes to a treatment for aging. Known specifically as TAME (Targeting Aging with MEtformin), the trial is co-ordinated through both the Food and Drug Administration and the American Federation for Aging Research, along with other trials, such as the repurposing of Rapamycin

for anti-aging purposes, known as mTOR. These trials mark the solidification of anti-aging research as hard science, and further, enables the rearticulation of aging as a natural process into a degenerative condition. Scientists such as de Grey and Sinclair's team, as outlined above, have noted that this condition can be slowed, if not 'cured', thus delaying the onset of other illnesses. In this way, aging is positioned as the root cause of a myriad of diseases, including several types of cancer, cardiovascular disease, diabetes, and Alzheimer's.

The studies into anti-aging treatments, then, become even more relevant within this framework. In relation to Metformin, which has been noted as a caloric restriction mimetic, Garg et al. (2017, p. 15) state that the drug activates 'AMP-activated protein kinase (AMPK) activity resulting in reductions in oxidative damage', a damage commonly attributed with the aging process. Garg et al. (2017, p. 20) further notes that throughout the last ten years, researchers have consistently produced evidentiary material suggesting a link between 'insulin/insulin-like growth factor[s] signalling and nutrient response pathways such as mechanistic target of rapamycin (mTOR) with the rate of aging'. As noted earlier, this research has largely been conducted on worms, fruit flies and mice. The results of the research imply that a strong sensitivity to insulin acts as a framework for increased longevity (Anisimov 2013). As such, given its known uses in treating diabetes through the stimulation of insulin and glucose production, Metformin has come to the foreground in possible existing medications that can be used as an anti-aging treatment. This existing research has been seen by rejuveneers as the beginning of a forthcoming wave of technological advancements in anti-aging (Wood 2016).

Indeed, as part of this 'wave', the Albert Einstein College of Medicine, Inc. has developed a clinical study quite similar to TAME, known as Metformin in Longevity Study (MILES). This study – as with TAME – seeks to find alternative purpose for already-approved FDA drugs. In

this case, Metformin has been identified as the primary choice, precisely because, according to the United States National Library of Medicine's ClinicalTrials.gov (2017) database registry, its effect of aging has already been notably studied. As discussed above, Metformin has been used in non-human organism studies and is noted to have extended the lifespans of several rodents and nematodes through the reduction of oxidative stress. According to the American Federation for Aging Research, 'these findings point to the likelihood that metformin may influence fundamental aging factors that underlie multiple age-related conditions in humans' (American Federation for Aging Research 2017). With the existing research providing a compelling case for the implications of anti-aging therapy, the purpose of the MILES research is to

> compile a repository of muscle and adipose biopsy samples obtained from young healthy subjects and older adults before and after treatment with potential anti-aging drugs. RNA-Seq analysis will be used to identify a unique biological "fingerprint" for aging in these tissues by comparing changes in gene expression in older adults post-drug therapy to the profiles of young healthy subjects (ClinicalTrivals.gov 2017).

While the study has been ongoing since May 2015, it is important to note that as at June 2017 the trial has entered Phase 4. According to *ClinicalTrivals.gov* (2017), this is the final phase, which is described as

> studies occurring after FDA has approved a drug for marketing. These including post-market requirement and commitment studies that are required of or agreed to by the study sponsor. These studies gather additional information about a drug's safety, efficacy, or optimal use.

Further, the MILES listing on *ClinicalTrivals.gov* states the human testing should be completed during December 2017. At the time of writing, the results were unavailable. It is entirely plausible, then, that Metformin may soon be re-branded as an effective anti-aging

pharmaceutical. Given that the research description states that the risk of dying from age-related illnesses increases by over one hundred from the age of 35, there are three immediate implications. That is, age-related illnesses are now being reframed as symptoms of old age; Metformin is being suggested as a tangible pharmacological anti-aging therapy; and there is now a clear indication of what age people might wish to begin their therapy. More precisely, the biopolitical regime of medicalising age now has a clear foundation for articulating the exact age that a person begins to elicit 'symptoms' of old age, and thus, *needs* to undertake treatment protocols.

In this way, I argue that these scientific developments are perpetuating notions of eugenic ideology, thus mobilising what I have thus far named the gerontological hygiene. Precisely because there is no overt attempt at genocide or murder, these strategies become neo-eugenic; that is, the subtle attempt at abolishing what has come to be framed as a medical pandemic for the perceived betterment of society as a whole. I argue that the medicalised abolition of aging is intertwined with biopolitical understandings of the ideal physical human. Further, as will be examined later in this thesis, if a person should choose not to undergo treatment, or otherwise fails to remain young, they are deemed less-than human and treated as such by institutions and government bodies. The notion of governmentality is thus critical for this thesis, precisely for the ways in which bodies are constructed, manipulated and controlled. As such, I turn now to the notion of Foucauldian governmentality, as his conceptual understanding of the control of bodies – both by internal and external modes of regulation – will be mobilised to expose the myriad ways older individuals are influenced to self-regulate and eventually, re-situate themselves within the medicalised space of the nursing home.

Governmentality and the Self

One can argue that 'government refers to a continuum, which extends from political government right through to forms of self-regulation— namely, "technologies of the self"' (Lemke 2002, p. 59), which are often 'willingly adopted by citizens to enhance personal well-being' (Nadesan 2014, p. 168). The concept of governmentality, however, may present a critical difference. That is, not only does it deploy notions of self-regulation, but also of the biopolitical right to make live and let die, which extends far beyond the reach of self-regulation. Indeed, governmentality is a concept elucidated by Foucault in various works, most notably, in lectures given during the same period of his expression of biopolitics, that is, 1978-9. In *The Foucault Effect: Studies in Governmentality* (Burchell et al. 1991), the authors translate lectures given by Foucault in which he defines and examines the notion of governmentality; that is, as the conduct of conduct. He describes the conduct of conduct in terms of 'a form of activity aiming to shape, guide or affect the conduct of some person or persons' (Gordon 1991, p. 2). Further, as Nikolas Rose (1999, p. xxi) argues, these include 'programmes, strategies, techniques for acting upon the action of others towards certain ends'. In this way, governmentality can be understood as the exercise of power directly related to micro and macro social behaviour. This is not to assume Foucault understood this as simply the systematic, large scale organisation of *human* conduct, for to assume this would be to underestimate Foucault's notion of governmentality. Indeed, the state appears as but one element in 'multiple circuits of power, connecting a diversity of authorities and forces, within a whole variety of complex assemblages' (Rose 1999, p. xxi). For Foucault, there is a need for understanding the micro scale of this activity (Gordon 1991, p. 2-3) and the level of individual reproduction as subjects:

> government as an activity should concern the relation between self and self, private and interpersonal relations involving some form of control or guidance, relations within social institutions and communities and, finally, relations concerned with the exercise of political sovereignty.

It is the connection between the self and institutions that is pivotal for this thesis, particularly regarding the institutions of the nursing home, the retirement village and hospice. Critically for this thesis, in relation to technologies of the self and self-regulation, Foucault also 'observed that the construction of self is linked to established forms of knowledge and institutionalised practices. Self is not an essence; it is created by the influence of multiple forms of power' (Holmes & Gastaldo 2002, p. 559). Specific historical power structures, such as the camp, have been instrumental in the discursive construction of hegemony.

It is interesting to note that governmentality has been expressed in different forms depending on its contextual location. Indeed, even within nations, for example the United States, governmental processes are quite different; some states allow capital punishment while others do not. It must be noted, however, that in both cases, the states in question are exercising the sovereign power of the right to let live or make die. The implications for the self here are that behaviour – and more than likely, behaviour modification – is linked to governance. Further, as Nadesan (2010, p. 1) argues, governmentality 'addresses how society's pressing problems, expert authorities, explanations, and technologies are organized in relation to particular kinds of problem-solution frames' (Nadesan, 2010, p. 1). Through the application, then, of specific punishments for specific acts, individuals residing within those states learn to modify behaviours in order to avoid punishment. 'Foucault's observation that technologies of the self were formed alongside the technologies of domination such as discipline' (Rose et al. 2006, p. 89) rings very true here and implicates a heavy biopolitical presence within the sphere of governmentality. It can be seen, then, that 'individuals … participate in their own disciplining, objectification, and subjectification' (Nadesan 2014, p. 168). The notion of the self, then, can be viewed as discursively constructed through the government of bodies and societies, as Nadesan (2014, p. 168) argues, 'biopolitics circulate within institutions and across individuals'

self-cultivations'; this is evident in relation to elderly people deemed unable to maintain their neoliberal responsibilities of productivity, through the mobilisation of institutions such as nursing homes, hospice care, and other facilities dedicated towards the active removal of specific individuals from societal view.

While both biopolitics and governmentality are concerned with the power over life and death between the individual and the state, 'governmentality takes aim not at the population as such but at the modes of governing including forms of subjectivation' (Larsen 2010, p. 202), and indeed, the conduct of conduct. 'The concept of governmentality construes neoliberalism not just as ideological rhetoric, as a political-economic reality, or as a practical anti-humanism, but above all as a political project that endeavours to create a social reality that it suggests already exists' (Lemke 2002, p. 60). It is critical to note the synthesis at work between political economy and a political anatomy of the body; the relationship between economy and body must not be overlooked here, for the implication here is significant. That is, one particular aim of governmentality is to discursively construct the human body, thereby shaping notions of normativity, subjectivity, and acceptability. When individuals or groups of a population fail to meet the criteria outlined by governmentality – those such as forms of the elderly, the physically disabled, homosexuals, imbeciles, the insane and so on – 'the purging of defective individuals becomes an essential part of the care of life' (Rose 2006, p. 57). The praxis of these ideas was, as illuminated previously, deployed in the U.S. through forms of forced sterilisation, segregation, and ultimately in the Nazi gas chambers responsible for the genocide of countless individuals.

Ultimately, throughout his analysis, Foucault identifies the primary element of governmentality as that of power: power of the state over the individual and institutions.

Perhaps the most notable aspect of governmentality that this thesis will examine is that of the right to make live or let die, which is biopolitical in nature. Nadesan (2008, p. 1) elucidates this point perfectly when she states that 'governmentality also explores how individuals are privileged as autonomous self-regulating agents or are marginalised, disciplined, or subordinated as invisible or dangerous'. Positioning individuals, or collectives, as invisible or dangerous often resulted in the removal of said individuals into camp zones such as asylums or prisons where the operators could – and indeed, did – exercise their power of the right to kill.

During Foucault's analysis of German neo-liberalism, he coined the term biopolitics in several lectures given between 1978-9, which were later published and translated into English in the volume *The Birth of Biopolitics: lectures at the College de France, 1978-1979* (2010). Foucault analyses, in this volume, biopolitics via an examination of various societal factors including liberalism and German neo-liberalism, matters of the state versus the individual, which are intrinsically linked to his notion of governmentality. Foucault also discusses the notion of freedom, positing that in liberal democratic states, freedom is inextricably connected to the concept of security. Biopolitical governance was indeed exercised over the population, allowing the sovereign to dictate and control the movements, choices, freedoms and desires of individual subjects and mass populations. The notion of freedom, one may argue, stems from that of the principle of right, which firstly established the parameters of the actions to which the sovereign was entitled. Indeed, 'freedom is not conceived as the exercise of some basic rights, but simply as the independence of the governed with regard to government' (Foucault 2010, p. 44). In this sense, it can be demonstrated that government allows certain activities to be carried out independently, however it must be acknowledged that these activities are entirely established and controlled by the government, able to be altered at any moment.

Hence, it can be deduced that 'freedom is never anything other … than an actual relation between governors and governed, a relation in which the measure of the "too little" existing freedom is given by the "even more" freedom demanded' (Foucault 2010, p. 63). In the domain of biopolitics, freedom, then, can be seen as 'an indispensable instrument of the liberal art of government' (Bröckling et al. 2010, p. 5). The new art of government consumes freedom, according to Foucault (2010, p. 63), in which case it must also produce it; indeed, liberalism 'formulates simply the following: I am going to produce what you need to be free'. Providing a sense of freedom to the public at large is perhaps the cleverest and most cunning aspect of governmentality, for it is this same aspect that allows us to be ruled. As Garland (1997, p. 196) states, 'to suggest that we are ruled "through our freedom" – that what we cherish as our autonomy, our individuality, our independence or power relations, is precisely the basis for our being governed by others – sounds analytically audacious and devastating in its political implications', devastating because the governing of freedom thereby constitutes the control and disenfranchisement of human bodies. In contemporary western societies, it is critical to understand that the dichotomous relationship between freedom and control, in specific relation to old age, is enforced through social and governmental policies. Agamben's notion of the camp is influential here, precisely because I argue in Chapter 2 that nursing homes are a contemporary incarnation of the camp. As such, I outline the origins of the camp below and aim to expose the violent treatment protocols for whom Alexis Carrel (1939) framed as the 'unfit'. It is critical to outline this framework here, precisely because I argue that while the contemporary incarnations of the camp are vastly different, the underpinning discourses that drove its creation are still operative.

Origins of the Camp

Several variations of the notion of the camp have been deployed throughout history. For the purposes of this thesis, my examination of the camp will reach only as far back as the seventeenth century and begins with an analysis of houses of confinement. During the sixteenth century and prior, the sovereign state practiced public execution and torture, which, despite its overtly violent nature, was intended to act as a method of finding truth and justice rather than as a method of punishment (Foucault 2001). Foucault (1980, p. 93) also suggests that 'we are forced to produce the truth of power that our society demands, of which it has need, in order to function'. Hence, when a discursive shift began during the seventeenth century, which saw changing attitudes towards poverty, disability, old age and the feebleminded, societal truths demanded a reconstitution.

This discursive shift ultimately saw the birth of houses of confinement, the focus of which did primarily belong to that of punishment. A significant event in the emergence of houses of confinement is the creation of the Hopital General in 1656, which was intended not as a medical institution, but rather as a semi-juridical and administrative structure (Foucault 1980). The Hopital General held absolute sovereignty over its inhabitants and jurisdiction without appeal, contextualising the Hopital General's opening as a significant factor in consequent regimes of quarantine and confinement. Foucault's (2001) elaborate discussion on madness is inextricably connected to the creation of houses of correction and confinement; his analysis extends as far as the Middle Ages and is concerned with the social and political discourses that created madness. He outlines, as stated above, a discursive shift in which a new attitude towards poverty and economic problems was adopted. Unemployment and idleness became key themes present in the city of confinement, and indeed, demonstrated how madness was perceived; madness became associated with idleness and poverty and these individuals were seen as

pariahs in need of removal from the public gaze. Foucault (2001, p. 63) discusses this as a significant moment in the history of un-reason:

> the moment when madness was perceived on the social horizon of poverty, of incapacity for work, of inability to integrate with the group; the moment when madness began to rank among the problems of the city. The new meanings assigned to poverty, the importance given to the obligation to work, and all the ethical values that are linked to labour, ultimately determined the experience of madness and inflected its course.

While the seventeenth century created houses of confinement as a response to the deepening societal concerns of madness and diseases, the eighteenth century saw the rise of the workhouse, which aimed to restore purpose for paupers, the disabled, and the insane by literally providing them with work, thereby reabsorbing unemployment. Thus confinement 'was no longer merely a question of confining those out of work, but of giving work to those who had been confined and thus making them contribute to the prosperity of all' (Foucault 2001, p. 50). By the end of the eighteenth century there were over one hundred such institutions across Europe; tracing the dissemination of workhouses may enable a genealogy of the evolution of institutions of confinement. As indicated by Foucault above, madness in the eighteenth century was associated with idleness, and confinement with its condemnation, hence the perceived value of the workhouse.

It was also in the eighteenth century that the sovereign deemed it necessary to provide a special regime for the insane – something separate from regimes for paupers and bodies deemed disabled and old – when it was recognised that within the insane existed the beast (Foucault 2001, p. 71). The concept of a beast within man began to inflect the course of the asylum; it had been thought that isolating these subjects would enable a reform, as Foucault (2012, p. 141) states, 'discipline sometimes requires *enclosure,* the specification of a place

heterogeneous to all others and closed in upon itself'. It had been thought that through isolation, the subject would become disciplined, resulting in the restoration of that subject's individuality. Like the Hopital General, the asylum enabled full sovereign control over its inhabitants – a control which was embodied through the mass disenfranchisation of those deemed insane – marking these institutions, then, as perhaps the most cogent example to examine in relation to the history of the camp.

The asylum, as its own entity, appeared in the late eighteenth century, and is known for the unliveable conditions in which the insane were forced to exist. Cells in the asylums were generally referred to as cages or human stables in which madmen would sleep, eat, and excrete (Foucault 2001). The description of such conditions reinforces the notion of the beast in man, however one may argue in retrospect that it was these very conditions that caused the beast to emerge through a system of dehumanisation. Proponents of asylums at the time justified these conditions through the notion that 'the animality that rages in madness dispossesses man of what is specifically human in him' (Foucault 2001, p. 73). Critically, as Pugliese notes, Foucault's conceptualisation of 'the "species body" remains anthropocentric in all of its determinations, and it is impossible to discern those other species that have been, and continue to be, infrastructural to the violent exercise of biopolitics' (2016, p. 19). Pugliese (2016, p. 19) notes the ways in which overwriting 'madness' with 'animals' exposes the parallels in treatment of those deemed mentally unfit with non-human entities. As such, it becomes clear that, in the west, 'humanity [has been] predicated on the animality of its others' (Pugliese 2016, p. 24). Thus, by forcibly imprisoning the mad in a cell as described above, these people underwent a dehumanising (Pugliese 2016, p. 34) process, thus deporting them from the realm of human in a violent biopolitical caesura. What constitutes humanness will be examined further in this thesis; at this juncture, however, the focus shall remain with that of the asylum.

Of note is that of the York Asylum in 1777, which was 'the fifth public institution in England to care for the insane' (Digby 2008, p. 218), and as such, represented one of the earliest recorded manifestations of humanitarianism (Digby 2008). The York Asylum acted, in a way, as inspiration for the development of the York Retreat as envisioned by William Tuke in the late 1700s. Although the York Retreat was vastly different in operation to the York Asylum, their purposes as a camp remained stable – that is, the management of human processes and the government of (human) life, and the (re)-construction of notions of the self. The first institution to be recognised as a 'Retreat' – known officially as the York Retreat – opened its doors in May 1796 as a response to the death of a Quaker[10] who had been poorly treated within the York Asylum (Digby 2008), with its primary aim to provide care for the mentally ill, or the insane, as the patients were often referred. Tuke's vision of an institution for the insane matched this notion of humanitarianism, which was centred on the fair and moral treatment of those deemed mentally ill, including a system of free travel throughout the halls of the Retreat. Punishment, however, was also a primary aspect of the Retreat, in which any undesirable behaviour would result in a patient being restrained onto a bed in a secluded room with minimal light (Tuke 1813, p. 80). In Tuke's own words, 'this room also affords an opportunity of temporary confinement, for any offensive acts, which it is thought the patient had the power to restrain' (Tuke 1813, p. 80). In this way, then, the notion that this Retreat was not characteristic of an asylum – because of a lack of both steel bars across windows and a high fence surrounding the property – becomes less convincing. Indeed, 'the asylum reduces differences, represses vice, eliminates irregularities. It denounces everything that opposes the essential virtues of

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[10] It is worthwhile noting here that the York Retreat initially only treated Quakers, as it was an institution founded by the Quakers 'Society of Friends'.

society' (Foucault 2001, p. 257). In the case of the Retreat, then, one might consider that what constituted offensive behaviours were anything opposed to the dominant values of society.

While it is true – at least according to Tuke's account – that the patients were free to roam specific areas of the Retreat, the fact remains that the Retreat was constructed to create a space in which these individuals characterised as mentally ill could be confined. The Retreat actively marginalised these individuals as somehow socially unacceptable, ultimately providing, for the remainder of society, a semblance of peace and safety in the knowledge that the insane now had somewhere else to inhabit. On a broader scale, inclusive of the asylum as a variation of the York Retreat, it must be noted that 'these institutions would at once rehabilitate the inmates, thereby reducing crime, insanity, and poverty, and would then, through the very success of its design, set an example for the larger society' (Rothman 1971, p. xxxiv). Hence, not only did the asylum provide safety and comfort for those who reside outside its walls, but also imparted specific hegemonic beliefs regarding behaviour and social awareness.

Tuke's Retreat becomes an excellent site for analyses of governmentality when one acknowledges the primary reasons for its initial deployment – that is, to (re)-shape normativity for those deemed insane. This process of segregating these individuals and publicly labelling them as somehow unworthy thereby disenfranchised them not only as individuals, but importantly, as human beings. What Tuke does not address in his account of the Retreat is neither what behaviour is deemed normal and, consequently, who shall be named insane; his description falls short by announcing the broad term 'symptoms of derangement' (Tuke 1813, p. 31), and other ambiguous terms, mania and melancholia (Tuke 1813, p. 120). Particular to Tuke's context were notions of insanity that 'regarded the madman as a creature set apart, who

was bestial rather than human'[11] (Digby 2008, p. 220). Tuke fails to consider 'how they are brought to experience their lives as "worthy" or "unworthy" of living [in society]' (Lemke 2010, p. 177-8).

This same concept would be used in other aspects of life, for example in the treatment of migrants, imbeciles, paupers, the disabled, and so on and would culminate with the so-called science of eugenics and the Nazi state, as previously discussed in this chapter. Tuke's failure to identify specifically who shall be named insane leaves the notion of normativity – of which the Retreat aims to restore – undefined, or at best, broadly defined. Perhaps this absence of definitive terminology can be accounted for by the reasoning that prior to 1840 the term 'normal' was largely mathematical and referred to standard deviations (Davis 2006). Unsurprisingly, however, this term has been used in a variety of contexts since, perhaps most notably in the discursive construction of hegemonic human behaviour in the context of what Foucault terms the emergence of a disciplinary society predicated on regimes of normativity. While public asylums had previously been deployed, the values and ideologies demonstrated in the humane care of the patients in Tuke's Retreat were appropriated soon after its deployment in York, and the asylum underwent a reform, becoming once more a popular method of governing those deemed insane, or otherwise socially unworthy. Perhaps the most interesting aspect of Tuke's Retreat that became widely adopted across the globe was that of segregation, and more accurately, that of quarantine, which 'represented nothing less than the victory of reason over unreason in western culture' (Rothman 1971, p. xix); as stated previously, it is this sense of reason, or rationality, that these institutions were trying to restore within the mentally ill.

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[11] This concept of the madman as bestial contributes to analysis of rationality as a defining human trait, which will be examined further in this thesis.

In the case of both the asylum and the prison, quarantine was an essential aspect – which doctors then believed was not a punishment but a 'cure' (Rothman 1971, p. 144) – allowing inmates, or patients, time outside their rooms only as a form of rewarding good behaviour. In this sense, much like Tuke's temporary confinement room, 'good 'behaviour provided a model of 'normal' behaviour, thus promoting notions of normativity and specific modes of 'correct' psychological existence. Although taking place over a century later, Foucault offered a rather contrasting view of the Retreat in hindsight, expressing it 'as a duplicitous exercise in religious internment and social coercion, and a pernicious ideological ploy that substitutes moral rectitude and mind control for physical manacles and confinement' (Charland 2007, p. 62). Foucault's analysis of the Retreat as employing techniques of social coercion and confinement ultimately exposes the Retreat as an early form of asylum, where he initiates the 'view that the physical chains of traditional custodialism were replaced by the mental manipulations of moral therapy' (Digby 2008, p. 222), thereby tarnishing both Tuke and his sentiments of the Retreat as a medical institution focussed on moral treatment, a concept first mobilised in France in 1793 by Philippe Pinel and widely acknowledged as undertaken at the York Retreat by Tuke (Sprafkin 1977). Although later asylums – those throughout the mid- to late-1800s – did embody the concept of moral treatment, this did not erase Foucault's observation of mental manipulations. As Rothman (1971, p. 138) states,

> the most important element in the new program, the core of moral treatment, lay in the daily government of the mentally ill. Here was the institution's most difficult and critical task. It had to control the patient without irritating him, to impose order but in a humane fashion. It had to bring discipline to bear but not harshly, to introduce regularity into chaotic lives without exciting frenetic reactions.

It is the 'daily government' and 'discipline' that implies the control and manipulation of the patient, which can also be seen in the York Retreat through confinement rooms and

straitjackets, among other forms of governance. The introduction of regularity and routine is itself demonstrative of governmentality in the structuring of everyday practice. Further, I argue that solitary confinement and use of physical restriction such as straitjackets do not demonstrate humane treatment, as Rothman implies above. Indeed, these techniques draws parallel with the treatment of animals in early twentieth-century slaughterhouses that kept their livestock in cages with no moving space, with some animals' legs chained (Patterson 2002). Importantly, while these practices do continue, a lot of these facilities have also been restructured under the rubric of cruelty. I note this precisely for the implications of dehumanising the mad in the asylum by (re)-constituting them as animals or beasts through similar treatments in isolation and restraint.

Charland (2007), however, criticises Foucault's philosophical analysis of the York Retreat, positing moral treatment as 'fundamentally designed to encourage autonomy, not oppression' (2007, p. 63). However, Charland ignores the idea that throughout the duration of moral treatment, 'the balance tipped to the side of repression' (Rothman 1971, p. 270), through various strategies exercising power over the subject and the subject's body. Charland's almost blind advocacy of the Retreat sees him also argue for benevolence as the central defining concept in the Retreat's therapy (Charland 2007, p. 63). Charland, though, sweeps past the fact that the Retreat employed techniques of confinement, segregation and quarantine, and physical restraint in certain instances where patients were not aggressive or dangerous, which are all characteristics of the asylum. In fact, as historical research demonstrates:

> one of Samuel Tuke's most active disciples, Godfrey Higgins, had obtained the right, which cost him twenty pounds, to visit the asylum of York as a volunteer inspector. In the course of a visit, he discovered a door that had been carefully concealed and found behind it a room, not eight feet on a side, which thirteen women occupied during the night; by day they lived in a room scarcely larger (Foucault 2001, p. 70).

It is documentation such as this that demonstrates the harsh nature of this, and similar, institutions, and almost completely nullifies Tuke's – and Charland's – assertions of the York Retreat as a society founded on benevolence. Techniques such as this were countered with the freedom to wander through the Retreat. However, this freedom is illusory when considering the patients lack of freedom to leave, or to be trusted with the control of their own bodies. These techniques were employed for medical purposes, with the goal of restoring confined individuals to a 'sane' frame of mind. Intrinsically, this also meant, restoring normative behaviour; that is, corporeally, verbally, and psychologically. The importance of hegemonic values must not be overlooked here, and Charland may in fact reduce the importance of this to further his own thesis, and in a way, he romanticises the Retreat as a quasi-perfect institution where 'staff and patients ate together, like a family' (Charland 2007, p. 67). Charland chooses to interpret this as a positive trait, while downplaying the notion of constant surveillance. Despite the Retreat being operated by Quakers who referred to both staff and patients as 'friends' – Quakers were, after all, known as the 'Society of Friends' – it can perhaps be argued that these friends were kept under surveillance as a method of re-constructing normative behaviour. It can be ascertained, then, that Charland ignores, as stated previously, several characteristics of the Retreat that bare striking resemblance to that of public asylums and prisons.

Tuke's Retreat did focus somewhat on constant supervision of its patients, however in the interests of freedom, patients were not watched and monitored closely every hour of every day, unlike in later asylums which although purposed for the mentally ill were run more like prisons. Foucault analysed this in *Discipline and Punish* (1975) where he 'proposed and expounded a kind of political analysis called the "microphysics of power", exemplified by the study of the application of disciplinary techniques as part of the intervention of the modern penitentiary

prison' (Burchell 2003, p. 3). Also, in *The Birth of the Clinic* (1973), Foucault once more analysed this concept, but in relation to the history of the hospital and social medicine, which 'led him to the study of institutional architecture and thus to Bentham and the panopticon' (Curtis 2002, p. 511). Jeremy Bentham's panopticon was a theoretical prison in which the inmates were located around a tower, inducing the fear in the prisoners that their every move was being monitored.

The purpose of the panopticon was to allow self-rehabilitation; the premise being that the fear of constant surveillance – and the mobilisation of isolation – would result in the prisoners re-shaping their behaviour to fit a normative and acceptable model, for 'once isolated, the prisoner began the process of reform' (Rothman 1971, p. 85). The notion of the panopticon is critical for this thesis, particularly in relation to not only the asylum, but to governmentality, both in a historical and in a contemporary context, 'panopticism is not a regional mechanics limited to certain institutions; for Bentham, panopticism really is a general political formula that characterises a type of government' (Foucault 2008, p. 67); in the sphere of the camp, panopticism acted, and continues to act, as a method of governing bodies which practised the control of rights, freedoms, obligations and duties, and behaviour. In this sense, then, the panopticon is a powerful technology of self-regulation, one that has demonstrated longevity in its role as a dispositif of hegemonic discourse. For Gwyneth Jones, a resident within the Veronica Gardens retirement village, owned and operated by Aveo, the notions of the panopticon and the camp are seen to be quite real. Indeed, the Australian Broadcasting Corporation's investigative journalism program *Four Corners,* in an episode titled "Bleed Them Dry Until They Die" (Four Corners 2017), exposed several miscarriages of justice concerning the treatment of residents. Aveo was firstly displeased when Gwyneth raised concerns about her living conditions and her housing contract. Documents collected by

Gwyneth herself exposed the surveillance the Aveo staff had practiced and the mistruths spread surrounding her character and her actions. When her concerns were not addressed, and Gwyneth continued to question management, her behaviour was deemed 'out of control' (Four Corners 2017) and Gwyneth was admitted, by staff, to a psychiatric ward for three weeks. Further, Gwyneth was then abruptly diagnosed with dementia, a diagnosis that was subsequently proven to be incorrect. I argue that this unethical and violent biopolitical move was intended as a method to make Gwyneth conform and produce Gwyneth's subjectivity as a docile body. In addition, these practices sought to discredit her as a person, placing her under medicalised quarantine, disallowing autonomy, freedom and choice. However, Gwyneth speaks back to her abuse in the report, powerfully arguing that 'the reason they had me forcibly admitted […] was to punish me, was to shut me up, was to silence me with drugs' (Four Corners 2017). Gwyneth's role in exposing the violent practices of Aveo indicate anything but docility, however her story also highlights the ways in which camp zones emerge in contemporary Australia in the seemingly safe spaces of aged-care homes. While Gwyneth admitted that '[this] has damaged my psyche' (Four Corners 2017), it is also worth noting that Gwyneth's dementia diagnosis was overturned by two separate specialists, who provided her with a perfect score of 30/30 for cognitive ability.

This chapter has examined the genealogy of both biopolitics and governmentality through a primarily Foucauldian lens in order to acknowledge the resurgence of eugenic ideologies, known now as neo-eugenics, on a global scale. The developmental evolution of the camp into retirement villages, nursing homes, hospice facilities and home care facilitate neo-eugenic strategies to confine, remove and eradicate those considered weak and/or inferior. Of note for this chapter were the technologies of Trinfinity8 – an anti-aging somatechnology using computer software to enhance and improve the mind, the body, and the spirit of those seeking

life extension for the fact that it encapsulates precisely the telos of anti-aging research – and caloric restriction through pharmacological intermediaries such as the repurposed FDA-approved drug Metformin. At stake in these sorts of technologies, I argue, are the implications for modes of subjectivity and the potential for the recalibration of the human as a species; as it is, the human has been largely defined through anthropocentric terms. It may follow, then, that the progression of biotechnologies, the distinction between human and non-human becomes ever blurred, opening a line of inquiry into the matter of the ethics of these technologies as curing interventions. As I examine in detail in the chapter that follows, the lines blurring between human and non-human, the notion of the pure human becomes a site of contestation, as does the concept of disease; biotechnologies, through their intervention on, and indeed, in the body, influence understanding of disease, enforcing hegemonic discourse on bodies deemed to be 'abnormal' or non-normative.

Chapter Two

Gerontological Hygiene: Emergence and Contemporary Practice

Chapter 1 examined the emergence of eugenics as a system of legitimatising regimes of murder and eradication in order to critically address the ways in which the human has been constructed. Stable definitions of the human are problematic, particularly when one examines those individuals at the biopolitical fringes of life. Coles (2010, p. 71) destabilises notions of the human – and critically, personhood – when he states 'the problem with defining personhood doesn't arise when the person in question is a person in the normal sense. The problem arises at the fringes of life (at the beginning and at the end of life)'. Although his comment is also problematic in that it relies upon the Bell Curve ideology to formulate his line of inquiry, I find this notion of the fringes of life to be quite powerful for this thesis.

Similar to inquiries into disability, which places lives 'lived on the margins' (Clapton & Fitzgerald 1997, p. 1), examinations of old age can be framed as such. Thus, it is the identification of an individual at the fringe of life – specifically the form of 'elderly' that comes to be synonymous with decrepitude, frailty and disease (Gilleard and Higgs, 2011) – that is the focus of this chapter, which maps the conditions generative of gerontology's emergence as a discipline aiming at re-coding the 'old' body as existing in a disease-state. Whether or not elderly individuals self-identify as existing in this fringe state is of less significance than how political, economic and social biopolitical discourses and institutions identify them. Imposing the notion of marginal life upon the body politic can itself be seen as a foundational movement towards gerontological hygiene. Critical to this chapter is the emergence and perpetuation of a neo-eugenic paradigm, whereby practices of hygiene continue to govern bodies and disenfranchise specific forms of the human. This chapter proposes that elderly bodies have

become a primary figure for neo-eugenic hygiene practices. These practices can be considered in a number of ways, though for the purposes of this thesis they will be examined through the governing and regulating practices of the medicalised elderly body that not only produce and perpetuate discourses of frailty and disease, but, critically, discourses of the elderly body – as a homogenised state of being – *as* a disease-state requiring intervention – medical or otherwise. This chapter is theoretically underpinned by Foucauldian archaeology; while this may seem at odds with the genealogical approach in the previous chapter, I contend, as other scholars have demonstrated (Burrell 1988; Visker 1995; Bevir 1999), that both approaches are not necessarily exclusive; on the contrary, I would argue that the articulations of power and surveillance of the body present a complimentary and substantive relationship between these two approaches. I mobilise an archaeological frame here to map the discursive transformations of 'elderly' bodies in social, economic and (bio)-medical perspectives.

Further to what has been covered in the Introduction, Foucault's notion of archaeology emerged as a critique of the traditional History of Ideas approach to historiography. As Foucault articulates it (2002, p. 154), the history of ideas 'is the discipline of beginnings and ends, the description of obscure continuities and returns, the reconstitution of developments in the linear form of history'. Archaeology, however, is anathema to a concept of pure origins; rather, it aims at exploring the ways in which knowledges and discourses are (trans)formed. Indeed, 'archaeology is much more willing than the History of Ideas to speak of discontinuities, ruptures, gaps, entirely new forms of positivity, and of sudden redistributions' (Foucault 2002, p. 187). Foucault's archaeology articulates the point-of-origin approach as problematic precisely because a discourse is a compilation of statements and enunciations that emerge concurrently across a broad arena and are not attributable to one single person at one particular moment in history. Importantly, archaeology, as Foucault frames it, rejects the notion of a

stable point of origin and describes 'discourses as practices specified in the element of the archive' (Foucault 2002, p. 148), challenging and questioning the 'already-said at the level of its existence' (2002, p. 148).

The archive in a Foucauldian frame '*is the general system of the formation and transformation of statements*' (Foucault 2002, p. 146, emphasis in original). Foucault's concept of the 'archive' works to question the manner in which certain statements come into existence, the meaning/s attached to their enunciation and the ways in which statements can be grouped together in order to constitute a discourse; that is, the conditions of their appearance and the domain into which they appear (though may not necessarily remain). Equally important, then, to the statements *included* in a discursive formation are those that are *excluded* from a particular domain. To be included in the archive, then, is to appear as an enunciation in a specific system of statements. Further, these systems can be seen as the embodiment of a discourse, which in turn enables the formation of a discipline. I draw on Foucault's work here in order to map the emergence of gerontology precisely as a *discipline*. It is the work of archaeology to identify and define discourses and to demonstrate 'those discourses as practices obeying certain rules' (Foucault 2002, p. 155); these rules can be seen operating in both enunciative fields and the archive.

Archaeology is further concerned with 'discourses in their specificity and desires to determine how and why a certain set of rules is irreducible to any other' (Foucault 2002). A series of questions emerge from this: How can a discourse adhere to a specific set of rules? What are the conditions of its appearance? How is it possible to discern the modalities of one discourse in relation to another? These questions are critical for this chapter as I work to examine the field of gerontology as not only a discursive formation, but as a discipline embodying specific rules that differentiate it from closely related scientific bodies of knowledge known as

geriatrics and biogerontology. Importantly, Foucault acknowledges the *oeuvre* – the body of knowledge – not as a relevant division in which archaeology is concerned; rather archaeology is concerned with the 'discursive practices that run through individual *oeuvres*, sometimes govern them entirely, and dominate them to such an extent that nothing eludes them; but which sometimes, too, govern only part of it' (Foucault 2002, p. 156, emphasis in original).

In order to speak of an oeuvre, the notion of a discourse first needs to be examined; that is, the series of statements and enunciations applicable to a certain power/knowledge domain. This applicability can be quite difficult to ascertain, yet Foucault observes the relations between statements that link them to the exclusion of all others. Specifically, he frames these relations as forming 'between institutions, economic and social processes, behavioural patterns, systems of norms, techniques, types of classification, [and] modes of characterization' (Foucault 2002, p. 49). For Foucault, it is precisely these relations which are constitutive of conceptual formations (2002, p. 66). However, it is important to mark the false unity that Foucault describes: while these conceptual formations, discourses and disciplines may seem coherent and unified through the relation between its statements, they may also be discontinuous: precisely because of the way that ideas and objects change, mutate, transform and potentially become incompatible with the discourse in which it has been shown to exist.

These discontinuities, discursive ruptures and transformations are critical for this chapter, particularly for the ways in which they account for the emergence of gerontological discourse as distinct from other age-related fields of inquiry. Indeed, the exclusion of certain statements from a discursive formation must be seen as productive rather than repressive. Further, Foucault (2002, p. 67) marks what he terms as 'strategic choices' as a major force in discursive formations, framing discourse as essentially incomplete and open to interruption and internal

transformation (Foucault 2002). As will be shown, gerontology remains open to these interruptions and strategic transformations, particularly with the advent of ever-evolving somatechnologies aimed at mastering the aging process. As I demonstrate below, the discipline of gerontology is also transformed and elaborated by its imbrication with an entire series of other discourses, including economic, technological and biomedical.

Through the case study of the Regis Nursing Home franchise, examined as neo-eugenic medicalised quarantine sites, this chapter draws on the notion of the surveillance society in order to trace specific ways 'the elderly,' as a biopolitically targeted demographic, is codified, regulated and (re)-constructed. Nursing homes can be broadly defined as a 'private or public residential facility providing increased levels of long-term care' (Empower Line 2018), specifically focussed towards any person who is 'unable to safely care for themselves in a community setting' (Empower Line 2018). More commonly, nursing homes can be considered a form of 'institutional care', rather than home-based care. Whitlatch and Noelker (in Birren 2007) draw a comparison, where they state that 'caregivers of nursing home residents often perform many of the tasks they did while caring at home, including assistance with eating and walking' (p. 242). Typically, a nursing home will include 24-hour care or supervision and include services such as 'rehabilitation therapies and medical monitoring as well as custodial care including assistance with bathing, dressing, and eating' (Empower Line 2018). These spaces, then, are predicated upon the notion that someone is *unable* to care for themselves and thus 'a strategy of containment is integral to the structure and operation of nursing homes, which by their logic assume the passivity and incompetence of residents' (Dannefer in Binstock and George 2011, p. 12). Hence, I argue that the nursing home came to existence through epistemologies of old age as *Fourth Age* – that is, as frailty, decrepitude and ultimately, as economic burden (Phillips, Ajrouch & Hill 2010).Thus, these spaces can come to be seen as a

mode by which society can 'abandon' older people (Achenbaum 2013). Importantly, I focus specifically on nursing homes only, rather than on retirement homes and hospice facilities precisely because the nursing home characterises what will be examined in this chapter as Fourth Age. Retirement homes are more characteristic of Third Age, or as an acknowledgement of the warning signs that Fourth Age approaches; thus, this can be seen as a pre-nursing home facility and quasi-medical. Hospice facilities provide end-of-life care and hence are excluded from my analysis on the basis that the individuals residing within those facilities need heavy surveillance in order to make their end-of-life path as comfortable as possible. Hence, the nursing home will be examined as a medicalised quarantine site predicated on pathologisation and medicalization of the aged body in order to construct old age as not only inherently problematic, but importantly, as a disease-state.

As this thesis traces further in this chapter, nursing homes can be seen as underpinned by historical notions of the almshouse, which Rothman (1971) exposes as not only housing the psychologically 'infirmed', but also those deemed decrepit and diseased. Achenbaum (2013) traces the long-held mistreatment of people within mid twentieth-century nursing homes in the US., where a U.S. Senate Special Committee on Aging declared mental institutions, 'though some of them snake pits' (p. 76) as preferable to some of the nursing homes in the country. Evident here is an underlying discourse of biopolitics suggesting to make live and let die (Foucault 1977), where residents of American nursing homes did not include '24-hour coverage (care), a fire alarm system [or] nutritionally adequate food' (p. 77). Further, an inquest into nursing home care in the U.S. found that

> (1) nursing homes were not adhering to Medicaid regulations enacted in 1967; (2) despite a
> high incidence if psychopathology, nursing-home patients received little psychiatric treatment
> and minimal physical care, from ill-trained aides at understaffed sites; and (3) there were
> "numerous examples of cruelty, negligence, danger from fires, food poisoning, virulent

infections, lack of human dignity, callousness and unnecessary regulation" (Achenbaum 2013, p. 76).

While this was the case in 1970s America, it is significant to mark the discourses that underpin these sorts of treatment, specifically in terms of a hierarchy of life. I argue that with an *a priori* assumption of understanding old age as always-already decrepit, diseased and thus 'unfit', treatment such as what Achenbaum is able to emerge. Importantly, Achenbaum (2013) also highlights more recent cases of 'letting die'; that is, during Hurricane Katrina in 2005, Robert Butler described that class and race were 'dominating factors in survival. Older persons in their own homes and in nursing homes were often abandoned' (Achenbaum 2013, p. xii). The historical connection to almshouses – as detailed in this Chapter – reiterates the discourse of 'removal-as-necessary' already traced in this thesis and highlights contemporary discourses have yet to shift. While parameters of healthcare have changed in the forty years since, rising healthcare prices in the U.S., the U.K. and Australia have seen a desire to remain *outside* these spaces, which are largely seen as 'sterile and controlling medical-like environs' (Golant in Binstock and George 2011, p. 207), which furthers my framing of nursing homes as medicalised quarantine sites.

Importantly, I do not wish to generalise and frame *all* nursing homes this way. Indeed, as Golant (in Binstock and George 2011, p. 215) suggests, 'some look more like vacation resorts, others resemble boarding houses or dormitories. They have different rules regarding physical infrastructure requirements, the care requirements of the residents they can admit or retain, and their operating procedures'. However, I would suggest that despite the important differences among and between institutions, nursing homes more broadly are underpinned by similar discourses described above – that is, the residents are understood as existing within the framework of the Fourth Age and are thus, already diseased. Interestingly, research by Deborah

T. Gold (in Binstock and George 2011, p. 242) found that perceived proximity to death 'increases the likelihood of nursing home placement by 50%', enforcing my argument above that nursing homes more generally are underpinned by assumptions of frailty, decrepitude and disease. The primary differences in physical and care infrastructures, I argue, can be determined through a difference in economic capital, which is discussed later in this thesis chapter, precisely because welfare schemes such as Medicare 'do not cover long-term care costs, such as nursing home and supportive home benefits, for those with needs for help in daily living' (Moon in Binstock and George 2011, p. 299). As such, those who are unable to pay for high-quality care are often treated as 'faceless' (Golant in Binstock and George 2011, p. 217).

As such, it will be demonstrated that these nursing homes operate to stigmatise their elderly residents through a series of codes, regulations and practices that are deeply embedded within both every day and medical discourses. Nadesan (1996), for example, outlines how organisational identity and managerial discourses influence subject positions. While her framework differs from my own, it is useful to consider the ways in which subject positions manifest in response to organisational and managerial understandings of medicine and health. That is, the medicalized framework of the nursing home defines and evaluates its residents through certain subject positions – *old, frail, decrepit, unproductive* – thus, there is a correlation between practice, policy and discursive constructions. In order to examine the practices outlined above, it is necessary to trace a brief genealogy of the emergence of gerontology which, since its emergence, has been quite contentious; specifically, regarding its discursive production, both as a legitimate field of inquiry and as a scientific practice (Achenbaum 1995; Katz 1996). Notions of health, hygiene and disease were traced in Chapter 1 through a Foucauldian lens, however what was left absent from my initial genealogy was that of the

foundational dispositifs that enabled the field of gerontology to come into existence. This was a purposeful exclusion, for while the same ideologies exist within gerontological hygiene as that in eugenic regimes of racial hygiene, these anti-aging discourses can be seen to have influenced those same regimes. The notion of gerontological hygiene formulates the crux of this thesis, where contemporary neo-liberal society has not only sought to homogenise 'the elderly', but has also thrust these people into a complicated biopolitical regime of quarantining and medicalisation. This chapter positions gerontological hygiene as facilitated through neo-eugenic strategies, such as disenfranchising policy, the demand for elderly bodies to remain socially and economically productive, and the development and deployment of somatechnologies that ultimately construct a biopolitical discourse that states we are no longer allowed to get old.

It is appropriate, therefore, for this thesis to examine the emergence of gerontology as a discipline in order to demonstrate precisely the power of the biopolitical governance of the aged body as well as the medicalisation of age. Deployed through a Foucauldian archaeological framework, the relations between gerontology and geriatrics will be detailed, specifically in terms of the discursive ruptures that disallow geriatrics to enter the field of gerontology, and vice versa. The critical frame provided by Elie Metchnikoff will be examined for his perspective of age as a disease can be seen to have heavily influenced eugenic hygiene regimes culminating in World War II and early governmental strategies of quarantine and eradication. It is critical to note here that Metchnikoff will not and indeed *cannot* be named as a founding father of gerontology, specifically because to do so would encourage a liberal humanist discourse. Achenbaum (1995) also asserts that gerontology, as a field, has many origins. He argues that Metchnikoff held an established notion of the desired trajectory of the field, but that others in the field simultaneously contributed to its development. Indeed, within the frame

of an archaeological analysis, the dispersion and ruptures traced by Foucault prevent such a naming. As Foucault (2002, p. 159) states:

> by deploying discourse throughout a calendar, and by giving a date to each of its elements, one does not obtain a definitive hierarchy of precessions and originalities; this hierarchy is never more than relative to the systems of discourse that it sets out to evaluate.

An attempt to name Metchnikoff as the founder of gerontology, and therefore hold him solely responsible for the discursive formation, would therefore not accurately account for the complexities entailed in the formation of gerontological discourse. Indeed, it would invisibilise the ruptures, discontinuities and breaks that conditioned its appearance. The implications of this discourse will be specifically examined in relation to the construction of old age as a disease-state.

Further, as will be examined throughout this chapter, the medicalisation of age is embodied through a biosocial identity of the elderly demorgraphic, which is inextricably connected to somatic experience, specifically the ability to work and labour (Arendt 1998). Rabinow defines biosociality as when 'nature will become known and remade through technique and will finally become artificial, just as culture becomes natural' (1996, p. 99). This notion is critical for this chapter as it elucidates the highly constructed nature of the aged experience and the influence of biopolitical discourses responsible for the gradual move away from the understanding of age as a natural biological process toward old age as a disease-state. Biosociality is currently commonly articulated as a rearticulation of once-stable borders between the natural and cultural (Katz 2010, p. 361), facilitated through a set of expanding crises – reproductive, neurochemical, vascular, cognitive – which are perpetuated through pharmaceutical interventions and deepening understandings in genetic knowledge (Katz 2010). Accordingly, this chapter aims to demonstrate that certain elderly bodies have been subject to three major

biopolitical regimes, mobilised each time through both government and social policy; that is, the medicalisation and pathologising of old age; the re-signification of old age; and the somatechnological interruption of biological aging.

This chapter will progress to examine Foucault's 'Therapeutic Regimes', which will be used to deploy the notion that many elderly people are compelled to re-code themselves through their highly regulated performance of age. Critical to this chapter is the notion of the neo-liberal subject, where various elderly bodies are commodified and heavily surveilled through a system of governmentality. As such, this chapter will draw upon Foucauldian governmentality theory, as outlined in Chapter 1. This chapter will move on to examine recent and emerging anti-aging somatechnologies, such as telomere-based therapies; these emerging practices reflect the current attitude towards anti-aging and the re-positioning of gerontological research into biogerontological research; that is, from pseudo- or junk-science into hard science. However, in the first instance, it is critical to articulate the framework in which these technologies emerge – that is, using a Foucauldian theoretical trajectory, I will outline the archaeology of gerontology as a discipline and the resulting biogerontological anti-aging research.

Archaeology of Gerontology

Underpinning this section of the chapter is a question posed by a leading figure in the sociology of gerontological inquiry, W. Andrew Achenbaum: '[h]ow has [gerontology's] relationship to other disciplines and professions changed over time?' (Achenbaum 1995, p. 2). Moreover, it is critical to not only understand how, but *why*. The shifts in understandings of, and approaches to, gerontology, can be examined through Foucauldian Archaeology, as this section seeks to demonstrate. Chapter 1 detailed the biopolitical and governmental underpinnings of contemporary Western approaches to aging and the resulting somatechnologies – ranging from

Trinfinity8 to caloric restriction and adipose therapies. However, it is critical to understand the historical context of aging and the approaches to old age that have informed contemporary Western understandings.

In order to examine gerontology, I will outline different understandings of what aging is and how it came to be constructed in different ways. As will be shown, recent research has developed a series of chronological categories such as Third Age, Fourth Age, positive aging, productive aging and negative aging (Neugarten 1974; Estes 1979; Henwood 1995; Powell & Biggs 2000; Powell & Biggs 2003; National Strategy for an Ageing Australia 2001; Katz 2001; Powell 2006; Cardona 2007; Phillips, Ajrouch & Hill 2010). More than the passage of time, which is the most obvious way to define aging, biogerontologists today are less concerned with chronology and more concerned with biochemistry. Indeed, 'the problem is no longer one of tradition, of tracing a line, but one of division, of limits; it is no longer one of lasting foundations, but one of transformations that serve as new foundations, the rebuilding of foundations' (Foucault 2002, p. 6). In the archaeology of gerontology, there have been various understandings and definitions of age, however as the discipline of gerontology has mutated, so too have definitions.

It is critical to mark these shifts, as they map the discursive conditions that shape, influence and mutate not only notions of age, but also the field of gerontology. Further, it must be noted that the shifts in definitions of, and approaches to, age are bound with biopolitical regimes of the body. Where Chapter 1 of this thesis traced the critical implications of eugenics on the construction of old age as disease-state, it is important now to understand how the category of age was itself co-opted into a eugenic framework. That is, why was old age constructed as paramount to being 'unfit', as Alexis Carrel (1935) might suggest? Through tracing the

archaeology of understandings of age and the legitimisation of old age as a problem to be fixed, it is hence possible to further understand the inter-relation of complex discourses operating to mobilise gerontological hygiene. Part of these discourses are concerned with definitions of age, which inform and influence approaches to both youth and old age. Olshansky, Hayflick and Carnes (2002, p. 93) deploy a valuable definition of aging through a biochemical lens; that is, as 'the accumulation of random damage to the building blocks of life—especially to DNA, certain proteins, carbohydrates and lipids (fats)— that begins early in life and eventually exceeds the body's self-repair capabilities'.

Further, Heward (2010, p. 231) also notes that 'aging is a biochemical phenomenon influenced by both genetics (both between and within species) and the environment'. Drawing from senescence discourse, biogerontologists tend to agree that as a degenerative process, characteristics of old age appear at different times in a lifespan between various species. For this reason, biogerontologists measure aging through biological function than the mere passage of time (Heward 2010). This thesis will adopt the definition of aging as a random accumulation of damage eclipsing the human body's ability to self-repair. Further, contemporary understandings of aging in a social and political sphere will be shown to combine the chronological and biological processes in order to construct the medicalised elderly body not only as economic strain, but also as a disease-state. Indeed, the biopolitical institutions responsible for regulating aged bodies are more concerned with the passage of time. The effect of this is the homogenisation of the 'aged experience' and the assumption that the body ages universally across the human species, which will be examined further in this thesis chapter. Despite the acknowledgement of Third Age, Fourth Age and the reconstitution of bodies as 'young old', 'old old' and 'oldest old' (Neugarten 1974; Phillips, Ajrouch & Hill 2010), I argue that these categories operate to further neo-eugenic ideologies of hygiene and mobilise

systematic regimes of eradication for specific categories of the human – specifically those existing at what has been framed as the fringes of life, which will be examined throughout each thesis chapter.

Categories of the (non)human are diverse and like all categories of the (non)human, the elderly have historically been constructed and mobilised in a variety of ways. Stephen Katz (1996) details the body as polysemic in a medieval context, where the interconnection with the cosmos enabled people to construct the body as 'multiply signed, in its capacity to represent an array of universal forces and moral principles' (Katz 1996, p. 30). He elaborates that old age was constructed through a combination of astrology, humors, seasons and the elements of the earth (Katz 1996). Specifically, old age and femininity were grouped together as 'cold and moist and associated with the humor of phlegm, the season of winter, and the element of water' (Katz 1996, p. 31). Age was codified not through the passage of time, but rather through both the physical and spiritual manifestation of the body; this framework contributed to Enlightenment conceptions of the body, as well as informing early medical practice.

Elderly people were not necessarily viewed in economic terms in premodern societies, as they are today, precisely because they were understood in terms of the connection between the physical and spiritual, where a youthful soul could be seen to inhabit an 'old' body and vice versa. Perceptions of elderly people, then, were primarily considered through a spiritual lens (Katz 1996, p. 36). This itself demonstrates the critical discursive ruptures and discontinuities in the conceptualisation of aging and the very differences that disallow a seamless History of Ideas (Lovejoy 1936) approach to the topic; that is, a neatly linear and cause-effect approach, with clear beginnings and ends. Through the Renaissance works of Gabriele Zerbi, Luigi Cornaro and Francis Bacon, ideas about longevity shifted towards science and medicine in the

eighteenth century. Katz (1996) details a long and intricate history of writings on age, longevity and health, stretching back to the early 1700s, prior to the institutionalised medicalisation of age. The purpose of these texts[12] was to vilify old age, though not in terms of disease, but rather, in terms of a general corporeal decline, hence the purpose remained to preference youth.

Thus, narratives of old age as a state to be avoided have long produced elderly people as Other.

Critical to mark here is that this production seems only negative when applied through a white, middle-class, and ethnocentric framework. There have existed – and continue to exist – a diverse range of cultures, such as various Australian Aboriginal[13] and American Indian[14] cultures, where those deemed 'old' have historically differed from the rest of the population in a positive manner. It is still important to note that culturally the bodies of elderly men and women were praised and worshipped in many early societies. In modern societies, however, and with more advancements in medical knowledge and practice:

> the body became the material resource for scientific discovery about old age. In the late 19th and early 20th Centuries, medical geriatricians such as Jean-Martin Charcot, Elie Metchnikoff, and Ignatz Nascher transformed the aged body into a separable senile form of life encompassing new scientific truths about aging (Katz 2010, p. 357).

As medical discourse has developed, old age has progressively become constituted as problematic and not only in need of treatment, but also of eradication. Narratives of life prolongation and immortality have existed for centuries, however bodies deemed 'elderly'

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[12] Specific texts to which I refer to are George Cheyne's *An Essay on Health and Long Life* (1725) and Christopher Hufeland's *The Art of Prolonging Life* (1797).

[13] Tribes such as the Amplitawatja, Anmatjirra and Alyawarra of Northern Territory.

[14] Particularly the Choctaw tribe, whom originally lived in what are now the states of Mississippi and Alabama (Akers 2013).

were not classified as less than human, as diseased, or as an economic stressor. The emergence of medicine and the reinterpretation of both disease and death did not erase those narratives, rather they amplified them through the (re)-conceptualisation of the aged body as caught in a process of decay that would inevitably lead to death. Katz (1996, p. 41) describes the discourse of senescence as 'extending and distributing death throughout the body', which 'transformed the aging process into a constant dying' (Katz 1996, p. 41). Elie Metchnikoff asserts in his text *The Prolongation of Life: Optimistic Studies* (1908) that a deep fear of death led to the quest for perpetual youth and a proliferation of anti-aging texts and myths, such as the fountain of youth. Indeed, Metchnikoff traces this discourse back to several ancient societies – Greece, Rome and China – and provides a brief detail of the emergence of the golden elixir myth and the draught of immortality.

Metchnikoff expands on this notion of death inasmuch as he questions whether 'natural death' ever truly occurs in any species. Indeed, he states 'true natural death must be very rare in the human race' (Metchnikoff 1908, p. 119). In the face of medicalised notions of age and death, Metchnikoff asserts that death is *unnatural*, which I argue constitutes a discursive rupture from theorisations of death as a natural biological occurrence as evidenced in earlier historical scholarship on aging (Quetelet 2013; Nascher 1910a, 1910b, 1913, 1914; Hall 1922). While there is evidence to suggest that early theorisations of aging also framed this process as a disease, particularly the work of Roger Bacon in the thirteenth century, author of *The Cure of Age and the Preservation of Youth* (Bacon 1683; Morley 2004), I argue that this would be an inaccurate reading. Old age has been framed as physically undesirable due to a general state of decline, however this is less a pathologisation of the aging process and more an acknowledgement of the ways in which youth – and ideal corporeality – can be preserved.

The primary difference I note here is that at the time Bacon published his text, age itself was seen as the *cause* of diseases and decrepitude, rather than as a disease itself. This discursive shift can be seen to have occurred over the next six hundred years, as understandings of biology and medicine evolved through the discovery of genetics, DNA and hygiene. The discovery of genetics, for instance, allowed notions of health, aging and death to be reframed; though still through the lens of biology, aging and health came to be seen as deficits, defects, and a result of poor genetics (Bengston & Schaie 1999). Framing aging in this way enables the notion that old age is indeed a disease, caused by inferior genetics, as argued by George Edward Day in *A Practical Treatise on the Domestic Management and most Important Diseases of Advanced Life* (1849). The evolution of medicine and understandings of the body – through the emergence of such disciplines as geriatrics – solidified the fear of death that Metchnikoff traced, specifically because of the knowledge that there was a direct correlation between aging and dying, resulting in a rejuvenated and focussed search for life extension.

Within this search can be seen the emergence of categories of age which embed codes and regulations on the bodies in each category. Sears (1986), for example, traces the medieval conception of four distinct ages – those being childhood, youth, maturity, and old age – which seem to have translated well through history, surviving in a contemporary context, though slightly re-framed. To provide some brief detail of the four distinct age categories that demonstrate active (re)-constructions of aged bodies, Gilleard and Higgs (2011) frame Third Age as aligning with discourses of productivity and health – where one's social and economic productivity is typically well established and one's health is free of frailty, decrepitude and illness. The Fourth Age is characterised by a steep decline in health, leading not only to frailty and decrepitude, but also a loss of autonomy and both mental and physical ability. Indeed, Grenier and Phillipson (2014, p. 57) state that 'the "fourth age" is a concept used to demarcate

experiences that occur at the intersection of advanced age and impairment'. Importantly, Grenier and Phillipson (2014) expose the role of agency in older life as a critical move in understanding – or re-thinking – the experiences of older people. However, as Grenier and Phillipson (2014, p. 55) also note, 'frameworks for "growing old" are ordered around "third age" issues of health and wellness with older people expected to live out their later years as productive and active citizens'. This highlights certain problematics, whereby those approaching, or already-in, the Fourth Age are excluded from contemporary discussions of agency.

Further, Phillips, Ajrouch and Hill (2010) draw on a host of scholars to define four categories of age; childhood, or First Age, has been identified as a period of dependency and immaturity; followed by the Second Age, represented as an age of 'maturity, independence, responsibility and economic activity' (Phillips, Ajrouch and Hill 2010, p. 215). Similarly, the Third Age mimics and expands upon the Second Age, depicted as a 'period for personal achievement and fulfilment' (Phillips, Ajrouch & Hill 2010, p. 215; Neugarten 1974; Gilleard & Higgs 2005; Pickard 2014), whereas the Fourth – and arguably final – Age is most often characterised by decrepitude, frailty, illness, dependence and death (Phillips, Ajrouch & Hill 2010). The synonymous nature of Fourth Age with narratives of decline are further imbued with assumptions of a lack of agency, as mentioned above. Indeed, often agency is understood as co-constituted by 'a degree of health that is less likely to be present in the "fourth age" [which] create discrepancies for older people with impairments' (Grenier & Phillipson in Baars et. al 2014, p. 56). As such, 'the implied message is that health, activity and independence are necessary for agency' (Grenier & Phillipson 2014, p. 56). These nominal definitions can be seen to reflect biopolitical hierarchies of life that have emerged through the stabilisation of gerontology as a discipline, whereby strategies to prevent Fourth Age have been deployed on

a macro scale through what has been termed 'positive aging' (National Strategy for an Ageing Australia 2001). This chapter details this notion of positive aging, which ultimately aims to disallow individuals from reaching the Fourth Age through various biopolitical regimes that categorise the Fourth Age as the fringes of life.

In this description of the 'fringe of life' exist a number of relations that condition the emergence of old age as a marginal state, and more specifically, as a disease-state. These relations operate to characterise the discourses surrounding old age and the resulting practices and disciplines; critically, these are 'relations that characterise discursive practice itself … a group of rules that are immanent in a practice and define it in its specificity' (Foucault 2002, p. 51). The discipline of gerontology is underpinned by one such group of rules; that is, what Foucault terms a system of formation. In Foucauldian terms, a system of formation involves the following:

> [it] lays down what must be related, in a particular discursive practice, for such and such an enunciation to be made, for such and such a concept to be used, for such and such a strategy to be organized. To define a system of formation in its specific individuality is therefore to characterise a discourse or a group of statements by the regularity of a practice (Foucault 2002, p. 82).

In specific relation to discussions of old age, there exist two primary disciplines, that of gerontology and geriatrics, where each field is composed of similar, yet different, enunciations and statements. That is, what is stated for geriatrics cannot be stated for gerontology and vice versa. For example, geriatric journals, such as *Journal of the American Geriatrics Society* (Applegate 2015) are concerned with polypharmacy, usefulness and individual worth in organ transplants, types of hospital care and other topics located specifically in the institution of medical practice. While some gerontological research can be located within medicine, such as recent publications investigating oxidative stress and frailty (Saum et al. 2015), this same research extends beyond medical models of inquiry into social and cultural research, which

focuses on such things as environmental and social aspects of ageing. Gerontological research, then, appears at the interface between medicine and socio-cultural environment, whereas geriatrics remains the key concern of this medical discipline. The regularity of each, as discursive practices, can be seen to have emerged through discursive ruptures and transformations, which is constituted by a complex set of relations and mutations (Foucault 2002).

Gerontology, then, can be seen as a complicated system of formation underpinned by a group of rules that determine what it can include and what it, necessarily, must exclude. This, according to Foucault (2002) above, enables its formation as a discipline. As a discipline, gerontology can be described as having a complicated emergence, existing as a node in a fragmented network. Indeed, Stephen Katz (1996) traces these complications and, in doing so, also provides critical insight into the emergence not only of gerontology, but also of the significant discourse of senescence, which developed prior to the twentieth century. Katz (1996, p. 40) details that 'in France in the late eighteenth and early nineteenth centuries, medical research developed … a discourse of senescence: a new organisation of associated ideas and practices that captured the aged body through three commanding perceptions.' That is, the aged body as a system of signification, the aged body as separate, and the aged body as dying. Indeed, medicine began to reinterpret disease in such a way that demanded the aged body be relegated to a separate category in and of itself. This discourse of senescence has survived in modern science and can be found embodied in both geriatrics and gerontology.

Often discussed in tandem with its sister field of geriatrics, gerontology can be seen to have emerged from scientific curiosity of senescence (Katz 1996). Geriatrics, in fact, is seen as a

pre-cursor to gerontological discourse. Indeed, the attributed 'father'[15] of geriatrics – Ignatz Nascher – amplified the biomedical aspect of aging in order to garner interest from physicians. For a number of reasons, most obviously that of the need for funding further research, Nascher pioneered the transformation of the biological process of aging into a field of medical and scientific inquiry. Specifically, he constructed the process of aging as problematic, unnecessary and devoid of social components (Achenbaum 1995). Nascher's strategic move here can be viewed as an acknowledgement of the surveillance and construction of discourses and disciplines. That is, the important point of control of funding undoubtedly shaped the trajectory of research towards a more scientific and qualitative approach to aging, at the expense of the social components (Achenbaum 1995). The construction of aging in this way can be seen as the foundational step towards not only the field of gerontology, but, critically, towards the notion that aging itself is a disease-state.

The connection between geriatrics and gerontology must be acknowledged here, not only for the influence of geriatrics on gerontological epistemology, but also for the discursive specificities that separate them as disciplines. Foucault's archaeology is of critical importance here, for he states that 'the appearance of a discursive formation is often correlative with a vast renewal of objects, forms of enunciation, concepts, and strategies' (Foucault 2002, p. 189). It is this 'vast renewal' that I am concerned with at present, where geriatrics focuses on promoting elder health through disease and disability prevention. While gerontology is also concerned with the body of older adults, the focus shifts from health care and disease prevention to various aspects of aging from social and psychological to behavioural. Thus, gerontology was able to

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[15] I am aware of the problematics of naming a founding father, however I have included this here because Nascher is most commonly referred to in that way for his instrumental work in transforming notions of age through a biomedical lens.

emerge through discursive diffractions – a Foucauldian notion I will presently discuss – resulting from a vast renewal of conceptions of the aged body.

A cogent question that arises in the context of this Foucauldian analysis is: Why must the disciplines geriatrics and gerontology be distinct and separate? Foucault addresses a similar question in his *Archaeology of Truth* (2002, p. 31) and articulates the complexities of a discursive formation in this way:

> we must show why it could not be other than it was, in what respect it is exclusive of any other, how it assumes, in the midst of others and in relation to them, a place that no other could occupy. The question proper to such an analysis might be formulated in this way: what is this specific existence that emerges from what is said and nowhere else?

Indeed, what is it precisely that disallows questions of social, psychological and behavioural aspects of aging from being constituted in a geriatric frame? Both geriatrics and gerontology are framed through policy, yet geriatrics is firmly positioned as a science and gerontology, as has been demonstrated, faced substantial struggle in gaining such status. The 'relation between discursive formations and non-discursive domains' (Foucault 2002, p. 179) needs mentioning here, for the significance government funding has had on the conditions of the emergence of both fields. The presence or absence of funding – and, critically, where such funding may come from – creates a structured and regulated research focus that enables, disallows or demands specific statements and enunciations. Foucault acknowledges the various trajectories a discourse can take, depending on which statements and enunciations are made – and critically, are seen to be meaningful. In working to describe why a discipline emerges with its own distinct and unique set of discursive attributes, Foucault writes that 'there are a good many partial groups, regional compatibilities, and coherent architectures that might have emerged, yet did not do so. In order to account for [this], … one must describe the specific authorities that guided

one's choice' (Foucault 2002, p. 74). As stated briefly above, funding – or lack of – can influence the form of a discipline. Yet, in conjunction with funding is the significance of policy, both established and emerging, in guiding one's choices[16].

The notion of choice must here be framed in Foucauldian terms as 'points of diffraction' (Foucault 2002, p. 73), where possible discursive trajectories are abandoned for others and never realised and condition the transformation and emergence of discourse. Points of diffraction are characterised by three primary signifiers – that is, points of incompatibility, points of equivalence, and points of systematisation (Foucault 2002). In specific relation to geriatrics and gerontology, these points of diffraction mark the equivalent, yet incompatible, discursive formations applicable to both disciplines. To map the points of incompatibility, geriatrics developed a huge focus on health care and prevention of disease and disability in older adults, whereas gerontology emerged with a focus on the social, behavioural and psychological aspects of aging. Despite the equivalence between the two fields – that is, the study of aging and old age – where it can be argued both geriatrics and gerontology 'formed in the same way and on the basis of the same rules' (Foucault 2002, p. 73), gerontology came to be marked as an alternative.

The disparity between research focuses embodies Foucault's notion of discontinuity and dispersion, which he argues 'come to form discursive sub-groups' (Foucault 2002, p. 73). For gerontology, this is crucial, precisely as the emergence of the discursive sub-group of biogerontology can be interpreted as a point of diffraction and differentiation in the field. Thus, the choices made at each enunciative level determine the feasibility of a statements position in,

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[16] Policy will be examined further in this chapter, however for the moment it need only be recognised as a mitigating factor in the direction and shape of a discipline.

or exclusion from, a discourse. The coherence implied in the naming of a discourse and its resulting discipline is, Foucault argues, a false unity. It is critical to mark this in order to draw attention to the ways that ideas and objects change, mutate and transform. Transformations and ruptures can lead to the incompatibility of statements and enunciations in the very discourse they exist within. This is perhaps the crux of points of diffraction, where these ruptures, mutations and transformations condition the emergence of new discourses and enunciative systems.

Gerontology, as has been shown, can be examined as the result of points of diffraction and discontinuities. It is important to mark some specific conditions of emergence here, for they are demonstrative of discursive ruptures in and around the field of geriatrics. Russian-born scientist Elie Metchnikoff is often credited with coining the term gerontology, however, following Foucault, it is problematic to attribute the emergence of a field to just one person, specifically because gerontology itself has historically been difficult to position firmly as wholly in the field of science or within the field of arts (Katz 1996). As Foucault (2002, p. 163) states:

> one can see the emergence … of a number of disconnexions and articulations. One can no longer say that a discovery, the formulation of a general principle, or the definition of a project, inaugurates, in a massive way, a new phase in the history of discourse. One no longer has to seek that point of absolute origin or total revolution on the basis of which everything is organized, everything becomes possible and necessary; everything is effaced in order to begin again.

Foucault's assertion here is quite powerful for discussions of discursive transformations and ruptures, specifically the rupture between geriatrics and gerontology, which, in relation to Metchnikoff, can be framed through Eurocentrism. Metchnikoff's early zoological and embryological work in the late nineteenth century is known to have strong Germanic

influences, which this thesis finds useful in its relation to eugenic ideologies, specifically for the Eurocentric approach that his research adopted. That is, Metchnikoff began his work in a German context, where Darwinism was being tested. As such, his research can be seen to have been largely under German control (Minot cited in Butler & Olshansky 2004). In accordance with the emergence of Darwinism, Metchnikoff's early research was heavily focussed on the evolution of animals, noted in his work as 'higher' animals, such as anthropoid apes.

In a German context, surrounded by eugenic ideologies, Metchnikoff's early work can be seen as a hierarchizing biopolitical regime, particularly when his work is transposed to the human. Indeed, Achenbaum (1995) specifies Metchnikoff as the first person to pathologise age in the early 1900s; his work was originally specific to zoology where he developed his phagocytic theory of aging in animals. He found his theory transposable to that of the human, often making direct comparisons to aging in the human body. As early as 1904, for example, Metchnikoff is quoted as stating:

> old age … is an infectious chronic disease, which is manifested by degeneration or an enfeebling of the noble elements, and by the excessive activity of the macrophages. These modifications cause a disturbance of the equilibrium of the cells composing our body and set up a struggle within our organism, which ends in a precocious aging and in premature death, contrary to nature (Metchnikoff and Mitchell 1904, p. 548).

Even as he did not 'found' a specific field, Metchnikoff's work was instrumental in the formulation of both geriatric and gerontological discourse – particularly in his discussions on the benefits to humanity should human lifespans be prolonged, and detailed suggestions on ways to achieve this goal (Metchnikoff 1908). While his work pathologised old age, which resides in the discursive formation of geriatrics, the detailed suggestions made by Metchnikoff were largely gerontological in nature – that is, his suggestions nestled in approaches to social,

psychological and behavioural aspects of life. It must be further noted that Metchnikoff was in favour of such a course of action, though hesitant at times for economic reasons and the potential reduction in resources for young people.

Metchnikoff's view of elderly people in general, despite their perceived reduction in social usefulness, can be seen to embody early notions of productive aging, where he valued the life experience these people offered. I want to stress, however, that the creation of the *term* gerontology does not in itself account for the creation of the *field* of gerontology, as there were many others carrying out similar work simultaneously (Achenbaum 1995). Indeed, Metchnikoff's work is but a node in a network that allowed the emergence of gerontology as a field of inquiry and cannot constitute the origins of gerontology as such (Foucault 2002). As Chapter 4 will detail, gerontological research was being carried out for quite some time before Metchnikoff coined the term. Importantly, however, it was known as longevity research; again, here it is shown that a discursive rupture and diffraction occurred, even in the naming of the field. Longevity research differs from gerontology in a critical manner, however; that is, longevity research did not aim to remove aging or even to understand it as a biological and chemical process. Rather, longevity research aimed to enable people to simply live healthier, so that they may enjoy old age. There did exist, however, an ideal of rejuvenation, which is specific to gerontological research, as well. It can be seen here that the ideology of rejuvenation carried through to Metchnikoff's work, and can also be considered as yet another node in a fragmented network that enabled the emergence of gerontology.

In line with this notion of a fragmented network, it is important also to note that Metchnikoff's published works, particularly *The Nature of Man or Studies in Optimistic Philosophy* (1910), rely on various suppositions and assumptions that the human aging process is similar to, or

mimics, that of various other life-forms – animal and otherwise. In doing so, he necessarily draws upon various established disciplines, such as Darwinism, biology, and medicine. He makes this connection through the use of his theories on macrophages and phagocytes, specifically in relation to the loss of hair colour in human beings, where these macrophages devour the layers of pigment surrounding a person's hair (Metchnikoff 1908, p. 68). He also posits that this same process applied to brain tissue, resulting in senility; further, Metchnikoff uses this theory to explain atrophy and bodily degradation in general. Metchnikoff's research into human aging is built on words such as 'probably' and 'likely', which ultimately undermines any claims to scientific credibility. Despite this, his research into phagocytes was, at that time, heralded by many in the scientific community as 'a great discovery of immense practical importance to mankind' (Minot in Metchnikoff 1910: vii), particularly in senescence discourse.

Metchnikoff was renowned for his observations of elderly individuals insofar as their ability to continue physical labour and advocated for their inability to remain in the workforce; his observations were based on sample data he collected himself, though he applied his findings to the entire elderly population, which can be seen to be partially responsible for the pathologisation of 'old age' and the subsequent homogenised treatment regimes that emerged. Metchnikoff's data can be seen to universalise the aged individual and his research informed both scientific and social understandings of old age. Essentially, his work added to a growing scholarly corpus on age and influenced the rewriting and diversification of social scripts for – and towards – aged individuals.

This diversification, as Achenbaum (1995, p. 50) notes, saw 'research on aging at the start of the [twentieth] century … increasingly becoming multifaceted in scope, but it remained

fragmented'. Accordingly, the cross- and multi- disciplinary approach to aging, spanning the natural and social sciences, prevented gerontology from becoming a cohesive discipline. Much like the bodies they examine, the work of gerontologists has been seen to exist on the fringes and as boundary work (Gruman 1966; Lockett 1983; Binstock 2003), which saw the struggle not only for legitimacy, but also for funding. Gerontologists found funding from the Josiah Macy Institute in the 1930s (Binstock 2003), which can be seen to have substantially altered the direction of research; in order to secure funding, gerontologists were forced to minimise the notion of a fountain of youth and focus instead on the biomedical underpinnings of the aging process. This redirection of research focus operated to legitimise gerontology as a science, however, this mild success was short-lived; indeed, despite the creation of various aging research institutes, resources and funding depleted relatively quickly. The diversity of approaches and research aims among aging institutes reflects the discontinuities and points of diffraction identified by Foucault (2002, p. 165), who states:

> nothing would be more false than to see in the analysis of discursive formations an attempt at totalitarian periodization, whereby from a certain moment and for a certain time, everyone would think in the same way, in spite of surface differences, say the same thing, through a polymorphous vocabulary, and produce a sort of great discourse that one could travel over in any direction.

As such, the interests of the Josiah Macy Institute in the research need to be identified here, for the results of the research began to demonstrate the pathologisation of old age and the construction of the aged body as a disease-state, as this chapter will detail in relation to the deployment of biopolitical surveillance techniques. Indeed, mobilising the aged body as a disease-state demanded sovereign intervention in the regulation of such a body via regimes of age stratification. I will, however, presently continue to trace the emergence of gerontological institutions that continued the fight for scientific legitimacy of the discipline up until the 1970s, when it finally gained its own scientific status. I will focus on the significance of institutions

precisely because the work of Foucauldian archaeology is to find relations between discursive formations and non-discursive domains, such as institutions (Foucault 2002, p. 179-180).

Gerontological research programmes gained momentum during the early-mid 1940s, specifically with the advent of the Club for Research of Aging, which was eventually incorporated into the US National Institute of Health (NIH) (Binstock & Fishman 2010). The momentum gained minor strength when, in 1945, the Gerontological Society was formed by numerous members of the Club for Research on Aging, which then began to publish a peer-reviewed journal with a sole focus on the science of aging; that is, the *Journal of Gerontology* (Binstock & Fishman 2010). Binstock (2003) traces the short-lived nature of this momentum, however, which was significantly impacted by World War II. The direction of gerontological research continued in an altered form, though in a much smaller capacity, where research funds were diverted in order to fund the war effort. This diversion largely continued through to the late 1960s, during which time a number of multidisciplinary centres for aging and training were funded by the NIH; these centres were often subject to belittling by the scientific community (Binstock & Fishman 2010), however, which further prevented the legitimisation of gerontology.

The continued struggle for legitimacy eventually led, in the late 1960s, to the demand for a separate National Institute on Aging (NIA); the purpose was to ensure that any funds garnered for gerontological research would be adequate. The proponents of the NIA 'drafted a bill in 1968 that called for a new NIH Institute with a 5-year research plan ''to promote intensive coordinated research on the biological origins of aging'' (Lockett 1983, p. 85)' (Binstock & Fishman 2010, p. 474). In order to gain legitimacy and the respect of other scientific disciplines, specifically the Gerontological Society, the 1968 bill was redrafted to include the very language

proper to a range of established disciplines from the medical, social and behavioural sciences, ultimately leading to its institutionalisation through the establishment of the National Institute on Aging in 1974. The NIA has been marked as the kind of institutionalization that confers scientific stature and power (Cozzens & Gieryn 1990), though the field was still deemed unworthy of great amounts of funding because of a lack of researchers, leads or promising ideas (Binstock 2003). The proliferation of gerontological research since, both academic, scientific and political, has seen the slow legitimisation of gerontology as a discipline. Moreover, the institutionalisation of such aging models as productive aging, through social and government policy, which will be presently discussed, has operated to legitimise gerontology further.

Hence, through both an archaeological and genealogical approach to the discipline of gerontology, I have demonstrated the multi-faceted and fragmentary nature of the emergence of gerontology, and thus, of current conceptions of old age. This thesis will draw on this tracking to problematise the ways in which old age is not only discursively produced, but further, how it has become a medicalised and treatable condition. Further, the following section of this thesis mobilises the concept of neoliberalism to demonstrate in detail the ways in which old age is produced through asymmetrical relations of power and constructions of self-identity through regimes of governmentality.

The Neoliberal Subject and Aging Policy

Firstly, it is important to note the correlation between the neoliberal subject and biopolitical regimes of the state. In particular, both are preoccupied with governing and controlling populations, specifically the production of normative and docile subjects. It is crucial to acknowledge this relationship, because the production of elderly people as neoliberal subjects

and consequently the examination of gerontology, can both be seen as results of biopolitical regimes. Specifically, the notion of identity as a choice is crucial for this section, particularly when situated in the context of Davis' (2014) analysis. In the opening chapter of *The End of Normal*, Davis seeks to challenge the notion that 'diversity' has superseded the 'normal' as a discursive framework. That is, there has been a paradigmatic shift from understanding bodies as either normal or abnormal, except, as Davis argues, in the space of medicalised bodies. Indeed, Davis (2011) has earlier argued that 'diversity can exist only as long as we discount physical, cognitive, and affective impairments'. In *The End of Normal* (2014), Davis focuses specifically on disability, where this is largely seen as a fixed and *unchosen* identity as a result of medicalised regimes.

This perspective is particularly useful in relation to the framing of old age as a type of medicalised disability. Specifically, old age has undergone a paradigmatic shift from biological imperative to a medical issue in need of a 'cure', as discussed above. Thus, Davis' engagement with ideas of disability to problematise diversity as a framework replacing 'normal', aligns with my own framework. He draws on the notion of choice, which I have already problematised in this thesis, to demarcate assumptions of identity, where seemingly *all* identities are now able to be chosen or discarded – race, gender, sexuality and so on – except disability. In the context of neoliberal subjectivity, where I have also argued that the individual is responsible for their own economic productivity and their health, old age – or, more accurately, Fourth Age – becomes part of the continuum of chosen identities. 'Chosen' insofar as that a person unable to maintain Third Age is, under neoliberalism, opting to *allow* old age to emerge. There remains a 'choice', though, as to whether the elderly citizens in question will opt to utilise emerging anti-aging technologies to reclaim their youth and thereby fulfil their roles as entrepreneurial, neoliberal subjects. Of concern for this section of the chapter is not only the construction of

age as disease-state, but also the role of gerontology in producing biopolitical hygiene regimes. In order to examine the contemporary manifestation of gerontology and its hygiene regimes, this thesis will draw on the construction of Fourth Age and the aged subject through the notion of neoliberalism, as briefly defined in the thesis Introduction.

It is critical to mark here that, much like gerontology, neoliberalism did not simply emerge overnight, nor was it the product of one individual. Rather, neoliberalism is the product of discursive shifts and ruptures, which emerged after the horrors of World War II (Burchell 1996, p. 10). Neoliberalism can be examined in three primary ways, that is, 'neo-liberalism as a policy framework, … neo-liberalism as an ideology and … neo-liberalism through the lens of governmentality' (Larner 2006, p. 6). While all three discursive frames are valuable contributions to discussions of neoliberalism, this thesis identifies the third conceptualisation as the most relevant, particularly in terms of *homo œconomicus,* as described above. In accordance with Larner (2006), Ventura (2012, p. 2) argues, 'neoliberalism is … a governmentality — that is, the way subjects think about the collection of practices, techniques, and rationalities used to govern them and which they use to govern themselves'. This is evidenced in the ways in which governmentality and governance play a central role not only in the formulation of individual subjectivities, but also in the ways in which the government – or what Foucault (2010) labels 'police' and the surveillance society – regulate the status of elderly people as either human or less than, based on ability (or, more specifically, *perceived* ability) to contribute to – and in – the market. However, while 'emphasis upon participation and integration *beyond* the labour market encompasses a wide range of social relationships and roles fulfilled by older people' (Scharf et al. 2001, p. 307, emphasis added) and that these roles can formulate social capital, it is my contention that forms of social capital *made available* to certain elderly people are often constructed around assumptions of age categories. Further,

these assumptions enable the emergence of specific treatment protocols of elderly bodies in a biopolitical neoliberal framework.

As briefly mentioned above, neoliberalism emerged in the aftermath of World War II, though initially through two vastly different discursive frames – that of American neoliberalism and that of German Ordoliberalism[17]. The Ordoliberals acknowledged that after the atrocities of World War II, the state essentially did not exist. Their question, then, became how to create a space of economic liberty in a non-state space. The answer was to create a state that supports the market, rather than a market that supports the state. Indeed, as May (2006, p. 156) states, 'what is required is "a state under the surveillance of the market rather than a market under the surveillance of the state"'. The American Chicago School of neoliberalism, as discussed by Foucault (2010), developed out of a similar post-World War II context. However, the American formation of neoliberalism manifested a strong focus on the notion of human capital. Arguably, this notion of human capital – or human *as* capital – can still be seen in operation today. Indeed, Foucault examines this in terms of labour, where human capital is measured by the economic productivity of an individual. As Patton (2014, p. 161) states:

> the discussion of American neoliberalism also shows how rational choice approaches
> to "human capital" and criminality lead to policies grounded in economic rationality
> alone. At the point where they become sufficiently acceptable to be put forward as
> appropriate mechanisms of government, these policies fall within the sphere of
> public reason.

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[17] The American School of Neoliberalism and the German Ordoliberalist regime will only be briefly outlined here, for in order to map the contemporary neoliberal sphere, its emergence and discursive ruptures must be acknowledged.

In specific relation to medicalised elderly individuals and the social policies surrounding care, treatment and their social obligations, this same observation still holds, as will be examined later in relation to Robert Butler's notion of productive aging.

The most critical thinker for my own analysis of neoliberalism is Michel Foucault. His lecture series, *Birth of Biopolitics* (2010), details the foundations of neoliberalism and the ways in which it appears in practice. Further, he examines the interrelation between neoliberalism and power, where he notes that neoliberalism 'invented a novel articulation of power— one which incited toward the management of the self, through practices of self-transformation' (Cooper 2014, p. 32). For Foucault, then, neoliberalism is constitutive of subjectivities; that is, neoliberalism deploys 'strategies of rule, found in diverse realms including workplaces, educational institutions and health and welfare agencies' (Larner 2000, p. 13). The power of neoliberalism is articulated through these strategies of rule, whereby individuals are encouraged to take responsibility for maintaining their well-being as active subjects; thus, any failure to maintain normative health regimes falls upon the individual as a sort of failed entrepreneur. This is reminiscent of Foucauldian biopolitics, which establishes regimes of governance that ultimately influence and constitute identities and subjectivities.

Indeed, '[Foucault] argues that neoliberalism ought to be understood as offering the "general framework" of biopolitics' (Vatter 2014, p. 163). The interrelationship between biopolitics, governmentality and neoliberalism become apparent here; neoliberalism can be seen as a movement of regulation, normalisation, and in this way, as constitutive of normative identities and subjectivities. As Foucault (2010) argues, political power has come to be modelled on principles once only undertaken by a market economy. He identifies this as the problem of neoliberalism; not simply that these principles exist, but that the adoption of them, as an

exercise of political power, has seen them transform into a 'general art of government' (Foucault 2010, p. 131). Through this, it is possible to argue that the individual's relation to, and engagement in, the market economy, is constitutive of subjectivity; that is, through a biopolitical regime of regulation and normalisation, the individual is produced not only in the neoliberal context as responsible for their own productivity with a seemingly abundant range of market-driven choices.

Vatter states that the 'economic rule of law' promotes the construction of the entrepreneur as a mode of identity formation. Rather than business or market entrepreneurs, the individual inherits market-based principles by which to construct their biological lives (Foucault 2010, p. 163-164). This entrepreneurial status echoes that of the 'active subject' and is highly significant for notions of gerontological hygiene for the fact that the ability to remain entrepreneurial can be measured by what Vatter (2014, p. 178) terms as 'negative liberty', which is described as 'free choice and the pursuit of self-interest'. The implications for individual conduct here are obvious, where subjects then follow these guidelines at the expense of everyone else. As a result, 'neoliberalism refuses to see citizens as equal members of a people' (Vatter 2014, p. 178). It must be noted, however, that this self-interest, for neoliberalism, is tied directly to the market. That is, the individual's self-interest has been shaped and influenced to align with notions of the productive human as *homo œconomicus*. Through the decentralisation of government intervention in the market, the individual is afforded the autonomy to act in accordance with their market-based self-interest, which ensures the unequal distribution of power, as Vatter argues above.

The ramifications of this inequality being that preference is given to those who perform more successfully in their pursuit of self-interest, thus a person's value comes to be determined

through their accumulation of market-based capital. Here we see the blurring of the distinction between public and private spaces, where 'power is siphoned from labour to capital in the neoliberal context, the disciplining and re-regulation of social relations produces neoliberal subjects' (Sorrells 2009, p. 3). This blurring between public and private spaces is essential in understanding the production of the neoliberal subject. In this way then, neoliberalism must be conceptualised as a multi-faceted and complex system of power relations driven by relations of control. Indeed, Ventura (2012) offers a significant interpretation of neoliberalism as a regime of control, where individuals across all societies are not only governed through their freedom, but are also produced through those same freedoms that encourage the use of practices that bind autonomy with the market. The very freedom that neoliberalism affords the individual has been strategically deployed to regulate, control, and as Ventura points out, to govern. Governance is a critical aspect to this chapter, precisely because neoliberal governance is reminiscent of Foucauldian governmentality, as detailed in Chapter 1 of this thesis, and further, of the surveillance society. In current neoliberal societies, elderly people become subjectified by their ability – or perceived lack of – to contribute to market-based pursuits of self-interest. Moreover, if they are unable to contribute effectively, then their subsequent removal is not only the best option, but also the 'responsible' decision. Hence, the discursive and practical emergence of anti-aging strategies such as 'productive aging'.

'Productive Aging' and Neoliberalism's 'Climate of Consent'

Gerontologist Robert Butler coined the term 'productive aging' during a conference in 1982 (Holmerova, Ferreira & Wija 2012) and mobilised the concept with much more rigour in *Productive Aging: Enhancing Vitality in Later Life* (1985). Butler's intention was to account for the ways older people may be viewed as contributing to society, thereby aiming to position the elderly demographic as a useful resource – or, in a neoliberal frame, a commodity. Further,

the formulation of the elderly, as a biopolitical demographic, into useful resources perpetuates the notion of neoliberal inclusionism (Mitchell & Snyder 2015), introduced in the thesis Introduction. Indeed, he used his positions as both a psychiatrist and geriatrician to 'initiate changes in the training of physicians and other health professionals on how to care for the elderly' (Butler 1985, p. ix). Achenbaum (1995) asserts that these changes significantly impacted the public's perception of elderly individuals, and old age generally.

The unintended consequence of Butler's attempt to re-signify the aged body is that this notion of productive aging – as with positive aging – is dependent upon its dichotomous opposites of unproductive and negative aging. In other words, Butler has ultimately furthered an othering discourse that segregates and disenfranchises those that are unable to attain – and *maintain* – a 'productive' form of aging. Elderly individuals as neoliberal subjects thus 'find themselves in a position of having to actively manage their own pursuits of well-being as an entrepreneurial enterprise as well as performing the life-sustaining tactics of everyday living' (Mitchell & Snyder 2015, p. 174). Persisting as a useful form of capital becomes central in the formation of identity, then, and these practices of inclusionism – such as productive aging strategies – come to constitute one layer in the multi-faceted gerontological hygiene movement. Specifically, it signifies the aged body as needing to conform to normative subject parameters, described previously as Third Age. What is problematic about this, however, is the implication that inability to conform automatically signifies a decline towards the Fourth Age. As an example, Phillipson (2007) examines the relationship between aging, urbanisation and gentrification, where often urban architecture does not cater towards an older demographic but is instead adapted to normative young bodies with different spatial and mobility needs. Mitchell and Snyder (2015) refer to this conformity as 'cultural rehabilitation'; I find their terminology useful here, precisely for the ways in which it implicitly recognises a perceived lack. In the

context of Third and Fourth Ages, modes of cultural rehabilitation are thus designed to enable elderly neoliberal subjects to maintain their productivity. As such, the connection between aging and productivity is heightened through a neoliberal framework which suggests that

> productive aging reflects two new realities in the economy: (1) emergence of the
> aging as a powerful consumer force with discretionary income (for investment,
> travel, leisure, culture, and health care) and (2) emergence of the aging as a reserve
> pool of unused labor power or human capital in society (Moody 1993, p. xviii)

The economic concerns reflected in the above passage highlight the underpinning neoliberal discourses in the reframing of old age. Precisely, in parallel with models of age-as-disease, the desire to recode aged bodies as valuable commodities and an under-utilised resource grew.

Critical, too, are the ways in which neoliberal governance and regimes of surveillance have permeated the boundary of our most private zone – that of the home. Sorrells (2009, p. 1) continues her argument regarding the re-regulation of social relations by examining the 'home as a site of surveillance, discipline and forced consent' – nowhere is this notion more obvious and visibilised than in the spaces of the nursing home. Indeed, I argue that the space of the nursing home constitutes a contemporary form of the camp zone, which I name instead as compounds. This term has been chosen purposively, specifically because 'camp', in the Agambenian (1997) sense, denotes a reduction to bare life. To suggest the nursing home operates in the same fashion as historical forms of the camp that were explicitly designed to terminate life is unethical and untenable for three primary reasons. Firstly, it must be acknowledged that many elderly citizens 'choose' to reside in a nursing home – 'choose' has been placed under interrogation marks as this notion will be problematised later in this chapter; secondly, these individuals are provided specific medical care tailored towards their lifestyle/s, with the interest of maintaining optimal health for one's age; and thirdly, in the space of the

nursing home the individuals are allowed to come and go as they please – though the condition of their health may prevent this – unlike that of Tuke's Retreat, as examined in Chapter 1.

These three characteristics do not resemble those of the camp, though it must be noted that critical elements of governmentality and biopolitics remain. Thus, these spaces represent a move towards gerontological hygiene through regimes of surveillance, where elderly bodies are assessed as unable to contribute productively to society. Important to note here is that elderly citizens – like all neoliberal subjects – are 'held responsible and accountable for his or her own actions and wellbeing' (Harvey 2005, p. 65). Through the neoliberal frame, then, these bodies deploy strategies of self-governance and self-assessment that influence complicity in their own removal to the nursing home compound. Not only in the context of physical ability, but further, 'issues such as moral worth and self-worth with regard to ageing summon attention regarding the ways in which ageing people are generally seen in their societies and cultures' (Baars & Phillipson 2014, p. 18). This self-assessment constitutes a type of recoding, which this thesis will examine in specific relation to the Foucauldian notion of therapeutic regimes. Precisely in societies where 'there is a strong emphasis on the idea that ageing people are a burden to society, instead of being a part of society, it will be more difficult to maintain both moral worth and self-esteem' (Baars & Phillipson 2014, p. 18). Further, ideologies of productive aging mobilise the Derridean (2008) notion of 'proper to [hu]man', which outlines the characteristics that are seen to be exclusive to the human subject and that thereby exclude certain other subjects based on these ideals.

Critically, as Cardona (2007) asserts, productive aging and associated ideas such as active and healthy aging, are predicated upon notions of the youthful body. Specifically, Cardona argues, 'consumer lifestyles, plastic surgery, and retirement communities offers an almost

inexhaustible array of identity alternatives that exist, however, within the very specific and limited confinements of the youthful body' (2007 p. 222). The youthful body, then, is produced as idealised, and thus, as proper to [hu]man. I argue that once an individual is deemed incapable of either remaining 'youthful' or enacting productive aging, that individual is constructed as 'unfit'. Part of what constitutes the gerontological hygiene, then, is not simply the removal of the 'unfit' elderly body from mainstream society into medicalised quarantine zones – or compounds – but rather the discursive frame that enables this removal, and indeed, that identifies it as necessary.

This removal-as-necessary can be framed through what gerontologist Robert Butler terms 'productive aging', which, as detailed below, facilitates false consent from many elderly people regarding their societal obligations if they are unable to remain 'productive'. While Butler's framework seeks to 'embrace the contributions elders made in their households, volunteer activities, and late-life careers' (Achenbaum 2013, p. xi), the focus does remain solely on ideas of productivity and contribution. Productivity and hygiene, in a neoliberal context, operate across parallel lines, where in specific relation to forms of elderly bodies, hygiene practices are mobilised as 'rational' and 'logical'. Where eugenic hygiene regimes of enabled genocidal practices, neo-eugenic hygiene practices – those established and practiced in a neoliberal context – are dependent upon notions of freedom, human use value and economics. For this thesis, then, the removal of 'unproductive' elderly bodies – what I have been describing thus far as *gerontological hygiene* – must be examined through a neoliberal lens. I argue that through a neoliberal lens, gerontological hygiene must be seen as multi-faceted and as a complex series of asymmetrical power relations between state and individual. In this way, gerontological hygiene can be seen as a biopolitical program inscribed by institutional, governmental and discursive dispositifs. Furthermore, Hamann (2009) argues that

neoliberalism is intertwined with notions of individualism, specifically for the fact that subjects produced in neoliberal frames are responsible 'for themselves and themselves alone' (44). Consequently, any failure to adhere to these responsibilities are referred to as a 'mismanaged life' (Hamann 2009, p. 44).

This notion of the mismanaged life becomes central to gerontological hygiene, particularly in conjunction with age concepts such as Third Age and Fourth Age, in relation to the creation of care facilities, service strategies and the resettlement of many elderly people into medicalised quarantine zones, which have been described by social documentarian Anita Kapoor as having 'no privacy. There's nowhere to hang your clothes, there's nowhere to put your pictures, there's nowhere to be you' (Talking Point 2016). Hamann echoes the work of Estes (1979), who, importantly, identifies the stigma associated with aged care services, producing aged clients as not only in need, but also as unable to maintain responsibility for themselves. As such, the 'needs of older persons are reconceptualised as deficiencies by the professionals charged with treating them' (Estes 1979, p. 65). As will be shown, those individuals categorised by neoliberalism as non-subjects for their perceived inability to manage their life as a free and autonomous individual maintain a social responsibility to be complicit in their own removal. This complicity is referred to by David Harvey (2005, p. 40) as a 'climate of consent', deployed by the State through persuasion, surveillance and threat (Harvey 2005, p. 40). This climate of consent is embedded within social and legal policies surrounding both care for the aged and methods for 'acceptable' aging. Operating within neoliberal parameters, existing social policies surrounding old age deploy notions of productive aging in order to signify medicalised elderly neoliberal subjects as free and autonomous, though simultaneously as responsible for their own continued productivity, both economically and socially.

Thus, Butler's discourse of productive aging has ultimately resulted in the social demand for an elongation of Third Age and the amplification of negative perspectives towards those existing within the framework of the Fourth Age. In a neoliberal context, the aged are re-signified and commodified based on perceived notions of use and contribution. Indeed, Holmerová, Ferreira and Wija (2012, p. 9) refer to productive aging as 'not only to economic engagement, as in formal employment, but encompassing all forms of productivity in later life with consequent meaning, outcome and/or output'. This discourse has been echoed throughout gerontology in both ideology and aging policy, which, as I will demonstrate below, work to rearticulate not only the parameters of a 'useful life', but also the ways in which aged bodies are often categorised as less-than human. Specifically, through notions of unproductive aging, old age as metonymic for frailty, decrepitude and illness. This is further achieved through the 'attempt to restructure dependency through the uncritical promotion of positive activity … [thus problematising] older bodies and lives as dependency-prone and "at risk"' (Katz 2005, p. 136). As has been shown, notions of the human rely on discourses of use-value, both physically and psychologically, where Arendt and Heidegger[18] identify, respectively, one's ability to labour and capacity for language as characteristics that distinguish human from less-than human. In terms of aging and old age, the perceived reduced capacity for labour and language in specific forms of elderly bodies often removes those individuals from the category of the human. The presence of these notions of productive aging, healthy aging and positive aging within local and global contexts has been steadily increasing through a biomedical model, which 'illustrates the influence of biomedicine in social policy' (Cardona 2008, p. 478). Framed here as neo-eugenic systems, both positive and productive aging mobilise the gerontological hygiene movement.

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[18] I only flag Arendt and Heidegger here as I will discuss their relevance to my thesis topic in more detail in Chapter 3.

Critical to mention here is the interrelation of policy with science, as gerontological research provided a platform for not only the medical construction of the aged body, but also its political construction via social policy. Foucault (2002) argues that there exists a relation between discursive formations and non-discursive domains – as outlined briefly earlier – which becomes quite evident here, specifically in terms of the construction of gerontology as a discipline and its co-implication with the social policy sector. The discursive formation of gerontology, then, can be seen as emergent with ageing and senescence policy. Indeed, the disciplining of old age and its recognition as part of power/knowledge relations can be viewed as emergent through recent formulations such as 'pensions and retirement, discourses of reform and the life-course regime' (Katz 1996, p. 76). Katz's argument here is that twentieth-century gerontologists – and indeed, biogerontologists – have not by themselves created elderly people and their bodies as problematic, rather they have inherited those perspectives that situate it as such (Katz 1996).

Early aging research has not necessarily been questioned and challenged, rather enforced, affirmed and perpetuated; the problematic of such an occurrence is that contemporary policy, practice and procedures surrounding the deployment, treatment and perception of elderly populations rely upon out-dated bell curve-type ideals of what constitutes a healthy and socio-economically functional elderly body. As Katz (2010, p. 363) observes, 'individual status becomes rooted in somatic experience', specifically as a result of normative discourses of the body. That is, through standardising both functional and dysfunctional states of physical well-being, ethical practices increasingly become formed according to the judged worthiness of one's biosocial identity (Katz 2010). This is consistent with the life-course perspective, which

relies on understandings of human aging as influenced by circumstance and events (Dannefer 2011).

Pathologising Age: Biogerontology and Anti-Aging Somatechnologies

The life-course approach is strictly gerontological in nature, though it provides a strong framework for the emergence of *bio*gerontology, which aims not only to study the biological processes and causation of aging, but also aims to do so in order to stage interventions aimed at the reversal of the aging process. Biogerontology as a field of inquiry can be seen as a contemporary discursive rupture (Foucault 2002); in Foucauldian terms a discontinuity based on what gerontology excluded. Specifically, as I outlined above, biogerontologists seek to promote distance from traditional gerontological research and anti-aging medicine – considered placebo medicine by many in both the biogerontological and wider scientific communities (Katz 1996) – in order to maintain a credible position as a scientific discipline. Anti-aging medicine, which will be examined further in this chapter, relies upon gerontology to define itself; that is, many supposed anti-aging medicines, such as Trinfinity8 and adipose therapies as detailed in Chapter 1 of this thesis and de Grey's notion of caloric restriction, purport to use hard science in order to retrieve youth.

Olshansky, Hayflick and Carnes (2002) maintained that at the time of publication, there were no legitimate anti-aging medicines or treatments that adhered to the third anti-aging paradigm identified by Binstock and Fishman (2010, p. 479); that is, 'arrested aging', which is most adequately embodied by de Grey's SENS strategy, aiming to literally reverse the process of aging. Others in scientific disciplines have also contributed to the notion that aging is a disease-state through their own research. Theorists such as Heward (2010, p. 22) argue for a more practical view of the aging process. Simply put, regardless of the exact reasons or nature of

aging, evidence suggests senescence as a 'progressive degenerative process resulting from some combination of biochemical, hormonal and neural imbalances'. The empirical nature of this approach, Heward argues, enables it to more accurately position the degenerative processes of aging as 'preventable and/or reversible' (Heward 2010, p. 22).

Despite the assertion that there currently exists no legitimate anti-aging therapies or medicines, substantial anti-aging research has taken place in the hard sciences, most notably in stem cell therapies, DNA repair and telomere-based therapies (Fahy et al. 2010). These recent advances within the hard sciences not only legitimise the discipline of gerontology – and its successor, biogerontology – but they also perpetuate the notion that aging itself is a problem and a disease-state. The perpetuation of this discourse has formed a culture of anti-aging, which Julie Twigg (2006) argues has made the body a site of denial; indeed, she states that 'it is the bodily appearance of the old person that places them in the category of old' (Twigg 2006, p. 45). Twigg's assertion alludes to the permeation of anti-aging culture into various aspects of contemporary society, the perpetually young celebrity being but one of them, as discussed by Friedman (1993). Further, as Cardona (2007, p. 221) argues, underpinning motivations for the consumption of 'anti-aging technologies and therapies [are] social, cultural, and economic narratives advanced by institutional agencies and disciplines governing the lives of aging populations'. That is, these technologies are bound within discourses and practices surrounding aging, inclusive of policy frameworks, strategies of productive and healthy aging, and institutions such as nursing homes designed to contain specific forms of the elderly (Dannefer in Binstock and George 2011, p. 12). These discourses and practices, I argue, are underpinned by the core goal of abolishing old age.

As such, significant for this thesis are those somatechnologies that enable people to reclaim their youth through emerging anti-aging regenerative technologies such as mitochondrial manipulation, stem cell therapies, telomere-based therapies[19], DNA repair and 3D organ printing. While biogerontologists such as Aubrey de Grey works to manufacture a 'cure' for death and permanently maintain an ideal physical body, other researchers in the biogerontology field are seeking what they might frame as 'solutions' to problem of aging now. For instance, Fahy (2010) documents various conditions that develop in both human and animals with mutations and dysfunction of mitochondrial genomes and uses this empirical evidence to suggest techniques for Mitochondrial Gene Therapy as a treatment for aging. As yet, Fahy's techniques are merely hypothetical, however the discourse in his work remains of vital focus for this thesis, for the fact that the research is currently being conducted under a medicalised framework of aging; that is, aging has come to be understood as a pathological problem, ultimately framing old age as the root cause of age-related diseases or dysfunction. Indeed, Steer and Kren (2010) frame aging as the cause of DNA damage and explore the various ways in which DNA repair can be engineered – through such strategies as RNA interference and DNA strand exchange – in order to repair aging and its related dysfunctions.

Professor David Sinclair of the University of New South Wales, Australia, has, however, produced tangible anti-aging results in mice through gene therapy (UNSW 2014), where Sinclair and his research team have been able to successfully increase and reverse the age of a mouse by manipulating specific genes into turning on and off (UNSW 2014, p. 2). Furthermore, Sinclair has previously identified an anti-aging enzyme in the human body with similar potential; potential, Sinclair hopes, that will enable the prevention of age-related disease and

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[19] Telomeres are DNA-protein structures found at both ends of a chromosome that protect against harmful biological processes such as 'nucleolytic degradation, unnecessary recombination, repair, and interchromosomal fusion' (Shammas 2011, p. 2). As such, it is theorised that telomeres are genomic information gatekeepers.

ultimately lead to lifespan extension (UNSW 2013). Sinclair has since gone on record to suggest that aging 'is the greatest problem of our time' (Zubrzycki 2015), furthering the discourse that age is indeed a disease-state that can – and must – be cured. Similarly, Atala (2010) examines the use of stem cells and amniotic fluid to replicate or clone organs to prolong an individual's life.

Stem cell therapy holds various applications and does not necessarily implicate aging as a disease; this is, if someone develops cancer in an organ, stem cell therapy can be used to grow a cancer-free replacement organ. There has been no inherent link made between cancer and age, hence the applications of stem cell therapy are not limited to anti-aging. However, the context in which Atala examines these therapies is situated specifically in anti-aging discourse and is pre-occupied with the notion of life extension as an optional (but necessary) treatment for aging. Melinda Cooper (2006) also explores this in her paper 'Resuscitations: Stem Cells and the Crisis of Aging', identifying the significant breakthrough stem cells presents for what has medically become the disease of old age. Cooper examines the use of stem cells from a different perspective, however, where her investigation lies with the repercussions of anti-aging stem cell therapies on notions of generation, waste and resource efficiency, and mortality. Cooper's analysis takes into consideration several aspects of life extension that scientific discourse fails to account, but which formulate a necessary part of anti-aging discourse. Indeed, notions of waste management, finite resources, and socio-cultural notions of self are absent from institutions such as Calico[20], a research division of Google, anti-aging focus emphasises various types of therapies that can potentially be used to reverse the damage caused by aging. In an article outlining the emergence of Calico, the biotechnologists and other scientists

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[20] Calico will be examined in much more depth in Chapter 4, specifically surrounding the ethics of developing anti-aging somatechnologies.

attached to the company have emphasised 'the futility of fixing an individual problem, such as heart disease, when the rest of the body is rotting' (Farr 2013: n.p.) and posit the significance of stem cell therapies in treating the condition of old age, as well as the emergence of telomere-based therapies.

Telomere-based therapies are critical to acknowledge for this thesis as they involve the notion of immortalisation.[21] That is, through the immortalisation of human cells, scientists believe it can eventually become possible for people to live forever, thereby positioning aging as disease, and those deemed 'old' as in need of a 'cure'. Similar to notions of DNA repair, telomere-based therapies involve manipulation at the chromosomal level, its primary aim to manipulate the chromosomes to eradicate so-called mutations that scientists claim cause aging and dysfunction (Shay & Wright 2007; West 2010). Ultimately, scientists working on these telomere-based therapeutics seek to reprogram and reverse cellular aging. Consequently, gerontological hygiene must be acknowledged as facilitated through the pathologisation and subsequent medicalisation of the aging process, which inevitably positions those deemed 'old' as diseased.

Leon Kass (2009) aptly summarises the various developing somatechnologies – and those already deployed – when he comments on the pursuit of the ageless body. He states three specific ways in which scientists commonly aim to combat aging:

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[21] This practice has occurred regularly since the 1950s when Henrietta Lacks' cell-line was immortalised without her consent. Lacks' cells were essentially commodified for medical research, without her knowledge or consent. The nexus of racial and gendered implications here are numerous, precisely because Lacks was an African American woman. The cells, known as HeLa (Lucey, Nelson-Rees & Hutchins 2009) were crucial in developing a vaccine for polio, have been used to understand the impact of zero gravity on cells and were also deconstructed for gene mapping and what later became known as in vitro fertilisation (Zielinski 2010). While not the focus of this thesis, the racial and gendered dimensions of the commodification of Lacks' cells must not be overlooked. Precisely for the long history of unethical medical research – tracked in Chapter 4 of this thesis – that continues to inform and influence contemporary practice. Indeed, I propose that the genetic industry owes largely to the unethical commodification of Lacks' body, thus perpetuating the biopolitical and governmental regimes of ownership and manipulation traced in Chapter 1.

(1) we can replace worn-out parts, by means of organ transplantation or, in the future, by regenerative medicine where decayed tissues are replaced with new ones produced from stem cells; (2) we can improve upon normal and healthy parts, for example, via precise genetic modification of muscles, through injections of growth factor genes that keep the transformed muscles whole, vigorous, and free of age-related decline; and (3) most radically, we can try to retard or stop the entire process of biological senescence (Kass 2009, p. 11).

Kass' cogent summary is useful here for the way in which he points to the many traversed pathways leading to the erasure of age.

As mentioned above, the pathologising of age is the key biopolitical regime of interest for this chapter. Precisely, because of the ways that this pathologisation has led to the institutionalisation of anti-aging discourses and the development of advanced medical 'therapies' aimed at (re)producing normative cells through identification of supposed mutations. This chapter now turns to the ways in which the pathologisation of age has led to the negation of certain forms of elderly individuals as 'human' per se – that is, as non-subjects – and the contemporary and emerging somatechnic practices that mobilise old age as a disease. As I have argued in the course of this chapter, the field of gerontology is inextricably connected to regimes of power and knowledge. The discipline, moreover, has been instrumental in the construction of various politically loaded identities, including 'the elderly, the senior citizen, the pensioner, the dependent, the lifelong learner, the caregiver, [and] the gray voter' (Katz 1996, p. 1). These identities have often been encapsulated in images that largely define a category of 'the elderly' within the public consciousness;[22] indeed, as Friedman (1993, p. 16) argues, the fields of gerontology and geriatrics enabled the 'aged-as-sick approach', which

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[22] This notion will be explored throughout this chapter, specifically in terms of the desire to be quarantined in Nursing Homes.

disallows multiple perspectives of elderly existence and affirms the homogenised view that *all* elderly are *already-sick*.

This aged-as-sick approach – or what has been phrased as the 'sick role' (Haber & Smith 1971) can be seen to have emerged simultaneously with the emergence of scientific discourses of senescence as extendable. Early scientific research surrounding treatments for aging, and the avoidance of it, have greatly informed recent scientific practice – most notably here, experiments into dietary restriction on mice, performed by Clive McCay (Achenbaum 1995), which Aubrey de Grey has repurposed for his work on caloric restriction as a strategy for the postponement of aging. Though approached from a multitude of theoretical perspectives, modern Western senescence discourse has always aimed not only at understanding aging, but also aiming to overcome it. Through this quest for knowledge – and ultimately power, that is, over life and death – the aged body became constituted as a separate category, one defined by degeneration, frailty, and illness. As Katz (1996, p. 44) notes, regardless of the actual appearance of the aged body, early physicians examined them 'according to the pathological signs of senescence that separated it from the bodies of other ages'.

These early constructions of the aged body have produced significant impacts on contemporary constructions of old age, not only in the realm of medicine, but also in the construction of aging policies designed precisely to erase Fourth Age; that is, the erasure of those relegated to the fringes of life and the negation of the capacity to reach old age. In accordance with various aging policies – generally known as 'healthy' aging and 'productive' aging policies – and the further fragmentation of age categories, biogerontologists more readily acknowledge the diversity of the aged experience. This focus constitutes the specific discursive rupture that enabled the transformation from gerontology to biogerontology and the resulting separation of

both theoretical and practical frames. This discursive shift raises questions of 'how to acknowledge the experiences and meanings of physical difference, suffering, and decline that come with age' (Katz 2010, p. 357). I argue that in a contemporary neoliberal context, these questions remain unanswered, specifically because of the way elderly individuals are constructed and mobilised as homogenous through both government and social aging policies. In the next section of this chapter, I will draw upon Foucault's notion of 'Therapeutic Regimes' in order to examine the how aspects of the surveillance society and aging policy are embodied in the context of nursing homes. Crucial to the following examination are the ways in which the re-signification of aging through social and government policy facilitate and perpetuate the gerontological hygiene movement. Firstly, however, the space of the nursing home must come under scrutiny, for its co-existence and interrelationship with policy.

Compounds for Elderly Citizens: Spaces for Abnormal and Docile Bodies

I have tracked so far in this Chapter a discourse that frame 'removal-as-necessary' for a range of elderly bodies deemed 'mismanaged' and 'unfit', specifically through the interrogation of 'productive' and 'healthy' aging (Butler, 1985) in a neoliberal agenda that emphasises individual responsibility for productivity (economic and otherwise). This removal from mainstream society essentially disenfranchises the individuals affected, positioning them as what Edwin Black (2004) might term 'weak' in a neo-eugenic sense and in a position of *inevitable* decline and need[23], while simultaneously placing these individuals further in the grip of governmental regimes of surveillance. This position of 'need' is demonstrative of the

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[23] See, for example, the tagline of Regis Nursing Home (2018), which states 'the care you need', which I argue constitutes part of a biopolitical strategy enforcing self-surveillance and self-assessment. Likewise, Aveo's (2018) website reinforces the seemingly ambiguous nature of the later life course through statements such as 'redefining retirement through providing certainty'. Both corporations, as well as others such as AngliCare (2018), enforce the notion of inevitable decline through discursive framings underpinned by the idea that your needs not only *can* change, but indeed *will* change. Hence, the manipulation of a lifestyle defined by discourses of decline.

biopolitical and neoliberal discourses I have been mapping in this thesis that enable the medicalization of certain aged bodies into the 'sick role' (Haber and Smith, 1971). Furthermore, questions of isolation and quarantine are raised in relation to the nursing home, as raised earlier in this thesis with the exposure of nursing homes as designed as a form of containment (Dannefer in Binstock and George 2011, p. 12). While this quarantine is neither permanent nor mandatory, the institutionalised values associated with the removal of medicalised elderly people into a village space draw on eugenic principles of inferiority. Common understandings position quarantine as an act of total and complete segregation and isolation, however Curtis (2002, p. 514) mobilises an understanding this thesis finds much more relevant when he states that 'quarantine operates by identifying and separating out problematic dimensions of social life and social relations and then subjecting them to particular treatment protocols'. In this sense, then, the nursing home can be seen as a construct of quarantine for the betterment of society, as discussed earlier in this chapter. Indeed, the eradication of the perceived weak aspects of society has returned with a vengeance. During the height of eugenics, the strategies deployed were public and highly visible, whereas the strategies of eradication taking place in contemporary society are much subtler, and perhaps much more insidious.

Nursing homes can be understood as sites in which the residents are provided constant medical treatment. Central to this idea of the nursing home is that old age is largely coextensive with ill health and that it requires medicalised monitoring and care. The nursing home provides this care for those nearing the end of their life path. The notion of gerontology here is quite significant, as the criteria as to whom is eligible to reside within the space of the nursing home are quite restrictive and inextricably connected to those who are deemed 'old' and assigned to the Fourth Age. Indeed, 'old age has simultaneously become a major source of "risk" but also

a potential source of "liberation"' (Cardona 2008, p. 480), if one were to assume that elderly people do indeed have choice and freedom. Phillipson contends that:

> the notion of older people making conscious choices about where (and by implication with whom) to live conveys the way in which belonging may be secured through choosing places and spaces which reflect biographical identities and preferences (Phillipson 2007, p. 330).

However, one must question and consider the paradigm surrounding this question of choice and freedom. For instance, Phillipson (2007, p. 330) critiques his previous sentiment about choice when he states that 'it is equally the case, however, that while it is possible to talk of older people 'electing' where to live, a substantial group of older people have much less freedom to influence the physical and social environment of which they are a part'. In more practical terms, the promotion of retirement institutions 'played an important role in bracketing out many fundamental anxieties associated with events, such as the loss of work in early older age, to the loss of bodily function in later life' (Cardona 2008, p. 480).

However, this is, in part, a fallacy, as these institutions deploy the *impression* of choice and freedom, which is understood here as a socio-cultural configuration of constrained and regimented options (Garland 1997). The implication here is that people have been given a set of choices regarding what sort of care they wish to receive (if any) and are essentially free to opt for one choice over another. This does nothing more than to further the position of freedom as a form of governance and does not erase the implication that nursing homes operate within biopolitical frameworks of quarantine and isolation. Furthermore, in a neoliberal context, the construction of choice and freedom is inextricably connected to notions of social and economic productivity. As stated earlier in this chapter, elderly neoliberal subjects perform continual self-assessment, which run parallel with standardised frameworks of physical competency, such as

both the *Activities of Daily Life* and the *Quality of Life Scale* (Katz 2005, p. 129). Furthermore, I argue, there are considerable implications for both freedom and choice.

I return now to the recent *Four Corners* (2017) report, which exposed the spurious façade of Aveo nursing homes and retirement communities, precisely in relation to notions of freedom. The episode details the financial sinkhole that residents fall into after purchasing a unit within an Aveo retirement community. Not only is the unit priced at above-market value, but the company retains the right to prevent future sales and places the responsibility of any future loss in market value on the current resident. Furthermore, the report revealed that there are exit fees of up to AUD$60,000. This means that if a resident wishes to sell the unit, they must sell it – for a loss – back to Aveo, as well as a forfeit the exit fee and other fees associated with cleaning and repair, making it virtually impossible to move out and remain financially secure. I argue here that while residents are 'free' to opt into the contract, they are essentially forced to remain, often against their will, as in the cases of Gwyneth Jones and married couple Ron and Monica Johnson. Ron Johnson, the report revealed, now lives with chronic depression as a result, stating he feels 'trapped like a rat' (Four Corners 2017). In addition, resident Geoff Richards highlighted some of the several clauses in his contract with Aveo that enables the company to evict him at their will. One of these clauses inferred that going overseas was a valid reason to evict and reclaim the property. In-built into Aveo contracts, then, are biopolitical regimes of surveillance and control, both financial and physical.

Furthermore, an emerging sector of the Aveo franchise, titled 'Freedom Aged Care' will see the restructuring of 25 current Retirement communities into Aged Care facilities, without the consent of many of the current residents. This business shift is a manifestation of the biopolitical governance forced onto bodies of the aged, specifically based on assumptions of

what people in certain ages are capable of, and how they should be living. Resident Jan Reilly states, 'I didn't buy there for Aveo to turn it into aged care and boss me round. And I am terribly suspicious of what's happening' (Four Corners 2017). In this way, despite technically owning the units they purchase, the Aveo residents are largely unable to control their living conditions. The removal of this sort of choice forces medicalisation on them, placing their bodies – and lives – under biopolitical governance. Critically, certain residents are speaking back, as has been evidenced already. Another Aveo resident, Shirley Kudeviita asserts her political agency by stating 'I don't believe that they should tell me that I have to have aged care. I will know when I'm ready for aged care' (Four Corners 2017). This is an active rebellion against the proposed forced medicalisation and a response to Aveo's biopolitical governance.

These concepts must indeed be interpreted as forms of governance, for it is through freedom that choices are produced and enacted. Indeed, choices are instruments of domination (Foucault 1980), deploying illusions of individual power – or indeed lack of – while subjugating the individual by exercising power over them through the very choices of which they are bestowed. It is important to understand that power is not static, it does not belong to one individual or State, but rather exists and functions on manifold levels. The notion of choice can be construed as problematic for this very reason, as it becomes clear that 'choice' is in fact both governed and a manifest form of biopolitical power. Indeed, choice and freedom can be seen as absent in social aging policies – as Katz (1996) argues, the voices of elderly individuals and communities are often missing in these documents – and it is through this exclusion that choice and freedom are in fact governed. Further, Scharf, Phillipson and Smith (2005) point to five key areas of social exclusion that impact older people. They state that 'social exclusion in old age is conceptualised as a multi-dimensional phenomenon comprising of: exclusion from material resources; exclusion from social relations; exclusion from civic activities; exclusion

from basic services; and neighbourhood exclusion' (Scharf, Phillipson & Smith 2005, p. 76). While their inquiry was specific to impoverished communities in England, their framework is quite useful for exposing the manifold ways in which biopolitical governance operates elsewhere in similar modes. I argue that these modes of exclusion relate to notions of power, discussed below through a Foucauldian lens.

Power, in general terms – as there are many forms, such as economic, political, juridical, social and so on – can be conceived in terms of its role in maintaining relations of both production and subjectivities (Foucault 1980). This furthers the position of choice as a biopolitical construct in the sense that the construction of choices and freedoms enable the political power of sovereignty to be established, precisely in that 'Foucault developed the idea of biopolitics to capture how technologies of power help in managing, and also controlling, the life of the population' (Nadesan 2010, p. 2). The negotiation between sovereignty and choice, then, also leads to the notion of choice as a form of power. If this is to be the case, choice can then be seen as productive of subjects and individuals, for example, 'you can go to prison or join the army, you can go to prison or go to the colonies, you can go to prison or you can join the police' (Foucault 1980, p. 23). The State provides specific choices for the population, however they are structured in such a way that they become less a choice, less a *freedom* of choice, and more a necessity in the sense that the only favourable choice – in those outlined here – is to join a governmentalized regime, for instance the army or the police.

In this sense, choice operates as a method of both subjectification and subjugation. Hence, a primary effect of power is that individuals are constituted through certain 'gestures, discourses and desires' (Foucault 1980, p. 98). More precisely, as individuals to be controlled through the very choices, rights and freedoms they believe to be their own. Furthermore, Foucault (1980,

p. 93) argues that power exists in manifold relations inextricably connected with the 'production, accumulation, circulation and functioning of a discourse', which ultimately operate to characterise the social body. The discourses of freedom and choice, for instance, function to govern not only the movements of specific bodies, but also larger social formations, such as the movement of certain forms of the elderly body into medicalised quarantine sites such as nursing homes, which will be discussed presently. Specifically, the desire for the isolation and quarantine of the insane, elderly people and the poor, can be viewed as a direct result of these discourses of choice and freedom. In fact, these concepts are regimes of discipline that shape, influence and code certain bodies for specific aims: in the case of those elderly people exhibiting 'symptoms' of Fourth Age, the aim being social exclusion and removal.

Furthermore, these discourses have informed both historical and contemporary notions of the camp, and their loci of control. That is, these sites condemned the individual and removed such things as choice and freedom. This is evident in historical forms of the asylum, particularly almshouses, which were 'full of broken-down and decrepit men and women and the old chronic cases from many of the other institutions are sent there to die' (Rothman 1971, p. 292). Hence, despite the fact that many elderly individuals may 'choose' to reside in a nursing home, their 'choice' has largely been shaped by a variety of medical, economic, scientific and cultural discourses that position old age as a disease-state. For instance, many elderly individuals are perceived and presented as holding a diminished capacity for labour due to failing health, and are thus positioned as economically inefficient (Rothman 1971; Foucault 1980, 2001, 2012; Cardona 2007; Mykytyn 2010; Lombardo 2011). The ability to labour, as has been shown, has historically been inexorably connected to one's societal value, particularly in a contemporary neoliberal context. Economic discourse that positions elderly citizens in this way may have

been mobilised prior to that of other discourses, such as medical and cultural, and thus have had a tremendous impact on them.

Medical institutions can be contextualised as a result of both economic and political desires, especially during the sixteenth and seventeenth centuries when subjects began to become individualised through their illnesses, as discussed in Chapter 1. The choices made by many elderly individuals are reflective of these institutionalised discourses that affirm and perpetuate notions of the labour-value dichotomy, and paradigms insinuating the most plausible solution for these diminished individuals is that of expulsion to nursing homes, retirement communities, and to hospice facilities[24]. In a way, these discourses are further justified through the marketing of anti-aging technologies as somehow necessary, not only for the preservation of youth, but also, critically, for the restoration of societal value. Foucault (1980, p. 94) argued that discourses are indeed perpetuators of specific types of power and that 'in the end, we are judged, condemned, classified, determined in our undertakings, [and] destined to a certain mode of living and dying'. The implications of power must be attributed to society at large, but more specifically, in the context of this thesis, to the notions of both confinement and freedom, and the mobilisation of the camp-like zone, or compound.

It was a primary argument of Agamben that the Nazi death camps were in fact a 'fundamental paradigm of biopolitical power' (Bernstein 2006, p. 39), a lens of which one must read the state. If Agamben's paradigm is shared by contemporary versions of the camp, and it becomes possible to read the state through the lens of the camp, then the extent to which nursing homes can be considered camp zones becomes increasingly clear. Where the state sees a homogenised

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[24] This is further examined by Scharf, Phillipson, Kingston and Smith (2001), who raise the important issue of social exclusion of older people.

collective of 'the elderly' as an economic strain, and as inferior humans, the need to develop and deploy zones of confinement becomes rational. Specifically, via eugenic, and perhaps even *pre*-eugenic, ideologies, as during the seventeenth and eighteenth centuries 'confinement was the common, and the preferred, response to the deviant and dependent' (Rothman 1971, p. xxix). Indeed, Agamben (1997, p. 106) asserts that through an 'examination of the juridical and political structure of the camp', one will inevitably notice similar discourses and paradigms in operation today. If one assumes that the camp exists today as a political space in which we reside, the dangerous possibilities that once unfolded may continue to haunt history, and critically for this thesis, our future. This is not to suggest the resurgence of death camps, leading to the genocide of countless individuals, but to suggest that within the sphere of neo-eugenics, the camp may exhibit dangerous characteristics detrimental to a large portion of specifically targeted individuals, such as the medicalised elderly. Hence, I examine the nursing home as a camp-like structure, framed here as compounds.

The Surveillance of Aging

Thus far, this chapter has traced the emergence of gerontology as a discipline and the construction of the medicalised elderly neoliberal subject through discourses of freedom and choice. The space of the nursing home has been considered to demonstrate the implications of freedom and choice, in a neoliberal context, as forms of governance and discipline. As has been traced throughout this chapter, historically and culturally, age is experienced and valued differently. This section of the chapter aims to examine the ways in which age as a set of codified epistemologies has been altered, influenced and resignified through biopolitical regimes of surveillance. Specifically, through the case study of Regis Nursing homes – a national conglomerate of aged care facilities – I argue that these facilities mobilise surveillance

techniques that recode specific forms of the elderly subject as less than fully human and ultimately perpetuate what I have termed gerontological hygiene.

Powell (2001, p. 119) enforces an archaeological perspective of gerontology when he states the various forces that have shaped it; that is, 'government intervention and political and economic environment'. Indeed, age and aging have undergone a number of discursive shifts already as examined in this thesis already. The significance of these shifts lies in the increasing medicalisation of age (Murphy 1986) and the subsequent construction of elderly individuals as existing in a disease-state. Of course, age is not alone here, and as Lupton (2012, p. vii) argues for the increased demand to define – and redefine – the 'limits of normality and the proper functioning … of the human body'. In terms of age, proper functioning has been coded through conformity to the characteristics of Third Age; that is, the limits of proper functioning for an aged individual. The limits of proper functioning, I argue, are established through social and government policy, and enforced through the resulting parameters of institutional establishments such as nursing homes. Further, these parameters of what it means to 'function' are co-implicated with notions of disability and normativity more broadly. Parallel to old age run medicalised understandings of disability, where 'in a culture, supported by modern Western medicine, and which idealises the idea that the body can be objectified and controlled, those who cannot control their bodies are seen as failures' (Clapton & Fitzgerald 1997, p. 2). It is important to understand that while old age and disability are demarcated throughout this thesis as disparate fields of inquiry, there are stunning similarities between the ways in which much of the elderly population and the disabled are constructed, and subsequently treated. Operative within a neoliberal frame, the bodies of both the medicalised elderly and the disabled come under scrutiny as nonproductive and, essentially, abnormal.

Under my rubric of old age – that is, the growing understanding of age as the root cause of a range of disabilities and diseases – normativity is a significant theme to consider. Precisely in relation to neo-eugenics, as mentioned so far throughout this thesis, as a critical emergence in attempts to abolish age. One such attempt can be seen in the formulation of age categories, as outlined above, and the treatment protocols associated with them. As Friedman (1993, p. 16) argues in relation to the Third and Fourth Age, when age is defined a problem, or a disease, its 'carriers' must be quarantined for the benefit of those yet to fall victim. Further, Friedman supposes that the increasing attention, by media and politicians, on the importance of nursing homes, 'assumes increasing *acceptance* of the nursing home as an appropriate answer to "What shall we do about Mother?"' (Friedman 1993, p. 16, emphasis in original). It must be noted that this question is highly gendered and reflects the notion that those identified as frail, decrepit, ill and elderly are often feminised. This is primarily a construct of gender roles that often position men as healthy, fit and physically independent; historically, when men have been unable to perform their assigned gender roles, the individual has been feminised (Phillips & Segal 1969; Nathanson 1975; Annandale & Hunt 1990; Banks 2001; Farrimond 2011). The increasing attention to nursing homes operates to visibilise the changing nature of aging policy and the ways in which age has been resignified to accommodate the discursive shift of old age into disease-state. In a neoliberal society that places an emphasis on production, attitudes towards older people become increasingly negative, and can be explained by a perceived loss of productive roles, and consequently, also a loss of social worth (Estes et al. 1982).

These negative attitudes are essentially what compel policy-makers to create strategies aimed at dealing with – or managing – the 'problem' of old age. In a neoliberal context, which calls for autonomy and constant production, the inability to remain productive works to delegitimise one's human status. Thus, policy formulates a significant aspect of the gerontological hygiene

movement because of the power relations it exercises. It is useful to draw, once more, on Foucault here, for his analysis of social policy names the discursive production of inequality. Specifically, he states:

> a social policy is broadly speaking a policy with the objective of everybody having relatively equal access to consumer goods. How is this social policy conceptualized in a welfare economy? First of all, it is conceptualized as a counterweight to unrestrained economic processes, which, it is reckoned, will induce inequality and generally destructive effects on society if left to themselves (Foucault 2010, p. 142).

Foucault furthers this argument in terms of surveillance and the production of docile bodies. Foucault (2012, p. 195) identifies 'two related mechanisms of surveillance: panopticism, normalization and the probe of assessment'. In specific relation to the medicalised elderly, I adopt Powell and Biggs' (2000, p. 9) argument that 'these mechanisms have helped shape and mould many of the experiences of older people'. Critical to mark here is that these dispositifs of panopticism and assessment are intrinsic to notions of surveillance embedded within social aging policies. Further, the construction of these aging policies not only enforces notions of the aged-as-sick approach mentioned earlier, but also embodies first-order neoliberal governance that defines the very parameters of the medicalised elderly's human status. Through an examination of Foucauldian therapeutic regimens, I will demonstrate that in-built into social aging policies are regimes of discrimination, dehumanisation and surveillance that force the medicalised elderly to recode themselves according to current socio-juridical requirements.

Surveillance, as posited by Foucault (2010), is manifest through various biopolitical regimes, though specifically through government and police; however, he challenges the notion that the police is simply a sector of law enforcement and opts instead to examine police in broader terms. He argues that rather than governing by law, the police engage in behavioural

interventions, aimed at permanently augmenting the citizens' life (Foucault, Faubion & Hurley 2000, p. 415). This concept is significant for this chapter for the implication of intervention in an individual's behaviour, in this case, that of the medicalised elderly body. Powell and Biggs (2003) discuss this intervention in terms of the management of aging through practices of both policing and surveillance. Through a biopolitical frame, this policing is embodied in various aspects of life, however I turn specifically to interventions made through aging policy and the enforcement of these policies in medicalised quarantine sites such as nursing homes.

For instance, the *Aged Care Act 1997* (Amended 2014) relies on medicalised conceptualisations of age. This is problematic precisely because the medicalisation of age, as has been shown, was constructed by examining only older individuals whom were already sick, and whom wrongfully became metonymic for 'elderly'; that is, health statuses for 'the elderly' came to be seen as homogenous and universal, allowing physicians to make generalised assumptions of health care needs for the entire elderly population. In adopting the medical doctrine of old age, this Act presupposes knowledge of old age as disease. Critically, it furthers the construction of certain forms of elderly neoliberal subjects through an absence of information on health and a large focus on means tests, affordability descriptions, and a 'care recipients' assets and total value. The worth of the individual in question is based primarily on their socio-economic status, as it is assumed the health status will be universal.

Further, due to an aging population, Buys, Miller and Robinson (2009, p. 102) state that 'recent aging policy in Australia has been driven predominantly by the fiscal and economic implications of population aging'. The labour force faces significant changes as a result of population aging, hence while not specifically considered a crisis (Buys, Miller & Robinson 2009, p. 102), it is widely accepted that approaches and design of social and governmental

aging policies will change substantially to account for presupposed visions of what an aged population will look like (Buys, Miller & Robinson 2009). The Productivity Commission (2005) asserts the primary challenge amidst these policy changes lies in high estimations of public expenditure on health, aged care and welfare.

Here, again, the aging subject can be seen as produced through neoliberal frames that emphasise productivity. The issue of old age is not only debated in governmental sectors, but also in NGO's such as the World Health Organisation (WHO 2002, p. 12), that also homogenises 'the elderly' as 'resources' and mobilises the notion of 'active aging'. Indeed, WHO states specifically that keeping 'the elderly' productive and active is a necessity (WHO 2002, p. 6), despite there being 'no universal definition or standard science of activity' (Katz 2005, p. 122). I argue that inherent within these Acts and policies is the notion that people are no longer allowed to be 'old'; that is, in terms of categories of age, entrance into the Fourth Age must be prevented for the betterment not of the individual, but of society, precisely because of the cost of healthcare, where 'expenditure on the elderly may be seen as depriving other groups of support' (Phillipson 1982, p. 79)[25]. Neoliberalism is manifest here, through descriptive terms such as 'resource', and through mobilising common and universal assumptions that all elderly individuals age in the same way.

Further, another Australian aging policy, the NSW Aging Strategy (2012), can be recognised as intervening in the behaviour of elderly individuals, through its alignment with positive aging and a neoliberal framework. Further, discrimination and dehumanisation are built into this policy through practices of exclusion. Indeed, the policy states:

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[25] Despite Phillipson's text appearing in the early 1980s, it is critical to note that his point remains central to a contemporary western context.

an ageing population places pressure on state finances to ensure resources are

available for delivering future services and infrastructure. Reducing the impact of an

ageing population requires increasing public sector productivity to address projected

demand and community expectations for services. Encouraging greater self-reliance

and independence among older people who are capable of managing their own affairs

will also help reduce the fiscal impact of population ageing (NSW Government 2012,

p. 37).

Financial pressure, greater self-reliance and responsibility for oneself, and productivity – all work to affirm the policy's neoliberal foundations. In specific terms of financial pressure, Rose (1999) argues that a capacity to work is now seen as an imperative, both psychological and economic. Work has, since the post-war period of the late 1940s, been attributed greater, non-economic significance (p. xxix) in that a person's perceived ability to contribute to the market equates to their level of neoliberal productivity. Thus, assessing one's capacity for labour as reduced or non-existent can position the 'aging' population as inherently problematic. Deploying a positive aging approach, through the maintenance of productivity and autonomy, perpetuates what I have been labelling as the gerontological hygiene movement, specifically through both the strategy to prevent people from becoming 'old', and the strategies of social removal once an individual succumbs to Fourth Age.

Indeed, the document enforces the notion that we are not allowed to be old; by staying 'active and healthy' longer and reducing the economic strain presented by medicalised elderly subjects, it can be argued that the positive aging strategy seeks not to improve old age, but rather to improve the economy, and to reduce the strain that older people put on health care and housing. Built into this document are several key biopolitical concepts that facilitate the gerontological hygiene movement; firstly, that medicalised elderly individuals pose a problem that needs to be resolved; secondly, extending their 'expiry' date as useful economic subjects

benefits both the individual and society; and thirdly, once these elderly individuals are no longer able to fulfil this social function, they will still be remanded to the 'old-old' category – or Fourth Age – and disposed of through the same policies that are supposed to help them. Operative here is a characteristic neoliberal stratagem through which many elderly individuals are compelled to 'assess themselves'; the practice of surveillance is thus internalised in terms of a reliance on risk assessment. 'The "assessment" is a function of a disciplinary technique' (Powell & Biggs 2000, p. 11), and as such, this self-assessment often sees medicalised elderly individuals choose resettlement into a nursing home – or what I frame as medicalised quarantine zones, or compounds. Baars and Phillipson (2014) expose the internalisation of self-assessment through a neoliberal economy of productivity by highlighting a set of questions older individuals may be socially trained to ask themselves. As they contend, they are compelled to ask:

> [a]m I being exiled from normal adulthood? Can aging really be seen as a meaningful phase of life? Can I still contribute something important to society or should I be content with rather meaningless activities to keep me busy? Has *my* life, so far, been meaningful? Is my life *still* meaningful?' (Baars & Phillipson 2014, p. 12 emphasis in original).

Self-assessment and the removal from 'free' society permit the facilitation and perpetuation of the gerontological hygiene movement. Standard across Australia is the Aged Care Assessment Team (ACAT),[26] which is deployed specifically to assess the needs of elderly citizens and assist with relocation based on their eligibility to receive a certain level of care.

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[26] The ACAT is a free service offered by doctors and other medical professionals, used to assess how well a person is managing their day-to-day living. ACAT takes the form of a face-to-face interview and can be used to determine the level of care an older person needs. It is important to note that ACAT's are only undertaken when an individual wishes to apply for residency (either permanent or temporary) within a nursing home, or other facility such as respite care (Australian Government 2016).

Moreover, the ACAT can be seen as a formulation of risk calculation and management. Nadesan (2010, p. 2) argues that 'formulations of risk operate as governmental rationalities by shaping perceptions, problem-solution frames, and action orientations'. The formulation of risk is operative, in the context of neoliberal regimes, around *all* age groups and I find her statement aligns perfectly with my own interest in formations of the body as 'elderly', specifically in relation to the deployment of the ACAT. That is, notions of risk are often internalised through practices of self-surveillance and, importantly, are shaped through *a priori* assumptions and perceptions of what it means to be a risk, or at-risk. Rose (1999, p. 227) frames this internalisation as a function of modern democracy, which

> is dependent upon the existence of certain types of subjects, who did not require a
> continual external policing. The external constraint of police was to be translated
> into an internal constraint upon the conduct of the self, the formation of subjects who
> were prepared to take responsibility for their actions and for whom the ethic of
> discipline was part of their very mental fabric.

The modern democratic state, then, can be seen to be heavily influenced by Foucault's notion of governmentality. As such, governmental and institutional frameworks developed to overcome, or combat, risk are positioned as problem-solution frames and orientated towards action. The Regis Nursing Home is but one of many organisations that utilises ACAT, and it can be seen that this form of assessment rests comfortably within the neoliberal sphere. While there is an emphasis on the needs of the individual, the level of care they are eligible for depends almost entirely on their socioeconomic status.

Furthermore, the Regis Nursing home, as a government-funded institution, not only utilises and endorses the validity of the ACAT system, its own policies reflect the absence of consideration for the inhabitants. Rather, its constitution details corporate governance, including the right to exercise power over those residing within. In fact, the majority of the

Regis Constitution (2014) regards the shareholder, and the Board of Directors, and details its strategy for maintaining profit. Traditionally, a corporate constitution is a document that details the basic principles by which an organisation is governed. Here it is shown that in a neoliberal society, those basic principles exclude the many voices of elderly individuals and communities. In addition, the various other policies[27] governing the operations of Regis move on to detail the responsibilities of Board members of various descriptions and the legal requirements of employees and associated people (such as Employee relatives). Aside from the corporate documents, Regis makes available its types of care, where, in accordance with socioeconomic status and neoliberal governance, certain services are in fact denied to those inhabitants who are unable to pay for it.

Factors such as dining, medical requirements and living arrangements[28] are in-built into the ACAT utilised by Regis. I argue this neoliberal focus produces elderly subjects in specific ways by categorising their access to healthcare through a regime dependent upon wealth. The Regis nursing home corporation argues that its services are highly individualised, and assessments are based on the needs of the patient, rather than homogenising their residents and deploying a universal care regime. However, the assessment of those needs, I argue, are inextricably bound with their wealth; that is, a patient may require more medical assistance than they can afford, resulting in the placement of that individual in a lower care facility. Ultimately, this debunks the notion that care is individualised – in true neoliberal terms, it is individualised only for those who can afford it. This is further exposed as not only an issue in Australian nursing homes or located only within the Regis conglomerate; as documented by

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[27] These documents include, among others, the Continuous Disclosure Policy, Code of Conduct and the Corporate Governance Statement (Regis Aged Care 2016).
[28] These have major implications for notions of surveillance, which will be examined further in relation to therapeutic regimes.

Anita Kapoor, who ethnographically lived in Janiyah Nursing Home in Singapore for two weeks, newer nursing homes place residents in a six-bed ward. The only residents with a single room are the ones who can afford it, everything else is subsidised (Talking Point 2016). Her documentary also highlighted the regimented nature of existence within the walls, where 'everything is on a timetable' (Talking Point 2016) and there is a startling lack of choice.

Moreover, the politics of participation and social inclusion are now, arguably more than ever, predicated on medicalised notions of normativity. Importantly, medicalisation of normativity is intertwined with one's ability to physically navigate through spaces. For this reason, 'the spatial dimension of exclusion is particularly important, given the way in which individuals' self-identities are shaped by their residential context' (Scharf, Phillipson & Smith 2005, p. 77). Furthermore, in specific relation to Third and Fourth Age, historical and contemporary identities of the elderly as a homogenous collective have been constructed through expert discourses of 'decay' and 'deterioration' (Foucault, 2012; Stott, 1981; Katz, 1996), which Powell and Biggs (2000, p. 7) argue 'legitimises the search within the individual for signs, for example, that s/he requires intense forms of surveillance through medicalisation'. The pathologisation of age not only formulates part of the gerontological hygiene movement, but also provides the 'aging' body politic with the tools for self-assessment that ultimately mobilises their 'choice' to be re-settled into a care facility.

Furthermore, the re-settling into these zones marks the increased surveillance embedded into the medicalisation and naturalisation of old age-as-illness. Upon completion of re-settlement into nursing homes or other care facilities, the question, as posed by Friedman (1993, p. 16) earlier – that is, 'what shall we do about Mother?' – does not cease to exist. These compound spaces, in fact, mark the significance of this question, where the use-value of the medicalised

elderly is further scrutinised for the acknowledgement and recoding of these bodies as frail, sick, and diseased. The continued search for a use-value for these bodies, which the NSW Aging Strategy (2012, p. 21) details as 'strategies for increased opportunities for seniors to be involved in their communities and neighbourhoods', encodes these individuals in specific ways based on perceived ability to labour. Indeed, a primary strategy identified by this policy is volunteer work, such as raising money. Katz (1996) argues that in much policy surrounding old age, the bodies of elderly subjects are absent, where even the NSW Aging Strategy (2012) holistically invisibilises elderly bodies through a higher focus on the continued improvement of the economy.

This invisibilisation is widespread, where in recent history the topic of old age has been largely ignored, particularly within British sociology. Powell (2001, p. 119) notes that British social policy has reflected this lacuna, focussing more specifically on race, class and gender analyses. Although in more recent policy the topic of aging is finally addressed, primarily due to the acknowledgement of an aging population, the 'social policy in the United States, the United Kingdom and Australia have focused on the management of old age with particular emphasis on the reform of the health and welfare apparatuses' (Powell & Biggs 2000, p. 4). This management of old age is manifest through the creation of institutions focussed on the care and (re)-assessment of certain forms of elderly bodies. Estes (1979) coined the term 'aging enterprises' to account for the institutions created to specifically manage problems of aging.

These aging enterprises, Powell (2006) argues, are embodiments of modern regimes of power and knowledge, marked by the Foucauldian notion of bodily surveillance and the production of docile bodies. As stated earlier, policy can act as first-order surveillance, which is then adopted and dispersed throughout the institutions that make use of the policies; that is, second-

order surveillance through discipline – specifically in this case, Regis Nursing homes. Disciplinary regimes – what Foucault (2012) terms 'therapeutic regimes' – operate on various levels of power, the first of which for this analysis is that of the construction of not only freedom and choice, but also of the space of the nursing home as a medicalised quarantine site, or compound.

So far, this section has traced the in-built discriminatory discourses of social aging policy; to demonstrate the significance of this in relation to contemporary codings of old age, I will now turn to the implications on both surveillance and docile bodies, as analysed through Foucault's concept of 'therapeutic regimes', as discussed below. As Powell (2001) notes, the governmental classification of populations is central to regimes of surveillance. The homogenised view of 'the elderly' must be acknowledged here, specifically for the manner in which governmental classification is largely predicated upon 'the scientific claims of different experts in science and medicine' (Powell 2001, p. 124-125). Here it is shown that there exists a fusion between governmentality and medicine, specifically where old age is equated will illness. Estes and Binney (1989, p. 588) argue that old age-as-illness has 'encouraged society to think about aging as pathological or abnormal'. The prevalence of this discourse, which I argue has only increased since Estes and Binney's original publication, has led to an emphasis on the notion of aging as disease and revised expectations of dependency and effectiveness in those deemed old.

In turn, these revised expectations called for increased surveillance and management of a range of elderly bodies through biomedical assessment and therapeutic regimes, as examined below. Thus, 'the identities of elderly people and old age have been constructed through expert discourses of "decay" and "deterioration", and the [biomedical] "gaze" helps to intensify

regulation over older people in order to normalise and provide treatment for such notions' (Powell & Biggs 2000, p. 7). Furthermore, not only are issues of regulation raised through surveillance, but so too are issues of correction; that is, patholigising age in order to correct the supposed abnormalities recognised by medical institutions. This is what Foucault (2012) terms 'docile bodies', which will be presently examined.

Therapeutic Regimes: Creating Normative and Docile Bodies

Foucault (2012) attributes the emergence of docile body to the eighteenth century for its reconceptualisation of disciplinary regimes concerning the body as object of analysis and examination. The eighteenth century was, of course, not the first time that saw the body this way, particularly in terms of impositions of 'constraints, prohibitions or obligations' (Foucault 2012, p. 136). However, the notion of the body as docile came to preoccupy the eighteenth century precisely because these same impositions encountered new techniques. Foucault (2012) details that the scale of control shifted during this time, where once the body was treated '*en masse*, as if it were an indissociable unity' (Foucault 2012, p. 137), the eighteenth century saw treatment of the body as individual. Mobilising practices of coercion regulating 'movements, gestures, attitudes' (Foucault 2012, p. 137), the active body became a site for what Foucault labelled 'infitesimal power' (Foucault 2012, p. 137). This is but the first of three primary techniques or methods that Foucault deploys as enabling the 'control of the operations of the body' (Foucault 2012, p. 137); the other two being the *object* of control, and the *modality* of control, respectively.

Critically, it must be acknowledged that regimes of disciplinarity pre-date the eighteenth century – we need but point to Ancient Egyptian and Roman armies, for example – however, what Foucault marks as emerging in the seventeenth and eighteenth centuries is the use of these

disciplines as a form of domination underpinned by notions of normativity[29]. Indeed, Foucault describes this shift as political anatomy, where the power over one's body is designed to influence those bodies to operate as the governing institution wishes. Furthermore, Foucault explores this political anatomy through regulation and control, as discussed briefly above. Importantly, his analysis describes disciplinary regimes of 'therapeutic' power, deployed under the pretext of 'curing' the mad, the ill, the criminal and a vast array of other bodies identified as non-normative, and therefore, problematic. Ultimately, Foucault's concept of docile bodies is about (re)-coding aberrant or deviant bodies into normative subjects; that is, the 'controlling or correcting the operations of the body' (Foucault 2012, p. 136).

I find this useful for my examination of old age precisely for the ways in which he mobilises the notion that regimes of control are in fact inseparable from a whole series of dispositifs. That is, control operates in a nexus of power, where different forms of control are inextricably connected to others. In *Discipline and Punish* (2012), Foucault provides the example of medical supervision at a military port, where 'supervision of diseases and contagions [is dependent upon] the military control over deserters, fiscal control over commodities, administrative control over remedies, rations, disappearances, cures, deaths, simulations' (Foucault 2012, p. 144). This example is useful for this thesis, specifically in terms of medicalisation and the ways in which various modes of control and surveillance not only stem from, but also contribute to, medical frameworks of old age. Particularly because Foucault deploys notions of surveillance through examples of prisons and asylums in his analysis of docile bodies, his work becomes increasingly significant for this thesis. While there are examples of surveillance such as CCTV, restricted access and regimented entry/exit times for

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[29] Foucault details the difference/s between domination in the eighteenth century and earlier forms of power such as slavery, service, and asceticism, primarily because no form of bodily control prior operated to increase the utility of the body and indeed the 'mastery of each individual over his own body' (Foucault 2012, p. 137).

many nursing homes, I will presently focus on other types of surveillance operative within Regis Nursing homes – specifically, diet and medication, because while more obvious forms of surveillance control and shape movement through space, the control of one's diet and intake of medication/s can be seen as a much more powerful type of surveillance for its subtlety.

These forms of surveillance exemplify the interlinking of biopolitics with the neoliberal economy and its desired production of normative, docile bodies through regimes of disciplinarity that 'correct' supposed abnormalities and deficiencies. Indeed, while there are menus with various choices for the residents, I argue that the residents are not part of the construction process; they have little say in what goes onto the menu. The menus are approved by qualified dieticians to ensure highest nutritional value; as such, I argue that ultimately these strategies are designed with the intention of maintaining longevity and therefore, prolonging the onset of Fourth Age. Whether this is a good thing or not remains to be seen – and is not argued here – however it is important to note that the dietary choices are constructed and controlled for residents of these zones.

The same argument can be made regarding medication, the distribution of which often becomes the responsibility of the medicalised quarantine site. The residents in fact relinquish control of their medication to the staff in these sites[30]. It must also be noted that the type of medication/s these residents are on – while not determined by institutions such as Regis, rather determined by the larger medical framework – as I have argued, are determined by a so-called 'universal'

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[30] It must be noted that there are varying levels of care in the Regis Nursing Homes, such as Palliative, Dementia, and Transitional care. In some cases, medication may in fact *need* to be the responsibility of the staff, for instance, in the case of a Dementia patient who may not remember to take it. However, it must also be noted that in other instances there may not be a need for Regis staff members to take control over a resident's medication – though it happens, anyway.

approach to healthcare[31]. Hence, once again, individuals are not necessarily free and autonomous, or liberated. Critically, the individual must be seen as that which is 'culturally regulated by the social order and under surveillance by biomedical powers' (Powell 2006, p. 33).

Implications for the construction of the Human

This chapter has traced the emergence of gerontological hygiene as both a discursive and medicalised practice. Using Foucault's conception of Archaeology was critical for this chapter, precisely because it enabled a tracking of approaches to age and the emergence of its pathologisation. The purpose of this chapter has been to demonstrate the emergence of a biopolitical regime of the abolition of old age; that is, I have tracked various aspects of contemporary Western society that are co-implicated with anti-ageist discourses. Indeed, this chapter has challenged the ways in which the subjectivity of older individuals is constructed through the application of neoliberalism. I have argued that older individuals are bound within a nexus of social and political discourses that suggest they are not *allowed* to be 'old', precisely in terms of a reduced capacity for labour and an embodiment of neoliberalism's formulation of the 'entrepreneurial self'.

Notions of productivity can be seen to underpin gerontological hygiene regimes, specifically through the mobilisation and popularisation of aged categories, inclusive of Third and Fourth Age, which seek to measure the relationship between age and productivity. Further, anti-aging strategies such as productive and healthy aging, as this chapter has shown, claim to liberate older citizens through maintenance of their economic productivity. It is important to note that

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[31] Examples of this exist in various modes of pathologisation, such as mental health, however to examine this here is to detract from my focus of the gerontological hygiene movement.

this thesis does not suggest remaining productive is negative. Rather, I seek to stage an analysis of the discourses that produce subjects in specific ways as a result of their age. Moreover, as this chapter has demonstrated, the production of older subjects as valuable in terms of their societal contribution operates as a biopolitical strategy of surveillance. That is, elderly neoliberal subjects are encouraged to continually monitor and self-survey themselves in accordance with the characteristics of Third and Fourth Age.

In relation to Foucault's conception of therapeutic regimes, this chapter explored the ways in which elderly individuals are encouraged to self-monitor themselves, and more importantly, are encouraged to relocate themselves to medicalised institutions such as nursing homes. Indeed, this chapter framed nursing homes as compounds for their medicalised and regimented nature and exposed the in-built discrimination in the policies and constitution of nursing homes across Australia and the United States. Aging policy has hence been critical for understanding precisely how gerontological hygiene is mobilised through private, public, and governmental institutions. It is through these policies and the associated anti-ageist discourses that contributes to the increasing pathologisation of age. As such, this chapter has drawn on some anti-aging somatechnologies, and their inter-relationship with neoliberalism, aging policies and notions of surveillance, to demonstrate the nexus of asymmetrical power relations older individuals can be bound within.

It has been necessary in this chapter to trace the archaeology of gerontology to then mobilise an analysis of the ways in which biogerontology has since evolved. Importantly, it has been necessary to trace social and governmental policies surrounding age to demonstrate the socio-cultural and political constructions of the ways we are *allowed,* or at the very least, encouraged to age. Old age is often framed as an economic burden, and in conjunction with the ever-

increasing medicalisation of age, has come to be understood as an unnecessary and outdated mode of existence. In this way, questions of categories of the human must be asked, with which Chapter 3 of this thesis seeks to engage. I now turn to discursive constructions of the human to expose the ways in which old age has historically existed at the fringes of Western societies. Through the use of works by Martin Heidegger, Hannah Arendt and Jacques Derrida, Chapter 3 mobilises the argument that these discursive constructions are still in operation today. Further, Chapter 3 seeks to outline the implications these discourses have on understandings of what constitutes the human and the critical role anti-aging somatechnologies play in perpetuating understandings surrounding the older subject.

Chapter Three

Questions of the 'Human'

Genealogy of Humanism

As I discussed in Chapter 1, modes of embodied subjectivity have come into question via the development and deployment of diverse somatechnologies. Western notions of both the human and the self, have been previously well established throughout the emergence and evolution of humanism. The notion of humanism is significant for this thesis as it elucidates a specific understanding of not only the human, but also the human being's relation to other beings, such as deities, the animal, and other forms of nonhuman beings, which this chapter seeks to interrogate. In order to interrogate humanism, this chapter will firstly trace a genealogy of its emergence and development; tracing a genealogy of the notion of humanism – and critically, of the human – in order to demonstrate how humanist discourse continues to be prevalent across a range of Western discourses.

It is crucial to note that establishing a clear historical starting point for humanism is perhaps impossible. There is no precise moment of departure for humanist discourse; indeed, it can be conceptualised as a discursive assemblage, comprised of diverse components. For the purposes of this thesis, however, a point of departure is required, and will be outlined in the succeeding parts of this chapter. The unfixed origin of humanism is demonstrative of the subtle and slow evolution of specific discourses, outlining that changes in social paradigms often occur over an extended period of time. This will become evident throughout the chapter, during the analysis of the emergence of various forms of humanism and the slight, but crucial, alterations in discourse, which were ultimately productive of conceptions of the category of human.

As such, humanism as a field of inquiry is, in fact, too vast to be sufficiently explored within the confines of one thesis chapter; indeed, to do it justice would require an entire thesis. However, as stated above, a genealogy is required for this thesis to progress towards an analysis of the contemporary construction of the human and, by virtue, the nonhuman, specifically in relation to the construction of old age as a disease-state. Indeed, the deployment of somatechnologies developed to intervene in this so-called disease-state work towards a homogenised Western construction of 'the elderly' as somehow lesser human beings and, in some cases, as nonhuman beings. As will be shown throughout the genealogy of humanism in this chapter, there exists a long tradition of categorising specific bodies in this way. I turn now to a focussed genealogy of humanism to enable critical discussion on the ways in which certain bodies have been – and are still – categorised as either human or (non)human animal. The term humanism 'is a word with a very complex history and an unusually wide range of possible meanings and contexts' (Davies 2002, p. 3). However, the context of humanism must be specified here, as must the specific form of humanism that this chapter suggests is existent in contemporary society, that is, secular humanism. In what follows, I will examine humanism in order to provide the theoretical foundations for both questions of the human and ethics of the 'cure'. Understanding humanism will also allow for a more in-depth analysis of somatechnics, which will be the focus of later chapters in this thesis.

To establish a clear trajectory of humanist philosophy, this chapter will categorise humanism into two distinct types, that is, *relational* and *transcendental*, terminology borrowed from James Hansen (2007). Theoretical inquiry into the field of humanism is fraught with 'a multitude of philosophical currents … [and] various components can be distilled from the overall humanistic paradigm. Dividing humanism into relational and transcendental subcomponents is one way to conceptualize this theoretically multifaceted counselling

orientation' (Hansen 2007, p. 131). Hansen's notion of transcendental humanism is framed within the discourse of psychology; however, it is applicable in a general sense nonetheless. Transcendence, in Hansen's terms, is concerned less with religion and more with the alignment of humanism with an 'emphasis on accuracy, truth, discovery, and objectivity' (Hansen 2007, p. 131). Under this rubric, one would place both Renaissance and secular humanism as transcendental in nature. Hansen (2007) points to Renaissance humanism as an appropriate starting point for a genealogy of such a philosophy. He states that:

> throughout the middle ages of human history, religion was considered the quintessential source of knowledge and answers about the human condition. During the Renaissance, when classical Greek philosophy was rediscovered, there was a turning away from the divine as a way of understanding human affairs. This rejection of transcendence (i.e., ultimate truth and authority that exists outside of the human realm) and the consideration of humans as irreducibly whole beings who should be understood on their own terms are the hallmark features of Renaissance humanism (Hansen 2007, p. 133).

Renaissance humanism, then, is indeed an appropriate starting place in the genealogy of humanism quite specifically because several of the hallmarks that it announced are the very features that later humanisms – for example, secular – interpret as its fundamental frameworks. Indeed, Lamont (1990, p. 12) notes, that 'contemporary humanism includes the most enduring values of Renaissance humanism'. Critically, it is to the erasure of religious ideology – and the subsequent repositioning of 'Man' atop the hierarchical chain of existence – within humanist discourse that primary attention will be drawn. Significant in Lamont's framing of the survival of Renaissance humanist ideologies is its 'insistence on getting away from religious control of knowledge; its immense intellectual vitality; its ideal of the well-rounded personality; and above all, its stress on enjoying to the full our life in this world' (Lamont 1990, p. 22-23).

Further to this, Renaissance humanism has been attributed with 'instituting a new and distinctively modern notion of human individuality' (Davies 2002, p. 18) and a fervent rejection of reductionist approaches to the human that position the species as mere by-products of the divine (Tarnas 1991). Following on from the establishment of Renaissance humanism was the emergence of Enlightenment philosophy, strongly espoused by Immanuel Kant, who gave the word its discursive authority (Davies 2002). Despite its emergence in the wake of Renaissance humanism, Enlightenment ideology did not become prominent in Europe until the seventeenth and eighteenth centuries and encouraged society to challenge ideas grounded in faith and tradition. The movement was mobilised by philosophers such as Spinoza, Locke, Bayle, Voltaire and Newton, though the movement was not universally accepted.

The promotion, by these philosophers, of scientific thought and intellectual interchange, the opposition of superstition and the acknowledgement of the abuses of power by church and state led to the demise of several of them; for example, Giordano Bruno was burnt at the stake for his progressive ideas in 1600, and others such as Spinoza (who was greatly influenced by Bruno) feared a similar fate (Galilei 1989; Calcagno 1998; Gagliotti 2000). The importance of Enlightenment philosophy lies in its notion of the emancipation of a '*self-incurred minority*' (Kant 1999, p. 17 emphasis in original), which Kant states 'is [the] inability to make use of one's own understanding without direction from another' (Kant 1999, p. 17). The term 'another' does not necessarily constitute the supernatural, but perhaps could also be interpreted as direction from the state and politico-legal discourses. It is this concept of emancipation that constitutes Enlightenment. Within this enlightenment frame, then, one is able to construct similarities with Renaissance humanism, for its promotion of intellectual and scientific thought. Also, within the Enlightenment frame, one can recognise the rise of secular humanism.

The similarities between Renaissance humanism and secular humanism are striking; however, the key difference is the complete rejection of faith-based system of meaning-making. According to Katie (2013, p. 1), secular humanism 'ascribes to a philosophy that adopts reason, ethics, and the search for human fulfilment, and precisely denies supernatural and religious dogma as the basis of morality and decision-making. Thus, based on theological underpinning, secular humanists are atheists'. It can be seen then, that where Renaissance humanism focused on scientific thought, it did not explicitly deny the existence of a higher power, rather it found that a supernatural deity was not the centre of human action and allowed human beings to conceive of themselves as self-sufficient and autonomous beings.

Secular humanism extends this paradigm through its complete rejection of religion and faith, hence the conclusion that secular humanists are atheists. It is worth noting, however, that without religion, secular humanism would not be able to exist, for the simple fact that unlike Renaissance Humanism, which sought to co-exist with religious dogma, secular Humanism holds an active antipathy towards religion. Davies (2002) and Katie (2013) point towards positivist thinker, and father of sociological discourse, Auguste Comte, as a central figure in the propulsion of the move towards secularism through a hostility towards every supernaturalism and metaphysical idealism. Indeed, Comte advocated an atheistic religion, which came to be known as the 'religion of humanity'. Davies (2002) nicely encapsulates Comte's notion:

> A universe without supernatural sanction or presence … can be fully understood only
> by the scientific description of 'positive' phenomena, stripped of the sentimental
> pieties of traditional religion or romantic pantheism[32]. As for human beings in that
> godless universe, their moral and social coexistence has no basis to appeal to beyond

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[32] Pantheism is the belief that God is in everything, and that the universe is identical with divinity.

their own resources – themselves the result of the evolutionary development of the

species – of sympathetic fellow-feeling (Davies 2002, p. 28).

In this way, then, secular humanism presents a caesura of sorts between God and Man, where humankind actively disengages with the notion that a supernatural being exists all.

Through the examination of the two prominent features of transcendental humanism, one is able to acknowledge the foci, as outlined by Hansen (2007, p. 131), on accuracy, truth, discovery and objectivity. Hansen's second concept, Relational humanism, was also theorised in the context of psychology and the treatment of the client; it states that the relationship between the counsellor and the client be authentic, anti-reductionist, and views the client as an irreducibly whole being. The importance of these categories of humanism, that is, transcendental and relational, as defined by Hansen, lies in the third and final category that can only exist through the creation of the previous two; that is, the notion of *non-transcendental* humanism. What is significant about this notion is that it eschews all transcendence from a Darwinian perspective (Hansen 2007, p. 138), placing humans and animals on the same level in a levelling movement that challenges dichotomous logic.

These terms – transcendental, relational and non-transcendental – can be considered as devoid of meaning unless one is able to establish a clear conceptual understanding of the core values of all humanist discourse. Transcendental humanism cannot exist without first establishing humanism in its most basic definition, for there would be no humanism to transcend. Hence in order to delve adequately into defining the human, one must trace the trajectory of humanism. Prior to the emergence of humanism, the generally accepted system of thought was the Great Chain of Being, which relied heavily on religious doctrines of creation (Wilber 1993; Nee 2005). Within this system, Gods were positioned as the most significant species, with humans

not appearing until mid-way down the pyramidal hierarchical structure, which were preceded by other supernatural entities such as angels.

Witt (2000, p. 1) traces the emergence of humanism to fourteenth-century Italy, where 'after 1300 there emerged an intellectual movement, Italian humanism, which ultimately established laymen's lives as equal in moral value to those of clerics and monks'. Morality, however, need not endorse the separation of church and state, indeed the idea of secularism had not yet begun to form. One is able to suggest that humanism as a movement or a philosophy could not truly be deployed until it had been named, for without categorization the idea is simply non-existent. Corliss Lamont (1990, p. 12) traces the emergence of the term 'Humanist' to the early sixteenth century 'to designate the writers and scholars of the European Renaissance'. The exact date of emergence for the terms has been contested somewhat, where Katie (2013) traces its origin to the fifteenth century. The constant thread in analyses of humanism – specifically the origin of the term – is that it stems from the 'Italian word *umanista*, which connotes, a teacher or scholar of classical Greek and Latin' (Katie 2013, p. 1 emphasis in original).

Davies (2002) endorses this notion when he positions early humanism as preoccupied with language, placing an emphasis on oratorical skills. His logic is historically sound in the sense that, as Walter Ong (1982) points out, oral cultures preceded alphabetic cultures by thousands of years. The importance of orality, then, must be noted in examinations of humanism[33]. Derrida (2011) mobilises a contrast between the beast and God to articulate the importance of language in the construction of the human. He posits the following:

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[33] The history of oral culture is extensive, however for the purposes of this thesis, it need only be acknowledged. Of greater importance to this examination is the ideology of humanism and the ways in which its evolution has shaped notions of the human.

the beast does not understand our language, and God cannot respond to us, that is, cannot *make known* to us, and so we could not know in return if our convention is or is not accompanied by him. In both cases, there could not be an exchange, shared speech, question and response, proposition and response, as any contract, convention, or covenant seems to demand (Derrida 2011, p. 55, emphasis in original).

Within this Derridean frame, one can observe the quality of language as existing specifically, and uniquely, within the human. Davies (2002) further advances this notion, arguing that oral language became a preoccupation within early humanism through a positioning of 'man [as] the speaking animal' (Davies 2002, p. 79); that is, that language is proper to man. Furthermore, in his 'Letter on Humanism' (1998), Martin Heidegger explores this same notion in relation to 'thinking', which,

accomplishes the relation of being to the essence of the human being. It does not make or cause the relation. Thinking brings this relation to being solely as something handed over to thought itself from being. Such offering consists in the fact that in thinking being comes to language. Language is the house of being. In its home human beings dwell (Heidegger 1998, p. 239).

Not only do Davies (2002) and Heidegger (1998) contribute to this history of humanism, they also reproduce the caesura of man from animal. As this chapter will continue to demonstrate, the theoretical underpinnings of the human are problematic, anthropocentric and rely on ambiguous understandings of rationality, Being, existence, and notions of speech and political action.

Due to the expanse of literature on the notion of humanism, and the impossibility of examining all of it within the confines of one thesis chapter, I will continue my analysis with a focus primarily on three key figures whose work has provided invaluable insight into constructions

of the human, precisely in relation to this thesis. Specifically, this chapter will utilize the work of Martin Heidegger, Hannah Arendt and Jacques Derrida as foundational contemporary figures who interrogate humanism as a concept and the human as a category. Firstly, Heidegger's work is critical for this thesis for his conceptualization of metaphysics and 'man'[34] as the speaking subject. Heidegger places an importance on language and orality for conceptions of what can be classified as human. In relation to this thesis, Heidegger's (2001) work on essence and *ek-sistence* is of significance as well, as a large portion of his work is framed with the goal of establishing, proving and justifying the human through its unique capacity for essence. As such, this chapter will examine and problematise essence as a core or innate substance existing purely within the human. This metaphysical essence has historically driven humanist discourses of binary oppositions and hierarchies. The third critical Heideggerian notion for this chapter is that of world, which specifically aims to delimit the animal, positioning all animal experience as inferior. Further, this concept produces the animal as purely instinctual and non-reasoning, which can be directly linked to Hannah Arendt's work surrounding political thought in the construction of the human.

As such, Arendt's *The Human Condition* (1998) will provide an important framework for certain constructions of the human in relation to Arendtian concepts of labour, work and action. It is critical to depict what Arendt means by these terms, for their deployment in theoretical frameworks has been significant in the construction and perpetuation of the human as a category. Furthermore, Arendt's notion of labour is particularly critical for this thesis for the ways in which the human category is dependent upon one's perceived capacity for either work or labour (Arendt 1998). The difference between these terms, as this chapter will detail, mobilises the positioning of certain bodies as subaltern, and indeed as animals. The consequent

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[34] I will address the gendered dimensions of this figure in due course.

treatment of these subaltern subjects – primarily slaves – is evidence of the significance of the category of the human as well as the articulation of power by the sovereign in maintaining specific ideals of that category. Indeed, it is crucial to mark the influence of Arendt's conceptualisations of action, work and labour in the construction of the human specifically for the ways in which these concepts have shaped the (un)ethical[35] treatment of certain subjects.

Arendt's work is transposable to a contemporary context, then, when considerations of the ethics of scientific experimentation face scrutiny in the latter sections of this chapter. Primarily concerned with the emergence of racialised discrimination, this chapter details practices of experimentation upon African American bodies in order to trace the significance of Arendt's notion of labour in both the ethical discourses of medicine and the development of somatechnologies. Moreover, by firstly mapping these terms, this thesis aims to apply Arendt's considerations of the human to contemporary problematic identifications, specifically old age as a disease-state. This is primarily achieved through the development and deployment of advanced somatechnologies aimed towards eradicating these bodies, such as was demonstrated through the examples of Trinfinity8, caloric restriction and adipose therapies in Chapter 1 and productive aging in Chapter 2. These technologies and practices perpetuate specific ideals of what constitutes the proper human body, or as Derrida (1979, p. 15) suggests, what is 'proper to [hu]man', thereby further demarcating particular bodies as nonhuman.

In specific relation to Arendt's work, I argue that elderly individuals are constructed as unable to perform either work or labour through characteristics such as limited mobility or mental capacity, as articulated by scholars like Foucault (1964). Important to emphasise is that the

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[35] It is important to trace ethical implications throughout this chapter so that the analysis and critique of ethics surrounding current anti-aging technologies, policies and discourses in Chapter 4 are buttressed by co-implications with (non)human subjects.

construction of the human as a category necessarily constructed the category of the non-human, and these categories are inextricably determined by one another. These categories have been significantly deconstructed by the work of Jacques Derrida[36], whose work is crucial for this thesis, particularly in relation to the notions of both the beast and the sovereign. Indeed, Derrida details the significance of the conception of both beast and sovereign in constructions of the human. His deployment of the beast necessarily invokes questions of the human and aptly deconstructs notions of the human from a logocentric perspective; specifically, he interrogates metaphysical understandings of the human that specify the speaking subject embodying law, order and rationality – as espoused by such theorists as Martin Heidegger – and questions precisely what is being suppressed through this understanding. Through Derridean deconstruction, then, one is able to acknowledge the problematics of the category of the human, which will prove to be invaluable for Chapter 4 of this thesis. With specific relation to human experimentation, Derrida's work remains crucial, for while undertaking a Derridean perspective of logocentrism, one must examine whom precisely the category of the human includes and, more importantly, excludes.

Inclusionary and Exclusionary Regimes

As stated briefly above, the category of the human has historically been dependent upon what it excludes. The category, then, necessarily disavows difference in order to ensure the *Homo sapiens* position atop a hierarchical binary structure, whereby it can be defined specifically through what it excludes. Indeed, Aristotle proposed a definition of the human, that being '*zōon logon ekhon*, [or] animal rationale, living being endowed with reason' (Derrida 2011, p. 317). Within this definition one is able to note that language of exclusion, whereby the human is

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[36] An examination of Derridean frameworks of the human and of ethics will be deployed in Chapter 4, as such he only required brief mention here.

separated from the animal through the 'added capacity of reason', a notion furthered by Foucault in several of his works (1990; 2001; 2003; 2012), and Martin Heidegger, as will be demonstrated shortly.

However, through reflexive studies of 'speciesism' (Singer 1975), reductionist explanations of the animal can not only be intervened, but also potentially dissolved. These reductionist explanations will be examined throughout this chapter, with particular reference to Derrida's notions of the beast and the sovereign. Hence, what were once clear distinctions between the human and the animal have become blurred through the development and deployment of somatechnologies, onto and into the (human) body, specifically concerning elderly individuals. If these boundaries are in fact dissipating, then ethical questions must necessarily arise when considering life exploitation in the service of the invention of medical 'cures'; exploitation need not imply the death of a subject – both human and animal, or otherwise – but rather, the ethical mistreatment of such a subject. Historical exploitation has taken many forms, however, for the purposes of this thesis, my focus will be specifically on medical science and human experimentation.

As evidenced throughout history, human experimentation has been a key method in the advancement of medical science. Specific bodies were utilised – and indeed, exploited – for scientific ends, which necessarily deploys concerns around ethics; this raises the critical question: which bodies are expendable? The term experimentation, 'in the medical field, … [denotes the performance of] a procedure whose consequences are yet uncertain, or to try a product whose efficacy or safety still has to be established' (De Castro 1995, p. 259), and in the history of medical science several key examples exist which evidence the absence of ethics within this realm. Various species have been used for experimentation, but what is at issue here

is the use of human bodies for the advancement of medical science. The use of human bodies for such purposes outlined the problematics of deploying the "human" as a category; indeed, it necessarily demands one to consider what – and who – may exist outside that category, in order to justify using bodies in any way deemed necessary in the name of medical science. It is well documented that human experiments formed a large part of the Nazi regime; however, in post-war American prisons, inhabitants of such a zone were often subjected to experimentation (Hornblum 1998).

While prisoners were exploited, other subjects were also experimented upon without their knowledge, for example, African-American syphilis sufferers between the 1930s through to the 1970s, who were consistently used as metaphorical guinea pigs for medical progression, whilst never being informed of their illness (Thomas & Quinn 1991; Roy 1995; Reverby 2000; Freimuth et al. 2001). Emerging here is the notion of hierarchies of life, in which one is able to clearly establish the European 'man' as superior to that of the African American; a long history of the differences between Europeans and non-Europeans visibilises the practice of affirming Europeans as subject to perfection, or at the very least, superiority, while concurrently positioning others as just that – Other. As Pugliese (2013, p. 35) notes, 'the category of *human* was, by definition, one that could only be shared by the European subject'. Perhaps one is able to attribute this to the notion of rationality, for the 'individual human being has traditionally been understood as a rational animal, that is, an animal with cognitive powers, in particular the power to represent the world around it' (Blattner 2006, p. 9). Throughout humanist discourse, only certain types of bodies have been classified as rational – specifically, the Caucasian, middle- and upper-class males, to the exclusion of all others. For example, Denise Ferreira Da Silva demonstrates how raciality acted to subjugate specific bodies. She states that 'the living body that best expresses life is not the human body, but the body of post-

Enlightenment (Caucasian, white) Europeans, the body of man … whose ("highly developed") "mental functions" are inscribed in its social configuration, that is, "civilisation" (Da Silva 2007, p. 105). Within this statement, Da Silva is elucidating the historical discourses that have deployed racialised bodies, but furthermore she is demonstrating the emergence of the superior human body. In these terms, we are able to see specifically that the category human is always-already racialised, and always-already hierarchical by nature.

Da Silva identifies the notion of 'highly developed mental functions', which can be interpreted as rational thought, thereby positioning the European as a rational animal. Further distinctions are able to be seen – as demonstrated in Chapter 1 – through the examination of other bodies, such as those deemed 'old' in a biomedical regime; distinctions based on these bodies revolve primarily around notions of consciousness (Lamont 1990; Heidegger 2001; Norman 2004; Pepperell 2009; Benedikter et al. 2010) and the ability to labour (Arendt 1998; Heidegger 1998; Althusser 2002). Those who fell outside the limited confines of the category of human would thus be subject to experimentation and exploitation. Indeed, those who fail to meet the standard of 'human' have been historically remanded to the category of the beast, which will be examined through a Derridean frame in this chapter.

De Castro (1995) identifies perhaps the most obvious – and indeed the most crucial – aspect of experimentation when he states that 'if the experiment is carried out on human subjects, it entails the undertaking of risks by human beings' (De Castro 1995, p. 259). What is critical to mark here is removal of consent and, more importantly, who is perceived as able to give – and receive – consent. This will be analysed through a Heideggerian framework in specific relation to essence, *Dasein* and world. The Nuremberg Code, first instituted in 1947, provided fundamental ethical regulations for the obtainment of the consent of a human subject after the

Nuremberg trials in which 'seven distinguished German doctors and scientists were sentenced to death and nine others committed to long prison terms' (Hornblum 1998, p. xv) after the experiments they conducted were exposed as horrendous by any standards (1998). Hornblum's (1998) book *Acres of Skin: Human Experiments at Holmesburg Prison: a Story of Abuse and Exploitation in the Name of Medical Science* offers a historical examination of human experimentation and traces an American genealogy of life exploitation, which will be pivotal for this thesis in relation to ethics. Critically, in relation to who – and indeed what – is afforded the 'right' to be treated ethically.

The term 'life exploitation' has been used purposively here, for not only does this refer to the historical exploitation of animals – for reasons both medical and otherwise, such as for economic and for functional reasons – but encompasses the concurrent exploitation of several 'human bodies'. As seen in Chapter 1, these bodies included the disabled, certain forms of the elderly, the homosexual, Jewish people, women, children, immigrants, 'the native', and the ill and/or diseased. Critical to mark here is the fact that, ironically, these various life exploitative practices occurred throughout humanist periods. Within humanist discourses that necessarily centralised the human as the most significant species, concurrently discourses of what constituted the human erupted, resulting in dichotomous structures of subordination and, ultimately, the subaltern subject. Humanism, then, must become subject to inquiry in order to outline the political – and indeed, the *bio*political – epistemologies enmeshed in such a philosophy. Indeed, humanism, as will be shown throughout this chapter, deployed the justification of a nexus of power by which specific human bodies were identified as subordinate to others by a perceived lack. Critically, humanism in all its forms came to position only specific bodies as human, in and through the deployment of power, as seen in Chapter 1. This chapter examines the biopolitical caesura of the human from *animal*, and the consequent

caesura of human from *human* in order to disturb once static notions of ethics in specific relation to the medical body and the notion of the 'cure'.

Ethical inquiry into the (ab)use of animals in scientific research only became a concern in the context of the twentieth century. Peter Singer, among others, has been an instrumental voice in the acknowledgement and deployment of animal consideration. His work on ethics has been pivotal – if not somewhat controversial – in challenging clear human/animal binaries. Singer has been noted as controversial for his views on quality of life, the advocation of death in certain instances and his work on abortion, euthanasia, and bestiality. In *Animal Liberation* (1975), Singer develops the thesis that all lifeforms able to suffer should be treated equally; for the purposes of this thesis, Singer's work shall be referenced only in relation to his controversial views of rights, whereas the work of Levinas shall be utilised far more frequently for his critical intervention in the field of ethics.

Indeed, even as Levinas is a foundational figure of ethical thought, his ethical philosophy continues to be dependent on humanist discourse, buttressing and perpetuating a traditional humanism that denies ethical obligations towards beings that are incapable of language. Indeed, Derrida has argued that 'Levinasian ethics has no way of experiencing responsibility towards plants, animals, and living things in general' (Critchley 2007, p. 180), alluding to Levinasian ethics as anthropocentric in nature. Despite this claim, which must be taken seriously and will be examined throughout the ethics chapter of this thesis, Levinas is still critical towards elucidating the complexities of ethical discourse. As such, his work will formulate the foundations of my critique of the problematics of a clear ethics in medical science, particularly when the categories and distinct natures of human and animal are destabilised.

As Derrida demonstrates throughout much of his work, considerations of ethics have indeed been anthropocentric in nature; that is, canonical ethics position the human as the central figure in the universe, thereby purporting that all meaning stems from, and is controlled by, humans. Derrida furthers this through his conception of the beast and sovereign, whereby the beast is excluded from the law, and therefore excluded from ethical consideration. This notion of anthropocentrism – as elucidated in much of Jacques Derrida's academic contributions (Derrida 1979; 2002) – can be seen to underpin questions of ethics, for example, in a society where the boundaries between human and nonhuman are blurred by somatechnologies, where is the ethical line and how far can we go before we have crossed it? How does one determine the limits of ethical action? Furthermore, how far *should* we go, and how is the ethical line deployed, monitored and controlled? These questions have significant implications for the ethics of animal testing, cloning, and the use of stem cells; they also illuminate the need to perpetually re-examine ethics, as new questions emerge concurrent with new technologies. Hence, this chapter is concerned with asking why and how the suffering of one lifeform over another becomes not only acceptable, but also seen as necessary. In considerations of the animal subject in the production of 'cures' for the human subject, one must pause to acknowledge that traditional uses of animals in scientific research can be equated, if applied to humans, to what can best be described as torture. As such, this chapter encompasses a critical examination of ethics in contemporary medical research. Biotechnological advances have further disturbed the barriers between human and animal, and moreover, between human and non-human.

These technologies have played a vital role in the construction of not only disease, but also of what are deemed to be 'acceptable' bodies, and necessarily demands further examination of the notion of an innate sense of self. Indeed, through the development of these technologies,

the very existence of an innate sense of humanity must be deconstructed and questioned. The notion of an innate sense of humanity has often been referred to as essence; in particular by Martin Heidegger, whose account of the human necessarily reproduces dichotomous human/animal distinctions (1998; 2014). Heidegger's notion of the human as pure and in possession of essence stems from a specific version of humanism in which hierarchies of life were deployed in order to secure the human's position as superior in relation to every other species. Calarco and Atterton (2004) explore much of Heidegger's work on essence and the human, stating that 'he is … unable to overcome the anthropocentrism of the metaphysical tradition, which consistently defines animals in opposition to and by measure of the human' (Calarco & Atterton 2004, p. xix). Furthermore, they suggest that 'in order to present an effective alternative to metaphysical definitions of human beings and other animals, this anthropocentric dogma is precisely what needs to be addressed' (Calarco & Atterton 2004, p. xix). Both essence and anthropocentrism are central to discussions of hierarchies of life, and critically, of what Althusser (2002) describes as the Absolute Horizon, in which can be found the capacity of the human to recognise himself as 'man'.

Critical to mark here is the long phallocentric tradition that has excluded woman from the category of human; it is important to name this tradition, and as such I will discuss this presently. While gender is a complex field, for the purposes of this thesis it is of critical interest and will be discussed in order to acknowledge the long tradition of phallocentrism that has impacted notions of the human. This phallocentric tradition can be seen in various ways, one of which is the construction of women as products to be sold in economic exchange. Several theorists have been important voices in discussions and examinations of gender, among them Luce Irigaray, Gayatri Spivak, Simone de Beauvoir, Judith Butler and Donna Haraway, who aptly stated that 'humanity has a generic face, a universal shape. Humanity's face has been the

face of man' (Haraway 1992, p. 86). Genevieve Lloyd (1984) traces the phallocentric tradition to early Greek societies and the development of Platonic thought that saw the mind/body dichotomy flourish. Lloyd details the connection made between women and Nature through the ability to reproduce; indeed, Plato described women as imitating the Earth (Lloyd 1984, p. 2). Through early Greek thought, Lloyd also traces the phallocentric tradition through the split between reason and nature, encapsulating the idea that indeed knowledge – as a defining feature of reason – is the subjugation of nature, thereby distancing women from the capacity for rationality and mobilising discriminatory discourses of gendered persecution. Indeed, 'in Greek thought, femaleness was symbolically associated with the non-rational, the disorderly, the unknowable—with what must be set aside in the cultivation of knowledge' (Lloyd 1984, p. 11).

The mind/body dichotomy expressed by Plato emphasised the body as subordinate to the mind and was later elaborated by Judaic and Christian thinkers in ways that connected it explicitly with the theme of man's rightful domination of woman (Lloyd 1984, p. 7). Haraway (1992) furthers this through a discussion of the figure of Jesus not only as the epitome of Man, but of humanity itself. Perhaps unsurprisingly, the re-articulation, by later theorists, of mind/body, and indeed Reason/Nature, into mind *and* body works to further mobilise gendered ideals of masculine and feminine. For instance, Francis Bacon positions science as a form of domination over nature and by proxy, over women (Lloyd 1984, p. 11). It is crucial, however, to elaborate on this and surmise precisely how women were removed from the human category, or as Brian Carr (1998) suggests, *dehumanized* as non-subjects. The discursive production of male dominance can be seen as perhaps the initial phase in this dehumanizing project, where rationality and reason were essential characteristics not only of humanism itself, but also more

specifically of Man. It is this denial of rationality that comes to constitute the female exclusion from the human category.

Through this denial of Reason, one is able to make connections to the notion of race. The racialised (non)-subject, in terms of gender, comes to be of interest here, for the distinction between white women and African-American women was produced by a racialised hierarchy that also reproduced gendered relations of power that worked to position them differently on these intersecting hierarchies; indeed, the mobilisation of certain symbolic and legal systems perpetuated patriarchal ideals that remanded the female – both white and African-American – in a state of not fully human, though in significantly different ways in relation to power. Importantly, Haraway traces the significance of Sojourner Truth, who specifically highlighted the exclusion of African-American women from the category of the human, which Haraway refers to as 'unmarked universality' (Haraway 1992, p. 93). Haraway details the emergence of racial and sexual discourses that came to define the African-American female as 'marked female (animal, sexualized, and without rights), but not as woman (human, potential wife, conduit for the name of the father)' (Haraway 1992, p. 93-94).

This marking of female not as human, and the implications this holds concerning the female exclusion from the human category, must be considered in terms of language and the implicit denial of legal and symbolic rights to women through the power of language and discourse. As Elizabeth Grosz (1989, p. 39) asserts, 'language is a structuring device, a condition for the production of subjects'. While it must be acknowledged that some women were never denied the capacity to speak, historically women were also denied the right to an education; this exclusion from education can be considered here as an exclusion from language, furthering the Platonic dominance of men over women. Furthermore, this can also be read as positioning

women once more in close relation to nature, perpetuating the subordination of nature to science and producing women, through their exclusion from language, as non-subjects whose purpose is to remain custodial to the patriarch. This can be further examined through the framework of female bodies as commodities, as expressed by Luce Irigaray (1985, p. 170), who in *The Sex Which Is Not One* engages with the notion that the exchange of women as entirely necessary in order to avoid the anarchy of the animal kingdom. As demonstrated in this brief discussion, women, historically, have been constructed as possessions, objects and reproductive machines; indeed, in the case of female African-American slaves, as those which produce *property* rather than a human child.

Indeed, Hartman (1997, p. 21) asserts that through the 'fungibility of the commodity, the captive body becomes an abstract and empty vessel'. Further, Hortense Spillers (1987) poses the metaphor of the vestibule as a mode of distancing the slave and the human; that is, Spillers identifies the caesura between the human and the nonhuman Other through the examination of slavery. Exercising violence upon the body of slaves, such as 'lacerations, woundings, fissures, tears, scars, openings, ruptures, lesions, rendings, punctures of the flesh' (Spillers 1987, p. 67)' operated to enforce the sovereignty of the inflictor/s and the bestiality of the recipient. As Pugliese (2013, p. 45) notes, this 'vestibularity clearly designates the biopolitical space in which nonhuman animals are still quartered, wounded, executed and rendered into commodities for humans'. In the case of white women, a husband was able to exercise certain rights over his wife, and a father over his family, though Haraway demarcates this from full ownership and asserts that 'in these discursive frames, white women were not legally or symbolically fully human; slaves were not legally or symbolically human at all' (cited in Pugliese 2013, p. 45).

Althusser's (2002) work perpetuates this phallocentric tradition in a significant way, where he contends with the notion of human essence that arguably informed Heidegger's later theories. Indeed, Althusser (2002, p. 242) states the Absolute Horizon is the 'process of man when [he] encounters, in his objects, the reflection of his essence'. Based on notions of essence, one may assume the human to be static and definable through the presence of the metaphysical innate core-identity. However, through poststructuralist discourse, essence itself has been problematized for its inability to prove its existence outside of systems of differential relation and the lack of potential for evolutionary transformation. For instance, Nietzsche, in *Thus Spake Zarathrustra* (2008), positioned the human species as 'transitional … in the course of evolution; the question what man is entails the question what he can become' (Lingis in Calarco and Atterton 2004, p. 8).

The addition of biotechnologies necessarily forces the human as a species to reconsider notions of essence, divorce itself from the image of the 'pure human', and ponder the future of the species. Scholars such as Donna Haraway have been immersed in this field of inquiry for some time, challenging notions of normative (human) bodies. Haraway's seminal piece, *The Cyborg Manifesto* (1985), for instance, explores the creation of OncoMouse, which she claims suffers, like all laboratory animals, in the name of human salvation (Carroll 2014). Further, the creation of Vacanti Mouse, the first mouse to have a human ear grown on its back in the name of medical research continues to challenge boundaries between species. N. Katherine Hayles must also be identified as a significant voice in the question of the human – and the posthuman – for her advancement of the human body as the 'original prosthesis we all learn to manipulate' (1999, p. 3), which positions the human as a site of technological contestation from the time of conception. Before conceiving of the importance of the posthuman, and the somatechnic – where this research is situated – one must firstly acknowledge the critical interjection of

humanism in poststructuralist contexts, for as Neil Badmington (2003) suggests, humanism remains to haunt us. This thesis identifies this haunting in relation to the humanist ideologies evident throughout the development and deployment of somatechnologies. In what follows, I will presently critically analyse Heideggerian, Arendtian and Derridean theory of constructions of the human in order to provide an understanding of the ways in which their theoretical frameworks are interconnected with the ethical philosophy provided by Levinas. I will briefly draw on an example of prisoners to demonstrate the ways in which notions of Heideggerian essence can be problematised, before deploying this problematic notion in relation to gerontological hygiene.

Heidegger's Construction of the Human

Martin Heidegger's philosophy is complex and multifaceted, particularly concerning his meditations on the human. Several concepts, such as *Dasein*, world and worldliness, and essence comprise a large portion of his work. Ultimately, his concern rests with the question of being, that is, with ontology. He uses ontological philosophy to challenge traditional understandings of both the self and the human. That is, throughout all his philosophy are threads of his conceptualisation of who – and perhaps *what* – can(not) be considered human. His text, 'Letter on Humanism' (1998), is particularly relevant for this chapter, precisely for its summation of rationality and logos as key characteristics of human being. Further, *Being and Time* (2001) mobilises the concept of *Dasein* – or 'there-being' – a concept Heidegger was much preoccupied with throughout his academic career. It is these texts that I adopt to stage my analysis of the importance of Heideggerian philosophy in constructions of the human, as well as *Introduction to Metaphysics* (2000). That latter ultimately expounded on notions of Being, inclusive of the critical work of essence and ek-sistence.

It is critical to note that Heideggerian philosophy of the human is important for my own undertaking so that I may demonstrate various elements of his thought still in operation today. Specifically, in relation to constructions of both elderly bodies and old age as *necessarily* medicalised. As such, it is important to understand how Heidegger perceives modes of Being that demarcate hierarchies of life. Guignon (1993) traces the roots of Heidegger's interest in questions of Being, identifying Aristotle's categories of beings as a primary inspiration. Indeed, according to Frede (in Guignon 1993, p. 44), Heidegger articulates the 'historical development of Western thought [ultimately] ended in complete "forgetfulness of the question of being"'. Thus, his inquiry in questions of Being/s adopts Aristotelian metaphysical framework, if for no other reason than to contravene it. Like Aristotle, Heidegger conceptualises various incarnations of Being, which are highly intertwined with his notions of *Dasein*, world and essence.

To begin understanding Heidegger's notion of Being, I deploy the following:

> to work out the question of Being adequately, we must make an entity-the inquirer-transparent in his own Being. The very asking of this question is an entity's mode of Being; and as such it gets its essential character from what is inquired about – namely, Being. This entity which each of us is himself and which includes inquiring as one of the possibilities of its Being, we shall denote by the term "Dasein" (Heidegger 2001, p. 27).

In this passage, Heidegger makes it clear that for him, Dasein is paramount to consciousness, precisely where he states, 'the very asking of this question is an entity's mode of Being' (Heidegger 2001, p. 27). For Heidegger, as will be shown through his conception of world, an entity is incapable of understanding its own existence without conscious, rational or logical thought. Indeed, an entity must be world-forming to achieve this. In Heideggerian thought, these properties are what Derrida (2011, p. 15) might refer to as 'proper to [hu]man'. Further, Dasein is more than *just* Being; indeed, Dasein equates to "Being-in-the-world", that is, 'the

kind of being peculiar to human's existence from other modes' (Villa 1996, p. 120). In this way, "Being-in-the-world" belongs specifically to the human, where '"knowing the world" is a derivative relation: existence (that is, Being-in-the-world), not cognition, constitutes man's essential being' (Villa 1996, p. 121). Further, Blitz (1981) explains that Being-in-the-world is comprised of simply Being-in, which can be split into three distinct categories: states of mind (or disclosure of mood), understanding (or disclosure of [hu]man's ability to disclose) and discourse (or intelligibility).

Put simply, these three categories, once synthesised, mobilise an articulation of Being-in-the-world, or Dasein. "Being-in-the-world" is, of course, dependent upon the corresponding concept of world. Indeed, world and its counterparts – worldlessness, poverty in world and world-forming – begin to account for the hierarchical structure of Heidegger's thought. Importantly, the hierarchical nature of Heidegger's work can be seen in his three theses of world. He states, '[l.] the stone (material object) is worldless; [2.] the animal is poor in world; [3.] man is world-forming' (Heidegger 2001, p. 177). It is seen here that Heidegger's theses of world are relational – that is, the relation or experience of world by an entity. Further, it may be argued that Heidegger's concept of world rests with intentionality of consciousness, a notion he adopted from Husserl (Hall in Guignon 1993). In the case of the stone, Heidegger argues there is no relation other than the fact that the stone exists in the world. The stone itself has no experience, or consciousness, hence it is *worldless*. The animal experiences a *poverty of world*, precisely because its relation or its experience is argued, by Heidegger, to be one of instinct, rather than of spirit or essence, implying that animals are seen by Heidegger, as *less* conscious than humans. The final category, that of [hu]man, is described as *world-forming*, which entails 'the relation man possesses to the world by referring to the extendibility of everything that he relates to' (Heidegger 1995, p. 193).

Importantly, Heidegger states quite clearly in *Fundamental Concepts of Metaphysics* (1995, p. 192) that his conception of world 'does not entail hierarchical assessment'. However, despite his intention to claim that the animal is deprived of world, rather than unable to access world in the same way as the world-forming [hu]man, a clear hierarchical model can be found. Indeed, Heidegger writes from a humanist perspective, whereby he – perhaps unintentionally – positions animals as less capable of accessing 'the richness of all those relationships that human Dasein has at its disposal' (Heidegger 1995, p. 193). Indeed, he hierarchises the notion of consciousness, perhaps for his own ontological security, whereby animals can never reach the same level of conscious thought as that of the human. In this way, his philosophy makes assumptions about not only the possibilities and limitations of categories of Beings, but also depicts consciousness as the central characteristic of the world-forming [hu]man. That is, a notable characteristic of world-forming is what Heidegger refers to as disclosedness, or the "disclosure of Being". Villa (1995, p. 124) argues that Heidegger uses this notion of disclosedness to maintain 'that human existence … is nothing other than … the opening of a particular economy of presence, accomplished by specific historical ways of Being-in-the-world'.

The ability to disclose one's Being, from a Heideggerian lens, implies the use of language, which Heidegger is well-known for advancing as a common feature of the human ('Letter on Humanism' 1998). Hence, for Heidegger, the distinction of 'speaking' clearly demarcates a difference between the 'human' and all other entities. Language is an attribute that the animal has been consistently denied; what constitutes the animal, it seems, is its existence as an instinctual being. That is, the absence of the Absolute Horizon, which only becomes possible in a being with the ability to think of itself as having a self (Althusser 2003). In discussions of

the human's relationship to – and with – language, one must consider the notion of *humanitas*. Heidegger calls attention to this term in several of his works, such as *Being and Time* (1967) and 'Letter on Humanism' (1998), to which consideration must now turn. *Humanitas* is a term that has taken many forms throughout its history, however etymologically *humanitas* was an equivalent to the Greek *paideia*, that is, the education of man through civilisation and literature (Veyne in Giardina 1993, p. 342), or as the cultivation of humanity through 'education in letters and the arts' (Soffer 1996, p. 552). In this one is again able to see the human caesura from the animal, particularly where civilisation, in Veyne's terms, began to define *humanity*. Veyne (Giardina 1993, p. 342) states that 'humanity distinguished the civilised man from the savage who lived on what he could gather; it also distinguished the literate … from the uncouth common people and from uneducated members of the propertied class'.

Humanitas, then, can be said to define the human by whom it excludes from humanity, that is, specifically the savage – a term generally associated with the beast and far removed from conceptions of 'civilised society'. Despite the abundance of literature concerned with *humanitas*, this chapter will continue to utilise the philosophy of Martin Heidegger, specifically because he is a critical voice in conceptions of the human, particularly regarding his notions of essence, ek-sistence and world. Accordingly, this chapter will now turn to Heidegger's conception of *humanitas*, which positions the term in alignment with thinking and caring (Veyne in Giardina 1993); he described *humanitas* as 'humanism: meditating and caring, that human beings be human and not inhumane, "inhuman", that is, outside their essence' (Heidegger 1998, p. 244). The notion of essence becomes increasingly significant for Heidegger's work, despite his inability to label it as anything other than, in circular terms, essence; that is, Heidegger is incapable of providing a clear understanding of what essence is, and indeed, how humans can claim to possess it.

Not only is Heidegger's work preoccupied with the notion of essence, but also, critically, with the notion of the human. Indeed, Heidegger uses his work on essence to argue a certain definition of the human and despite claims he is anti-humanist, Heidegger's immersion within questions of Being and existence, and his theory of world – and indeed, being-in-the-world – mark an important point in the humanist tradition, that is, the caesura of man from animal. Heidegger attributes the human being to the possession of essence when he states:

> the first humanism, Roman humanism, and every kind that has emerged from that time to the present, has presupposed the most universal "essence" of the human being to be obvious. The human being is considered to be an animal rationale. This essential definition of the human being is not false, but it is conditioned by metaphysics (Heidegger 1998, p. 245-6).

The brief mention here of metaphysics is invaluable to discussions of humanism, as it is the branch of philosophy that encompasses the nature of reality; for Heidegger (2001), it stipulates the existence of absolute – quantifiable – truths about the nature of the human. Indeed, 'humanism, for Heidegger, is inherently metaphysical. But the converse, too, is true: metaphysics is by its very nature humanistic, i.e. anthropocentric' (Miles 1989, p. 433). Within this metaphysical framework, then, Heidegger is able to attribute essence to what he terms as ek-sistence, 'which is not only the ground of the possibility of reason, *ratio*, but is also that in which the essence of the human being preserves the source that determines him' (Heidegger 1998, p. 247). Heidegger further demarcates the animal when he quite specifically states that *ek-sistence* is strictly limited to the human, it is 'only of the human way "to be"' … [thus], the human body is something essentially other than an animal organism' (Heidegger 1998, p. 247). The intimation that ek-sistence is singular to the human further promotes the human as superior.

Furthering the concept of essence and its role in the construction of the human, Heidegger's seminal 'Letter on Humanism' takes the reader through several concepts, such as language and *ek-sistence*, as discussed above, to provide a fundamental framework for essence. Throughout his essay, Heidegger points towards one key notion that distinguishes the human from the animal; that is, the mind, or more specifically, the *thinking* mind. When Heidegger supposes that the humanity of the human lies in his essence, he is therefore suggesting that humanity lies in the mind, or more specifically in the *conscious* mind. Heidegger's conceptions of the human are intriguing to the say the least, and must necessarily be considered in examinations of humanism, for 'if one understands humanism in general as a concern that the human being become free for his humanity and find his worth in it, then humanism differs according to one's conception of the "freedom" and "nature" of the human being' (Heidegger 1998, p. 245). He furthers this comment by briefly outlining the trajectory of various humanisms, such as Marxist humanism, Sartrean existentialism, and Christianity. What Heidegger pinpoints here is that despite the various perspectives on both the 'freedom' and 'nature' of the human being, the one thing that remains to haunt all humanisms is that 'the *humanitas* of *homo humanus* is determined with regard to an already established interpretation of nature, history, world, and the ground of the world, that is, of beings as a whole' (Heidegger 1998, p. 245, emphasis in original).

Heidegger notes that Christianity is a form of humanism for its primary focus on *human* salvation, which once again presumes the significance of the human. However, within religious discourse there is always, obviously, the presence of a supreme and omniscient being that dictates laws, behaviours, ideals and beliefs – as is propagated by the many versions of the Christian Bible. The first major dissociation from religious humanist discourse comes in the form of Renaissance humanism, as discussed above, which can be conceptualised as

'expressive of an essential humanity unconditioned by time, place or circumstance' (Davies 2002, p. 25), and one that still exists in contemporary society as expressed through common 'appeals to "human nature" or "the human condition"' (Davies 2002, p. 25), requiring a conscious effort.

One is able to see a certain circularity within humanist discourse, then, particularly with the labelling of other species as 'animal', and more specifically the connection to 'beast'. Heidegger, for instance, positions the human as animal rationale in his writings of essence, as discussed above, however in doing so he locates the human as essentially different from the animal for its possession of rationality, and therefore, of mind. As a consequence, Heidegger positions the animal as that which exists in the realm of the absence of reason. This discursive production of the animal continues to circulate in contemporary society. Notably in Etienne Balibar and Immanuel Maurice Wallerstein's title *Race, Nation, Class: Ambiguous Identities* (1991), the notion of the humanity/animality dichotomy is raised once more in relation to degrees of humanity, which is particularly relevant to this thesis when considering who/what can be classified as human. It is possible to frame humanism as trans-historical for the fact that humanism has evolved through time, with each evolution producing a specific discourse producing the human.

The trans-historical nature of humanism is clearly articulated by Neil Badmington (2003, p. 11) when he positions humanism as a kind of phoenix for its capacity both to radically change and yet to remain the same. Lamont (1990, p. 3) states that the 'importance stems from the perennial need of human beings to find significance in their lives, to integrate their personalities around some clear, consistent, and compelling view of existence, and to seek definite and reliable methods in the solution of their problems'. Others have fervently echoed this

pretension, such as Cuvier, of whose work Denise Ferreira Da Silva (2007) provides a compelling rendition in order to mark the emergences of race. The emergence of race is a critical field of inquiry for its role in the construction of notions of the human and the resulting denial of humanity for specific bodies. Accordingly, Da Silva (2007, p. 104 states that:

> according to Cuvier, the human body owes this singular placing to its "upright position," unique movements, and the higher degree of differentiation, specialization, and complexity of its vital organs and functions but, more important, to mental processes that play no role in the emergence and preservation of the living body. "The more sophisticated" mental functions ("memory," "association of ideas," "abstraction," "reasoning," and "imagination"), Cuvier (1863) teaches, derive from modifications in those parts of the nervous system that are "more circumscribed as the animal is more perfect," that is, in man, the perfect animal.

Da Silva here is highlighting a specific conception of the human according to the philosophical discourse of the Enlightenment. Within Cuvier, too, not only does one see the presence of narcissism – through the complete disavowal of the animal form – again one can see the significance of the mental functions alluded to by various others, notably Heidegger. Consequently, Heidegger and others enforced discourses of corporeal normativity and hegemony and, perhaps inadvertently, deployed hierarchies of life; within the category of human are ideals that position specific qualities above others, such as rationality, consciousness, and physical ability (Pepperell 2009). Those who displayed an absence of these characteristics, or a diminished capacity, were often positioned as Other, nonhuman, and in some cases, inhuman (Pepperell 2009). This provided the frameworks for various types of discrimination, as was seen in the deployment of the notion of race to justify colonialism and slavery.

The emergence of race is but one factor in modern history that provides a framework for what constitutes the human. Within narratives of the construction of the human, an examination of other factors, such as gender, sexuality, disability, age, and class, must be mobilised in order to gain a somewhat informed view of how the various social, cultural and political forces in operation worked to constitute contemporary notions of what it means to be human. Furthermore, the emergence of modern science as a contributing factor to notions of the human are not only intrinsically linked to the notion of race, but also to the notion of genetically inferior bodies, which in turn saw the rise of the pseudo-science of eugenics, as was examined in Chapter 1. The late eighteenth century, again as was examined in Chapter 1, saw the proliferation – through the development of modern sciences, such as phrenology, phenotypology, biology, psychology and so on – of further classifications of the human which were either reliant upon race or on other categories of discrimination, including the feeble-minded, the disabled, the homosexual and so on.

For instance, during the Renaissance, madness moved from being one of many vices to being seen as the key human weakness (Foucault 2001). This shift towards the significance of science may be considered a primary factor in the move towards secular humanism, which emerged, as detailed earlier in this chapter, in the nineteenth century. Though science became foregrounded in this era, the fields it produced – such as phrenology – came to justify the mistreatment of certain types of human bodies. Further, scientific practice also came to dictate hegemonic discourse on what behaviours and roles these human bodies were not only allowed to undertake, or even able to undertake, but indeed what they must undertake. It was these specific undertakings that perpetuated notions of the human.

Having established an account of Heideggerian philosophy, specific to the implications for both constructing and understanding the human, this thesis now turns to an extended exposition detailing the ethical implications of that same thought. It is critical to understand that an extended account of Heidegger's thoughts on world, essence, ek-sistence, and Dasein has been important to lay the foundations for the subsequent sections on this thesis. Not merely to interrogate his philosophy through an ethical lens, but further, to draw a critical evaluation between Heidegger's work and Hannah Arendt's. As will be shown further in this chapter, Arendt's work takes certain cues from Heidegger, though only to appropriate and transcend them. At this juncture, however, it is necessary to expose the ethical implications of Heideggerian philosophy, particularly for the relation it holds today in constructions of elderly bodies.

The ethical implications of Heideggerian philosophy

Hornblum (1998) details accounts of prisoners on death row at Holmesburg whose convictions were eventually overturned and the men released after participating in experiments during the 1970s. The overturning of the sentence is indicative of sovereign power, whereby rights can be bestowed and denied at will. In the same way that laboratory animals have consistently been produced as commodities, the prisoners in question here can be acknowledged in the same way. Specifically, these prisoners can be examined as embodying the Derridean (in Cadava, Connor & Nancy 1991, p. 122) 'sacrificial structure'. Further, the Levinasian model of ethics whereby the difference between human and nonhuman came to be a capacity to overcome biological drives, is also at stake in this example. The prisoners allowed themselves to be experimented upon, at times, for the greater good of humanity (Hornblum 1998), which reveals a capacity for utilitarian ethics.

However, within this paradigm, one can see the unequal relations of biopolitical power that govern not only the penal system, but also the potential access to the category of the human. The pardon that some of these men received, however, cannot be an ethical response to the huge risks to personal safety that they underwent; rather, it must be acknowledged that these men transitioned from nonhuman to human through an unethical and violent system of penal commodification and exploitation. No longer recognised by their inmate number, but nonetheless, highly codified as a certain type of human upon release, placed under the overbearing power of multiple institutions that are no less subjugating than that of the American penal system.

It is critical to acknowledge the multitude of ways in which humanity can be ascertained or negated; that is, these prisoners were bestowed human status through the non-consensual process of sacrificing their health, whereas many elderly individuals lose their human status through the incremental natural decline in corporeal health. I argue that it is not necessarily the level of health that ascertains the status of human, it is merely a by-product of normative human categories. As with the case of prisoners, I argue that those people experiencing severe decline or departure from normative embodiments of health can also be configured as outlaw, for their resistance to hegemonic encoding. In this way, the coding as outlaw positions certain forms of the elderly as unable to act and as such, these individuals suffer the opposite of the prisoner; that is, I argue, their essence and humanity is questioned and systematically erased. The stark contrast between modes of human acquisition and exclusion highlights the significance of the conceptual framework of the human as the thinking, rational animal.

Indeed, in his seminal work 'Letter on Humanism' (1998), Heidegger constructs the notion that the human is literally the thinking animal, claiming that 'language is the house of being'

(Heidegger 1998, p. 239). This definition is problematic for various reasons, not least of all that Heidegger firmly relates this to verbal language, which Eurocentrically negates the semiotic languages found in ancient cave drawings and other pictographic communication. Also, significantly, because cultures dependent primarily on orality – such as Aboriginal culture – have historically been denied human status; further the implications here of non-verbal communication, such as Braille and sign language are exceptionally problematic and highlight the unethical ideology of some of Heidegger's theories. The problematic nature of denying speaking subjects the status of human, when this is considered a foundational aspect of the human, can be further investigated if one examines recent occurrences of illegal and unethical human experimentation, such as in the case of three Israeli doctors, who, in 2006, carried out thousands of illegal human experiments, primarily on elderly and mentally disabled patients (Quetteville 2006).

Further to the denial of language, the notion of life imprisonment must be acknowledged. It can be understood from Heidegger's theory of Dasein that perhaps it is a quality not bound by essence, but rather, one bound by law. That is, Being-in-the-world, according to Heidegger (2000), can never mean Being-alongside-the world. In the case of imprisonment, I argue that reduced and limited *access to the world* prohibits prisoners from remaining as world-forming entities in a Heideggerian sense. That is, Heidegger's theory can be understood as one of hierarchies, whereby *world* is less a naturally occurring phenomenon than it is a sociocultural construction. Hornblum's (1998) prisoners participated in various institutionally-sanctioned unethical experiments, including locking a number of male prisoners in a room with no exit, whilst operating on high levels of LSD (Hornblum 1998). While Hornblum notes that these prisoners were not held accountable for their actions once the experiment ended, I argue that this ethical raises questions about the forced removal of consent. If prisoners are *poor in world*,

according to a Heideggerian frame, then it follows that notions of consent – which depend upon the capacity for rational and logical thought – are not seen as necessary. Further, consent may be seen as impossible in these prison contexts through a Heideggerian frame, precisely because the prisoner is *poor in world*, paramount to an entity akin to an instinct-driven animal. In this way, similarities can be drawn between those prisoners and the medicalised elderly individuals involved in the experiments outlined above.

While the experiments were not based around anti-aging, the use of elderly individuals – and those deemed mentally disabled – is critical to acknowledge, for the very reason that these doctors were granted access through a geriatric facility. Quetteville (2006) reports that several of the subjects died during the undertaking of these experiments, including a Nazi death camp survivor; further, the deaths went unreported, which asserts the doctors positioning of those subjects as far less than human, and existing outside the realm of ethics. The doctors claimed the patients provided consent, however it was discovered that only 5 out of 40 known patients signed consent forms (Quetteville 2006). The conditions under which these forms were signed must also be scrutinised, where it can be ascertained that informed consent was indeed not provided. As with the prisoners in Hornblum's (1998) text, the elderly subjects involved in this experiment were forcibly removed from the realm of the human, based on biological age. Heideggerian theories can be used to explain the breach of ethics in this case; that is, on the basis that these individuals no longer fit the stringent criteria of human being through perceived poverty in world, declining *Dasein* and essence.

It is troubling to note that historically there have been various cases of research bypassing or breaching ethics in order to achieve results. Theorists such as Resnik (1998), however, question whether this is necessarily a *bad* thing. Indeed, he suggests that

perhaps informed consent is best viewed as an ideal that we should *strive to achieve but not as an absolute rule*. If we believe that we should never deviate from this ideal, then we will severely limit research on human beings. Scientific progress will slow down and many practical problems will not be solved. If we believe that we should not slow down research and that we need to solve these practical problems, then we face a difficult choice: when should we settle for less than the ideal? I believe that we can only answer this question by exploring the benefits and risks of human subjects research on a case-by-case basis (Resnik 1998, p. 121, emphasis added).

He makes this argument specifically as a response to progress made by experiments such as those undertaken by Stanley Milgram[37] and various others, where their deliberate ethical violations resulted in the utilitarian ideology of the end justifying the means.

I argue against this framework, precisely because it seems apologist in nature, and excuses the blatant disavowal of the subjects who are necessarily subjugated and devalued in the process. Specifically, in the case of the geriatric facility of Kaplan Hospital, where human experimentation took place, the facility acts as a half-way house for patients recovering from surgeries (American Friends of the Kaplan Medical Center 2016), most of whom are heavily medicated to better facilitate a smooth recovery. If this is the case, then it can be argued that even a fully conscious person in the prime of their youth would be unable to provide *informed*

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[37] Stanley Milgram is famously known for his psychological obedience experiments, which emerged as a result of the building of gas chambers, the guarding of death camps and other atrocities of World War II. Milgram's argument was essentially that 'these inhumane policies may have originated in the mind of a single person, but they could only be carried out on a massive scale if a very large number of persons obeyed orders' (Milgram 1963, p. 371). The experiment tested the conditions under which a person would cease to obey. As such, the participants would knowingly administer 'increasingly more severe punishment to a victim in the context of a learning experiment. Punishment is administered by means of a shock generator with 30 graded switches ranging from Slight Shock to Danger: Severe Shock' (Milgram 1963, p. 371). It is specifically the omission of the consent of the experiments 'victims' in these experiments that have constructed them as unethical. While Milgram's experiments have illuminated human behavioural psychology, the advances in this discipline came at an ethical cost.

consent – or even *adequate* consent, as Resnik (1998) terms it – specifically because of the amount of medication in their body. Quetteville (2006) further states that most of the consent was provided through means of a thumbprint, which, in this context, necessarily demands questions surrounding the consciousness of the test subjects at the time of thumbprint consent.

Moreover, these individuals are reduced to nothing more than their corporeal form, disavowing their autonomy, desires and choice. In Heideggerian philosophy, this can be explained again as though the residents are poor in world, or *deprived* of world, specifically because of their age. At times, unable to speak or control their bodies, these residents are thus relegated to the care of those deemed world-forming, or those entities able to disclose. It is my position that the framework established by Heidegger – that language belongs to the human, human existence lies in *Dasein*, and ones Being-in-the-world rests in conscious intentionality – can be seen to inform the treatment seen in this case study. As such, the hierarchical structure of Heideggerian conceptions of world must be viewed as unethical, precisely because it allows gaps or revisions as to who shall be considered human.

Furthermore, questions of the ethical use of biometric technologies can also be raised here, where the codification of a person's unique biomarkers externalises part of them as a form of metadata, able to be used by institutions and governmental bodies without the need for consent (Pugliese 2008, 2011). Further still, the age of the subjects must also be considered, where nursing staff at the facility questioned whether the patients were capable of giving informed consent at all, with many declining into senility and dementia (Quetteville 2016). This example, and those detailed earlier in this chapter, are critical to mark in terms of ethics, but also in terms of the ways in which the human category is constructed and enforced. Specifically, the ways in which excluding certain individuals is justified, albeit unethically, by medical professionals

and physicians. Indeed, notions of the human are constructed in various ways, as was seen through notions of work and action, but this thesis now focusses on the notion of consciousness as pivotal for the human category.

The construction of the (non)human in this manner must be acknowledged as unethical from a Levinasian perspective, where the disavowal of difference justifies a rejection of the Other and the infinite responsibility espoused by Levinas is not only by-passed, but completely overturned. Aspects of Heideggerian philosophy, as has been seen previously in this chapter as one based on hierarchical structures and exclusionary dispositifs, must also be considered *unethical* philosophy and inherently violent. It is important to point to the notion of violence[38] here and the certain conceptualisation of it that Levinas deploys. Indeed, he states that

> violence does not consist so much in injuring and annihilating persons as in interrupting their continuity, making them play roles in which they no longer recognise themselves, making them betray not only commitments but their own substance, making them carry out actions that will destroy every possibility for action
> (Levinas 1979, p. 21)

Through this manifestation of the concept of violence, certain unethical dimensions of Heidegger's philosophy become apparent. Indeed, Levinas deploys the term *allergic* in relation to Heideggerian theory, particularly that surrounding the notion of Being, where he acknowledges drawing inspiration from his work in order to stage a departure (Derrida 1978, p. 181). Importantly, by deploying the term allergy, Levinas undermines Heidegger's theories and exposes them as problematic (Derrida 1978). Critical to mark here are the contexts in which these philosophers wrote – some aspects of Heidegger's work were at least indirectly influenced by a Nazi regime (Sheehan 1988; Farías, Margolis and Rockmore 1991; Rockmore

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[38] This thesis will explore Levinas' concept of violence further through a connection to Arendt's notions of work, labour and action.

1997), and Levinasian philosophy was critically influenced by Jewish subjugation experienced at the height of World War II.

As I discuss in Chapter 4 of this thesis, the Levinasian concept of the face, in specific relation to human experimentation becomes exceptionally critical, for it is this denial of face that is not only violent and unethical, but ultimately accounts for the discursive construction of the aging patient as nonhuman through illegitimate medical practice that negated the right to informed consent. Face and consent are not the only factors that must be considered here, for as this chapter will presently outline, Arendt notes that the ability to work, act and labour are critical factors in deciding who/what shall be granted human status and human rights. It is to Arendt's critical work that this thesis will now turn, specifically examining the treatment of human test subjects in relation to their proven ability for labour, work and action and how this necessarily demands they be conceptualised as human. While it has been noted that Arendt's aim was to remind people of both the limits and the possibilities of the human condition (Canovan 1992, p. 103), her consideration of work, labour and action necessarily constructs a schemata of what can be seen as human, and importantly, as what *must not* be seen as human.

It is action, or more precisely, *political* action that characterises the human. Indeed, as Villa (1995, p. 17) states, 'to forget the distinctiveness and value of action is tantamount, Arendt argues, to forgetting what makes us human'. Hence, the distinction between labour, work and action becomes vital for an analysis not only in the construction of the human, but also the negation of rights for specific bodies. Furthermore, the continued negation of human status to these prisoners once again elucidates the experimentation as unethical, which will be explored through the Levinasian concept of violence; specifically, the dispossession of their bodies through medical research as a violent articulation of what constitutes the human.

Arendt's Characteristics of the Human

Contemporary scholars, such as Margaret Canovan (1992), Dana Villa (1995, 2000) and Peter Baehr (2000) among others, position Hannah Arendt's political thought as some of the most important in recent Western philosophy. Arendt mobilises her analysis of political action through an appropriation of Aristotle's notions of *praxis* and *poiēsis*; it is important to understand this before deploying an examination of the ways her philosophy operates in relation to old age and certain forms of elderly people. These concepts are critical in an undertaking of Arendtian thought, precisely because poiēsis and praxis demarcate differing characteristics of the human condition. Poiēsis points to activities deemed instrumental and those where, through labouring, the intention is to produce an external end (Hayden in Hayden 2014). The implication here is that poiēsis refers to an activity of *necessity*, where praxis describes action performed for its own sake. In this way, praxis infers a type of *freedom* (Hayden in Hayden 2014). In simplified terms, praxis is paramount to *acting* whereas poiēsis equates to *making* (Baehr 2000). This is a useful framework to mobilise the following examination, precisely because it is the disjuncture between these terms that delineates between human and nonhuman animals.

The demarcation between these two positions can be seen as foundational in Arendt's conceptualisation of political action, plurality, and thus, of a political life. Furthermore, Arendt, in *Between Past and Future* (1968, p. 146), meaningfully connects freedom and politics, where she states that freedom 'is not only one among the many problems and phenomena of the political realm properly speaking, such as justice, or power, or equality'. Freedom, Arendt argues, gives meaning to political life, precisely because the '*raison d'etre* of politics is freedom, and its field of experience is action' (Arendt 1969, p. 146). From this, it can be

gleaned that freedom, politics and action intertwine in a complex system working towards characteristics of the human, particularly in that Arendt frames political life as meaningless without freedom. Praxis, then, the art of acting, is an essential concept underpinning notions of the human. Importantly, then, it is poiēsis that marks the condition of those deemed not-quite-human, or wholly nonhuman.

A note should also be made regarding Arendt's philosophy more broadly: her works are conceptually interconnected, with the line of inquiry left unfinished in *Totalitarianism* (1985) being picked up once more in *The Human Condition* (1998). Canovan (1992, p. 103) remarks that

> just as totalitarian terror, in [Arendt's] view, strips human beings of their plurality and spontaneity in order to reduce them to an animal species, so she argues in *The Human Condition* that as labouring values have risen to prominence, something very similar has been happening painlessly in all modern societies.

It is this 'painless' occurrence that comes to be at stake for constructions of medicalised elderly bodies, particularly in the attempted ways old age is being erased in contemporary Western societies, such as the U.S. and Australia. The following section of the thesis will elaborate on this in specific terms of *animal laborans*, to expose the ways elderly citizens are constructed as largely outside the realm of Arendt's human framework.

The medicalised elderly as *animal laborans*

Before I proceed further, it is crucial to note that various aspects of Arendt's work can be heavily connected to that of Heidegger. Where Heidegger focuses primarily on *animal rationale* to demarcate the human and animal, in terms of essence, ek-sistence and world, Arendt's own philosophy can be interpreted as another articulation of these same ideas, with her focus resting on the concepts of labour, work and action (Arendt 1998), which this thesis

presently traces. One can see in Arendt's work several theoretical alliances with the work of Martin Heidegger, whose political alignment with the Nazis during World War II saw the downward trajectory of his academic career. Arendt's relationship with Martin Heidegger must be acknowledged for two immediate reasons.

Firstly, despite vastly different political allegiances – Arendt was Jewish, Heidegger was anti-Semitic and a strong Nazi supporter – the two began a relationship spanning half a century (Villa 1995; Ettinger 1997) and throughout Arendt's work there exist traces of that relationship – through either validation, rejection, or removal from Heidegger's theoretical perspectives (Hinchman and Hinchman 1984). Secondly, the influence Heidegger has had on Arendt's work can be seen in her development of labour as a potential (though ultimately flawed) characteristic of the human, particularly the mirroring of labour with Heidegger's own concept of world, which will be examined later in this chapter. As such, rather than positioning Arendtian theory as mimicry of Heidegger's own ideas, it is critical to acknowledge that Arendt often appropriated Heidegger's concepts to problematise his constructions of *Dasein*, publicness and disclosedness.

Beginning in the late-eighteenth century and early-nineteenth century – particularly due to industrialisation – the notion of labour as expressive of humanity emerged as a concept of philosophical inquiry. I turn now to Hannah Arendt, whose theoretical framework of political thought is positioned as some of the most crucial in recent scholarship. Particularly for this chapter, I mobilise an inquiry into her concepts of labour, work and action, arguing that Arendt's conceptualisation of action comes to constitute the human, or, dichotomously, the non-human. Hannah Arendt's discussion of this notion appeared in her seminal piece *The Human Condition* (1998), which positions the human being as an acting creature; Arendt notes

the ability of the human to start 'trains of events' (Canovan in Arendt 1998: xvi), thereby highlighting the force of labour as a defining, but flawed characteristic of the human 'condition'. It is firstly critical to address why Arendt focused on these three concepts with such rigour, to understand how she could mobilise a framework not only for the human, but also for *conditions* of the human.

Villa (1995) details the development of Arendt's political theory, which is often read as response to Heideggerian notions of *Dasein* and Being-in-the-world. While their theoretical frameworks fail to align, the Heideggerian influence upon Arendtian theory is significant. Indeed, Arendt engaged with Heidegger's texts in a double movement of dispelling his work, and simultaneously mobilising a revision of *praxis* and *poiēsis,* as outlined above. In this way, Arendt was, first and foremost influenced by Aristotle; indeed, her theory of action is framed by critical appropriations of Aristotelian conceptions of political philosophy (Villa 1996). Further, Arendt reframes Nietzschean and Marxian theories that demarcated 'the classical hierarchy of human activities … [and] the component parts of the active life – labour, work, and action' (Villa 1996, p. 17). It is for this reason that Arendt chose to focus on these three aspects of the human condition, and further, to deconstruct each category so that she could mobilise a definitive understanding of the human.

It is through an understanding of these concepts that one is able to ascertain how old age can be mobilised not only as a disease-state, but, further, as inherently problematic. For Arendt, the capacity for labour became almost synonymous with human worth, and those who were unable to participate adequately within the confines of their society were effectively removed from 'free' society and relocated to the asylum (Arendt 1998; Foucault 2001). The capacity to labour

was both constitutive of the human *and* the beast, or as Da Silva (2007) terms, the subaltern. Indeed,

> the *animal laborans*[39], driven by the needs of its body, does not use this body freely as *homo faber*[40] uses his hands, his primordial tools, which is why Plato suggested that labourers and slaves were not only subject to necessity and incapable of freedom but also unable to rule the "animal" part within them (Arendt 1998, p. 118, emphasis in original).

What Arendt stipulates here is the absence of freedom, which this thesis has explored in Chapter 1, as constitutive of labour. As such, Arendt describes the *animal laborans* as "worldless" labourer (Villa 1996) and thus, 'designates [them as] a creature bereft of the specific reality necessary for a "truly human life"' (Villa 1996, p. 189). It is through this disavowal of the 'truly human life' that Arendt justifies her distinction between labour and her subsequent concept of work. Further to labour, Arendt proposed two other contributing factors to the 'human condition'; that is, work – as mentioned above – and action. Despite the force of labour being attributable to both human and beast, it is potentially both work and action – two terms that this chapter will elucidate further – that set the human apart from other species.

Importantly, Arendt draws a significant difference between the human condition and human nature, where she denotes the human condition as forming through 'whatever enters the human world of its own accord or is drawn into it by human effort' (Arendt 1998, p. 9). Firstly, one must understand how Arendt conceptualises human *nature*; in *The Origins of Totalitarianism* (1973), Arendt argues that human nature had been fundamentally altered by the events taking place under regimes such as Nazi Germany and Stalinist Russia. Indeed, Arendt examined the

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[39] The term *animal laborans* translates to literally mean 'labouring animal'

[40] The term *homo faber* is Latin for 'Man the Creator', and was articulated by Max Scheler, who refers to it as humans controlling the environment through tools

concentration camps as that which aimed to transform the very *nature* of the human (Arendt 1973). Nature, in an Arendtian framework, is problematic precisely because she saw human being as 'characterised by … openness and plurality" (Canovan 1992, p. 104), unlike other creatures.

Arendt espoused this critical perspective of the human by her influence of Heideggerian theories, such as essence. Indeed, Arendt 'insisted that human beings do not *have* an "essence" in the sense that other things do. Their "nature" cannot be separated from the conditions of their lives and the way in which they appear to one another' (Hinchman & Hinchman 1984, p. 184). Arendt clearly diminishes the significance – indeed, the *existence* – of essence, thereby allowing for another reconceptualization of what precisely constitutes the human being – and importantly, what is expelled from that category entirely. Indeed, as Canovan (1992, p. 105) tells us, 'this contrast between dehumanised "species-being" and plural humanity is connected with her sense of an inherent tension between "nature" on the one hand and being "human" on the other'. Despite Arendt's (1998) fervent persistence that the human condition and human nature are distinct categories, re-analysis of both the human condition and human nature elucidates a clear link.

That is, how is it possible for the 'nature' of the human to exist as flexible and malleable without affecting the 'condition' of the human? It is possible to contextualise the human condition, then, as formed through human nature, and if this is acceptable practice, then one must acknowledge the unstable nature of the human condition, and subsequently, the human. Increasingly, due to this instability, it becomes difficult to define the human, which is perhaps why, where others have focussed on higher brain function and the possession (or not) of reason, Arendt deals with 'those activities that traditionally, as well as according to current opinion,

are within the range of every human being' (1998, p. 5). Thus, Arendt has traversed the theoretical path towards labour, work and action and, by default, reconstituted an essentialised notion of the human.

Further to the notion of labour, Arendt stipulates work and action as fundamental to the human condition. At the outset of *The Human Condition* (1998), one can see similarities to, or perhaps influences from, Heidegger's work, as outlined above. Arendt begins to make distinctions between labour, work, and action, however in doing so, she positions 'the human condition of labour [as] life itself ... the human condition of work [as] worldliness ... [and action] corresponds to the human condition of plurality, to the fact that men, not Man, live on earth and inhabit the world' (Arendt 1998, p. 7). Further, her notion of action, as will be examined, relates closely to that of speech; the two become intertwined in that speechless action is, according to Arendt, nothing more than robotic movement (Arendt 1998). Further, 'it is this capacity of speech to raise human beings … above life and its needs to the level of judgment' (Villa 1996, p. 31). Arendt also claims that 'wherever the relevance of speech is at stake, matters become political by definition, for speech is what makes man a political animal' (Arendt 1998, p. 3). It is speech that Heidegger tends to emphasise in his work, for its relation to rationality.

Hence, Arendt's very mention of the term 'worldliness' is reminiscent of Heidegger's work, particularly in its relation to the plurality of action, which insinuates the capacity for self-reflection of the human – that which constitutes what Althusser notes as Absolute Horizon in the human. Arendt moves on to describe the worldlessness of the labourer and the slave, which Heidegger proposes is essential to notions of the human. Thus, Arendt not only equates the slave – who, in her context, primarily consisted of African Americans – to animal, but also

further demarcates the slave from the realm of the human. Moreover, Arendt's implication of worldliness to the human condition denies animals the right to the same world as humans, such as is the outcome of Heidegger's essay 'The Animal is Poor in World' (Heidegger in Calarco and Atterton 2004). Arendt's notion of labour is informed by Marx and Althusser, who state that 'labour is the essence of man' (Althusser 2002, p. 250), and furthermore, that 'Subject = Man = Labour. The essence of Man is Labour. Labour is nothing other than the act of objectification of the Essential Forces of Man in his products' (Althusser 2002, p. 250). In this view, the distinction between work and labour is diminished, if not erased, and places a high priority on the products that man creates. While informed by Marxian theory, Arendt's conception of labour also departs considerably from a number of its key concepts. It can be argued that Marx and Althusser present a much more egalitarian view of the human, whereas Arendt clearly demarcates the slave from the human through her distinction between labour and work, which will be discussed presently. Indeed, for Arendt, the characteristic of labour fails to qualify as a wholly human activity (1998), rather, it comes to be understood as a 'pre-human' (Villa 1996) characteristic.

Arendt's notion of work can be conceptualised as existing almost parallel to the notion of labour, with one notable distinction: that of who/what performs a task. Where *animal laborans* was identified as incapable of freely using its body, it was the ability – and indeed the capacity – to create that constitutes *homo faber*. Through the concept of fabrication, Arendt further marks specific bodies as *potentially* human, and consequently others as *potentially* non-human. Fabrication, Arendt notes, is inherently violating and violent due to its destructive nature, and it is specifically *homo faber* that is responsible for this violence (Arendt 1998, p. 139). The distinction between work and labour, then, comes to exist within the notion that *animal laborans* nourish life while remaining 'slave and servant of nature and the earth', whereas 'only

homo faber conducts himself as lord and master of the whole earth' (Arendt 1998, p. 139). Inherent in work, too, is the quality of 'making', where the thing being fabricated is an end product. While labour can be said to also make things in the world, Arendt notes the impermanence of labour work – the fact that, to use Arendt's example, tilling soil needs to be continuously repeated in order for some result, or end, to take place – and the stark difference inherent in fabrication. That is, that the fabricated product produces an end where the process need not be repeated, unlike that of tilling soil.

Further to this, the crux of the distinction between work and labour is within the fact that fabrication, and by virtue, work, has a definitive beginning and end. Arendt notes this in relation to making, where she states that, 'in the process of making … the end is beyond doubt: it has come when an entirely new thing with enough durability to remain in the world as an independent entity has been added to the human artifice' (1998, p. 143). It is this capacity of *homo faber* – to the exclusion of *animal laborans* – to fabricate and 'make' that distinguish between work and labour. Furthermore, 'for Arendt, the political action and speech of citizens are, as Aristotle claimed, paradigmatic, self-contained activities. They are distinctively or fully human, whereas labor and work fall short' (Villa 1996, p. 28). Arendt's categorisation of work in this way further removes African Americans slaves, among other bodies, from the realm of the human. Finally, one must consider Arendt's third pivotal aspect of the human; that of action, which is concerned less with physicality and more with initiative and speech. Where previously Arendt had removed rationality from her deliberations of the human question, she now actively intervenes in rationality through her conception of [political] action.

Further, action is concerned with the ability to speak and to distinguish oneself from a 'mere bodily existence' (Arendt 1998, p. 176). Arendt notes that communication is not a strictly

human capacity, however according to her, 'only man can … distinguish himself, and only he can communicate himself and not merely something—thirst or hunger, affection or hostility or fear. In man, otherness, which he shares with everything that is, and distinctness, which he shares with everything alive, become uniqueness' (Arendt 1998, p. 176). Moreover, Arendt's theory of action 'recovers the dimension of shared purpose that Aristotle had claimed was central to the formation of a *political* association' (Villa 1996, p. 7). In conjunction with speech, we see the concept of plurality emerge here, where the ability to distinguish oneself from something else often lead to rational thought.

However, Arendt's work is not so specific; instead, she points to speech and action, which, as discussed above, rests with the notions of initiative and judgement. In fact, 'to act, in its most general sense, means to take an initiative, to begin (as the Greek word *archein*, "to begin", "to lead", and eventually "to rule", indicates), to set something into motion (which is the original meaning of the Latin *agere*)' (Arendt 1998, p. 177). Arendt also makes particular note of the connection between speech and action, denoting speechless action as little more than robotic movement (Arendt 1998, p. 178), for most acts are performed in the manner of speech (Arendt 1998); what Arendt means here is that it is the ability to verbally disclose actions, intentions, thoughts, and feelings that denotes humanity. Indeed, she argues that,

> In acting and speaking, men show who they are, reveal actively their unique personal
> identities and thus make their appearance in the human world, while their physical
> identities appear without any activity of their own in the unique shape of the body
> and sound of the voice. This disclosure of "who" in contradistinction to "what"
> somebody is—his qualities, gifts, talents, and shortcomings, which he may display
> or hide—is implicit in everything somebody says and does (Arendt 1998, p. 179).

Within this discourse of action, one must of course acknowledge the presence of agency, for those who are incapable of action must forfeit the capacity for agency; that is, the ability to act

in the world. Once again it is possible to find connection between Arendt and Heidegger; where Arendt exemplifies action, Heidegger specifies world. In both cases, however, it can be argued that the primary goal is to define *man*, or more accurately, *human*, which Arendt describes as a 'philosophic impossibility' (Arendt 1998, p. 181) because of the complex discursive relationship between *who* and *what*. Arendt notes that the human must be conceptualised as a '*who'*, but that in aiming for the '*who'*, we inevitably draw upon the *'what'*, thereby failing to denote specifically what it means to be human.

Despite this philosophical impossibility, Arendt nonetheless attempts this, pointing to both affairs – that is, in the context of day-to-day activities – and relationships as specifically human for the fact that they are the outcome of action. Through the verbal disclosure of action, Arendt argues that narratives begin to form, such as history, however it is only through the capacity of reflection that the desire for narratives is able to coalesce. Once again it is possible to see the connection to Althusser's (2002) notion of the Absolute Horizon. Furthermore, this same notion informs Heidegger's theory of world, which may be interpreted as running parallel with Arendt's concept of action. Moreover, Arendt argues that action is impossible without the presence of others; in fact, it is isolation that deprives one of the ability to act (Arendt 1998, p. 188). This notion can be attributed to the absence of presence by another being, which is reminiscent of the age-old philosophical question, 'Does a tree fall in the forest if nobody is there to bear witness?' According to Arendt, it matters not if a person is acting, it only matters or is seen as significant if that person is able to disclose this action to a surrounding human, which furthers the humanistic doctrine that states that the human lies at the centre of the universe. Further to Arendt's notion of the relationships embedded within a theory of action, Althusser (2002) comments on this through his reflection on the notion of essence, where he states that, 'the essence of Man is no *abstraction* inherent in the isolated *individual*. In its

reality, it is the *ensemble of social relations*' (254). Althusser here connects Arendt to Heidegger once more, articulating that action forms part of human essence – and consequently, the human as a whole – through the experience and disclosure of social relations.

Arendt's theoretical framework is crucial for the primary concern of this thesis, which thus far has aimed at detailing the historical construction of both the non- and the human as distinct categories. The notions of work, labour and action allow the human category to be mobilised in specific ways in relation to certain bodies; indeed, these notions are predicated on difference and prejudice, deploying an articulation of power that ultimately allows the production of certain bodies as human. Arendt (1998, p. 40) cogently states that 'society expects from each of its members a certain kind of behaviour, imposing innumerable and various rules, all of which tend to "normalize" its members, to make them behave, to exclude spontaneous action or outstanding achievement. I argue this is evident in the manifold ways elderly subjects are not only constructed, but also regulated and treated. Critically, this simultaneously – and necessarily – produces the body of the nonhuman.

It is important to note that for this thesis to progress to examine the treatment of both human and nonhuman subjects in discourses of ethics, these notions of who and what shall be deemed human has required substantial examination. Arendt's notion of action as a defining feature of the human is crucial for this thesis in relation to the examination of ethical relations between human and nonhuman entities, particularly regarding the capacity of disclosure through language. In specific relation to examinations of somatechnologies aimed towards medicalised elderly individuals, Arendt's notion of labour is directly applicable to the ways these bodies are produced as diseased through medical discourse. The following section of this chapter will use Arendt's framework of action, labour and work as the primary characteristics of the human

category to further elucidate both the historical and contemporary justification of questionable treatment of elderly bodies in the development of somatechnologies for the 'cure' of old age as 'disease.'

The crux of Arendt's thoughts on political action is precisely the notion of civic engagement and the ability of the citizen to participate in political affairs. Arendt emphasises the role of political action – that is, politics *is* action – as the qualifying mode of human-ness. Indeed, Arendt notes speech as the primary mode of action, hence politics and speech come to resemble the human. Furthermore, the connection of Arendt's notion of action to medicalised elderly bodies becomes even more critical when placed in relation to the Heideggerian notion of disclosure. In Heidegger's conception of world, he proposes that it is only within the capacity of the human to experience a rock as a rock, and indeed the world as a world (Calarco and Atterton 2004). To experience rock *as* rock, or world *as* world, however, one must be in possession of the ability to disclose; disclose the rock as rock, disclose the world as world, disclose expression, thought, feeling and a whole range of other traditionally human capacities. In a Derridean framework, one can suggest these qualities are what are 'proper to man', however at this juncture it becomes critical to acknowledge the relationship, and indeed the *connection* between the human and the non-human, or as Derrida remarks, the beast. Further, it is critical to acknowledge the connection between the beast and the sovereign to establish the implications for the human.

Derrida's conceptualisation of the human will be examined shortly, however, this thesis must firstly engage with the ways in which the aging patient has been constructed as incapable of work and action, in an Arendtian lens, thus existing outside of the realm of ethical treatment. I stage this short analysis through Levinas's notion of the impossibility of possession. Levinas

interrogates this notion by deploying the term 'dispossession' as a form of donation; specifically, in relation to language and dwelling, as will be examined presently. In direct opposition to Heideggerian philosophy, which articulated language as the house of being and an inherently human quality, Levinas reconceptualises this quality as that which, in conjunction with dwelling, 'exemplifies how the self begins in hospitality, and recognises the other in a way that amounts to a "primordial dispossession, a first donation" (Levinas 1979, p. 173)' (Hand 2009, p. 41). In relation to gerontological hygiene, this notion of possession becomes significant, specifically for the erasure of ethics involved in the quest to possess the Other. This erasure of ethics can be understood through Arendt's conception of both *homo faber* and *animal laborans* as briefly discussed earlier in this thesis.

In specific relation to phenomenology, Levinas in *Otherwise than Being* (1981) deploys the notion of finite freedom, which he positions as accompanying essence and will. More precisely, Levinas examines the notion of *free* will and questions how a will can be partially free; indeed, *if* a will can be partially free. He states that 'the idea of a responsibility *prior* to freedom and the other such as it shows itself in responsibility for another, enables us to confer an irreducible meaning to this notion, without attacking the dignity of freedom which is thus conceived in finitude' (Levinas 1981, p. 123, emphasis added). What is significant here is the *a priori* of responsibility towards the other inherent within Levinas' examination here. It is our infinite responsibility that results in the finitude of our freedom and the 'will', which then, can be seen as always-already in a limited field on negotiation between I and the Other. The crux of Levinas' argument here is that each of us is dependent upon an exterior entity for our freedom, in a system he names as gratuity (Levinas 1981). Indeed, Levinas states that,

> Freedom in the genuine sense can be only a contestation of this book-keeping by a
>
> gratuity. This gratuity could be the absolute *distraction* of a play without

consequences, without traces or memories, of a pure pardon. Or, it could be a responsibility for another and expiation (Levinas 1981, p. 125).

Levinas is not claiming freedom to be an illusion, indeed his proposition here is that freedom – however finite it may be – rests in ethics, that is, in the infinite responsibility towards the Other. Further to this notion, Levinas frames freedom in terms of corporeality, where 'freedom is presented here as one of the possibilities of the primordial equivocation that plays in the autochthonous life. The existence of this equivocation is the body' (1979, p. 164).

A pertinent, yet brief, example for this thesis is that of the abuses of elderly patients receiving home care in England. During a 2011 inquiry into elder abuse, the Equality and Human Rights Commission (EHRC), researcher Liz Speed found an alarming set of statistics surrounding ethical violence and the negation of basic human rights. These included, lack of support with food and drink, physical abuse, neglect of personal care and ignoring the patient, financial abuse and theft, lack of control and flexibility, and lack of personal sensitivity and privacy (Speed 2011). The EHRC claim these incidences are isolated and not widespread, however, they also remark that a lot of home care recipients refused to participate in the inquiry, for 'fear of repercussions' (Speed 2011, p. 21). Similarly, in Australia in 2017, the Australian Law Reform Commission published a national response to inquiries into Elder Abuse, with much the same findings (*Elder Abuse—A National Legal Response*). Constructing certain forms of elderly people in this way, as *animal laborans*, ultimately facilitates the process of gerontological hygiene. That is, the disavowal of language and the construction of these bodies as disposable – understood here in a Derridean manner – deploys medicalised elderly bodies as a form of nonhuman, and thus, according to Levinas, beyond ethics. Hence, I argue that in this instance, the bodies of these elderly individuals were violently reconfigured into objects, analogous to the laboratory animal.

Derrida + The Human

As suggested earlier in this chapter, not only is the animal or the beast excluded from humanity, but so too is the sovereign. Through a connection to the beast, Derrida marks the sovereign not only as wolf, but also in terms of mythology, where the German God of war, Odin Wotan, was mythically able to transform, at will, into a wild animal, a bird, fish, or serpent. Derrida then goes on to think through the becoming-beast, and the becoming-animal of a sovereign who is above all a war chief and is determined as sovereign or as animal faced with the enemy (Derrida 2011). Exclusion from humanity, then, need not represent lack of power, but can constitute absolute power, which humans, as existing between beast and sovereign, may never obtain. For as Derrida posits, 'there are gods and there are beasts, there is, there is only, the theo-zoological, and in the theo-anthropo-zoological, man is caught, evanescent, disappearing, at the very most a simple mediation, a hyphen between the sovereign and the beast, between God and cattle' (Derrida 2011, p. 13). It can be seen, then, that not only is the savage excluded from *humanitas*, but so too, necessarily, is the sovereign but in a radically different manner in terms of relations of power.

While many assume that the label of beast is a method of reduction – and this can indeed be the case, as this thesis will currently detail – it is necessary to bring forth the Derridean notion, as briefly addressed earlier in this chapter, of the beast as the sovereign, the sovereign as the beast, where each come to haunt the other, inhabit the other, becoming both host and guest, and hostage. He states, 'it is like a coupling, an ontological, onto-zoo-anthropo-theologico-political copulation: the beast becomes the sovereign who becomes the beast; there is the beast and the sovereign (conjunction), but also the beast *is* the sovereign, the sovereign *is* the beast' (Derrida 2011, p. 18, emphasis in original). Critical in Derrida's framework here, is the

coupling of beast with sovereign, whereby the similarities found in each through their 'being-outside-the-law' are transgressed only through the side of the law to the outside of which they reside. This quality of existing outside the law, as does the beast, can be seen to allow one to become subject to both experimentation and exploitation. The sovereign's position outside the law, that is as existing *beyond* the law, is a notion to which one must pause to consider:

> [t]he minimal feature that must be recognised in the position of sovereignty … is … a certain power to *give*, to *make*, but also to *suspend* the law; it is the exceptional right to place oneself above right, the right to non-right … which both runs the risk of carrying the human sovereign above the human, toward divine omnipotence (which will moreover most often have grounded the principle of sovereignty in its sacred and theological origin) and, because of this arbitrary suspension or rupture of right, runs the risk of making the sovereign look like the most brutal beast who respects nothing, scorns the law, immediately situates himself above the law, at a distance from the law (Derrida 2011, p. 16-17).

The stark similarity here between the beast and the sovereign is problematic for the human, who, as those who must recognise and abide by the law, necessarily exists somewhere in between. However, what one is able to ascertain from Derrida's conception of the beast and the sovereign is that the sovereign being outside the law generally implies being above the law, whereas in the case of the animal or the beast, this implies being at a distance from the law, that is, as outlaw. The example that he uses is that of the criminal, 'a place where the law does not appear, or is not respected, or gets violated' (Derrida 2011, p. 17). Throughout his volume, *The Beast and Sovereign Vol. 1* (2011), Derrida makes use of the term 'werewolf', indeed he examines various wolves, to denote those who live outside the law; 'the werewolf or the outlaw is, then, "without faith or law"' (Derrida 2011, p. 98).

It is this connection between werewolf and outlaw that is of interest here as it mobilises discourse producing specific types of individuals as non-human, outside the law and therefore easily subjected to experimentation and exploitation, which will be examined through an examination of Levinasian ethics. The fact that the sovereign is said to exist beyond the law perpetuates the notion that the sovereign is endowed with the capacity to create and enforce laws to specific bodies – be they individuals or the body politic – whereby the beast resides outside the law for its inability to recognise law and abide by laws. Derrida extrapolates Hobbesian theory here with his identification of fear as the 'origin of both law and crime' (Derrida 2011, p. 41). Fear, Derrida explains, 'pushes one to respect the laws and therefore to respect a sovereignty destined, by convention, to ensure the protection of the citizens – that this fear is here defined as a human thing, as proper to mankind' (Derrida 2011, p. 42).

In the context of Derrida's discussion of what constitutes the human, the mobilisation of race can be conceived as a technique of subjugation and enslavement of African natives and certain Europeans whom were constructed as 'primitive beasts' (Hall 1997); critically, one must acknowledge the similar treatment of African slaves to that of the animal – that is, 'the use of the whip, the branding iron, shackles and the coffle' (Pugliese 2013, p. 40) to discipline both the slave and the animal. It is precisely these disciplinary technologies that 'bind animals to slaves' (Pugliese 2013, p. 40) and mobilises early considerations of what precisely constitutes a human, thereby also expressing what constitutes animal. This human-animal caesura has preoccupied much of philosophical thought and it is interesting to note that 'what is attributed as "proper to man" also belongs to other living beings if you look more closely, but also, conversely, that what is attributed as proper to man does not belong to him in all purity and all rigor' (Pugliese 2013, p. 56).

Thus, one must consider the term 'proper to man' and all that this implies; specifically, the Derridean notion that what is proper to man is indeed proper to other lifeforms, which necessarily demands a restructure of the ideological concept of the human. Furthermore, the Derridean notion of anthropocentrism must be contended here, for his framework allows a deconstruction of both the human and the nonhuman. In his work 'The Ends of Man' (1969), Derrida posits that 'everything takes place as though the sign "man" had no origin, no historical, cultural, linguistic limit, not even a metaphysical limit', positioning (hu)man as ahistorical. It is perhaps through this logic that the nonhuman can exist at all, that is, coming to existence by the acknowledgement of difference; importantly, the acknowledgement of difference as naturally inferior to the human. Derrida, through 'The Ends of Man' (1969) traces the genealogy of anthropology, positioning 'anthropologism' as a type of humanism, and indeed as the ground for Marxism. Critically, in Derrida's essay, he traces the origins of anthropological discourse, marking the development of the soul as a foundational aspect of the construction of the human. He does this through the connection of soul and consciousness – 'consciousness, the phenomenological element, is thus the truth of the soul' (Derrida 1969, p. 41) – which has been shown previously as but one aspect that separates the human from the nonhuman, namely the animal. Indeed, this notion of consciousness came to characterise Althusser's theory of the Absolute Horizon.

This anthropocentrism, obviously, comes to be critical in notions of the human and can be seen to have mobilized certain criteria throughout history, which has enabled the mistreatment, disenfranchisation and dehumanisation of countless individuals. For instance, the construction of race and the subsequent treatment of enslaved Africans can be seen as constitutive of anthropocentric ideologies; indeed, the difference in skin colour and 'civilisation' between European and non-European cultures positioned African individuals as inferior, and critically

as unconscious and therefore nonhuman, as seen in Arendt's work on action, labour and work (Da Silva 2007). It is critical to note that Arendt's work was produced in the twentieth century, which as has been discussed, saw the proliferation of modern science, hence shifting the way/s the human was conceptualised and subsequently treated. For instance, during the mid-twentieth century, humanism was reconceptualised as 'a specifically human science that recognises the irreducible status of human beings; a psychological science different from the natural sciences for the reason that humankind is importantly different from any other species' (Farson 1978, p. 5). This conceptualisation is not entirely new, of course; the connection to previous systems of thought is quite evident within Farson's text.

Rather than disrupting traditional humanist views of the human/animal binary, Farson's scientific perspective solidifies this position; modern science claimed to justify difference – and subsequently, human superiority – through empirical data. For instance, it has been stated that '"the human" is achieved by escaping or repressing not just its animal origins in nature, the biological, and the evolutionary, but more generally by transcending the bonds of materiality and embodiment altogether' (Wolfe 2009: xv). However, with the consideration of the capacity for intervention of bio- and soma- technologies, which I will examine in the following chapter, the question of the human – and indeed, the animal – must be raised once more. So too must questions of ethics, for if the human is unable to stably identify itself within a classificatory hierarchical species system, perhaps 'the special status of humans and their ''dignity'', might need to be re-assessed' (Benedikter et al. 2010, p. 1103).

As has been shown in this chapter, through a focused examination of Heideggerian, Arendtian and Derridean theory, there are several problematic areas in the construction of humanness, inclusive of who and what shall be included in this category. The critical importance of this

chapter has been to not only demonstrate the various theoretical approaches to defining the human, but, further, to situate these approaches within contemporary contexts. In order to detail gerontological hygiene – the primary theme of this thesis – it has been necessary to draw out precisely how ideas of humanness are constructed and perpetuated. That is, without this framework, it would be problematic to analyse the ways in which elderly citizens are reduced to less-than-human subjects.

Through the Heideggerian frames of world, *Dasein*, and essence, it has been possible to demonstrate not only the hierarchical nature of categories *between* species, but also *among* species. By understanding the implications of Heideggerian theory in a contemporary Western context, it is possible to ascertain the myriad of ways in which older individuals are systematically removed from the category of the human. Indeed, in some extreme cases, these individuals are classified specifically as nonhuman, existing within zones of exception that allow unethical treatment. Mapping the trajectory of the construction of the human has been critical for this thesis, as it has outlined that through various discursive assemblages of humanism, certain bodies have been expelled from the category of human, such as the non-European and the female, and this chapter has shown that this expulsion has historically been used to justify regimes of oppression such as slavery. Further, placing the Heideggerian critique in relation to Levinasian ethics has been beneficial for this chapter to demonstrate the theoretical challenges to Heidegger's theories. The ethics of constructions of the human are exceptionally critical for this thesis, precisely because the gerontological hygiene movement is predicated upon unethical – and asymmetrical – power relations. Exposing Heidegger's theories in this manner enables a closer look at the problematics of anti-aging technologies. Moreover, placing Heidegger's conceptions of world, *Dasein* and essence parallel with Hannah Arendt's own theories of the human condition, allows a deeper analysis of both the

medicalisation and the surveillance of old age, which will formulate part of Chapter 4 of this thesis.

The inter-relation between Heidegger and Arendt's frameworks is a necessary theoretical move in this chapter, precisely because their concepts overlap, but are used in significantly different manners. Where Heidegger poses *world*, Arendt mobilises action, which she positions as the essential characteristic separating humans from nonhuman Others. Specifically, Arendt's articulation of *political* action holds significant implications for understanding freedom and the *vita activa*. Action and world, then, interact in that they both exhibit logocentric discourse and operate under the assumption of rational thought as a condition of the human. The complexities of Arendt's notions of work, labour and action enable an analysis of the ways in which older individuals are positioned in contemporary Western contexts. Her account of three primary characteristics of the human are essential for an analysis of gerontological hygiene. That is, by demonstrating that certain bodies are read in specific ways, the human can be deconstructed by attributing certain ages with certain characteristics.

While Heidegger and Arendt mobilise notions of the human through freedom, political action, and a notion of core essence reliant upon rationality and logocentrism, Derrida's (2011) approach is somewhat different. It has been critical for this chapter to depart from both the Heideggerian and Arendtian approaches to the human to trace more effectively the biopolitical and governmental regimes inscribed upon certain bodies through Derridean notions of power. That is, as has been traced throughout this chapter, Derrida poses a problematisation of the demarcation between the sovereign and the beast. Asymmetries of power are clearly established through the ways in which both beast and sovereign are said to operate and exist outside the law, though critically, on opposites sides. Derrida situates the sovereign as *above*

the law, able to act with impunity, whereas the beast operates specifically as *outlaw*. For my thesis, this is incredibly important, precisely because the ways certain bodies are constructed in contemporary societies positions them through this same lens. Further, it can be argued that all bodies – human and otherwise – operate within a nexus of regimes of power, which forces specific modes of subjectification, thus enabling the regulation, surveillance and government of types of bodies. In specific relation to the elderly demographic, as a biopolitically targeted group, it has been necessary to draw out this framework, precisely as the following chapter will demonstrate that those exhibiting signs of old age are forced by biopolitical regimes and their somatechnologies to undergo a process of re-construction; indeed, as was shown in Chapter 2, neoliberalism suggests that all humans are responsible for their own state of productivity. It is through visibilising old age as a solvable medicalised 'problem' that gerontological hygiene is able to be mobilised.

Importantly, gerontological hygiene is predicated upon discourses of the human. Within this chapter, certain relations of biopolitical power have been called into question and exposed, though specifically from a humanist perspective. As such, it has been important to flesh out the ways the humanist tradition impacts notions of the concept of the human. In addition, this holds implications for the way humanness is cultivated in contemporary societies, as Chapter 4 will demonstrate in relation to anti-aging policies and somatechnologies. Further, while humanist discourse has, in part, been surpassed through the advent of posthumanism, Neil Badmington (2003) has argued that humanism haunts these contemporary discourses, which is critical for this thesis as it enables further considerations of the human in a contemporary context, and specifically for this thesis, considerations of disability and the elderly.

The medicalisation of old age and disability perpetuates humanist discourses of hierarchisation and exclusion that position the aged as diseased subjects that require gerontological-hygienic intervention. As I discuss in the chapter that follows, the development and deployment of relevant somatechnologies facilitate and justify this medicalisation, though inherent within this medicalisation are questions of ethics; indeed, how can one ascertain the boundaries of ethical treatment in scientific processes such as medical research when categories such as human are inherently unstable? As such, the following chapter will engage this question with a specific focus on the ethical issues surrounding both human and animal experimentation. Primarily influenced by the work of Levinas, the following chapter examines ethics of somatechnologies in relation to the figure of the elderly, who have become primary targets for anti-aging medicalisation.

Chapter Four

Gerontological Treatment Protocols: An Ethical Inquiry

The previous chapters in this thesis have mapped several key organising principles of both the human and what I frame as gerontological hygiene. In tracking the emergence of humanist discourses and the demarcation/s between human and nonhuman animals, this thesis has problematised both the discipline of gerontology and the construction of elderly citizens through a neoliberal, medicalised lens, applying theoretical frameworks of biopolitics, governmentality and neoliberalism. In this chapter, I mobilise an ethical inquiry into the medicalisation of age and the emerging somatechnologies that seek to "treat" old age. To pose ethical questions in the development and use of anti-aging somatechnologies, I draw upon a Levinasian model of ethical philosophy and the face-to-face encounter between the Same and the Other (Levinas 1979) in an attempt to understand, and find value in, an exterior Being. These concepts will be drawn upon in relation to early longevity medicine and its contemporaries in order to expose the violent history surrounding the attempted erasure of old age.

Furthermore, it is my contention that anti-aging somatechnologies, such as telomere-based and stem cell therapies, mtDNA manipulation and gene therapy, can be read as vehicles for gerontological hygiene based on their very nature. I move to argue throughout this chapter that these somatechnologies are predicated upon idealised and normative (human) bodies. The demarcation between human and nonhuman is important for this chapter, precisely for the ways in which the elderly – as medicalised neoliberal subjects – are often positioned as less-than-human or as decrepit and frail nonhuman animals. Thus, the deployment of anti-aging technologies becomes not only justifiable, but a necessity in contemporary neoliberal states.

Though a Levinasian model of ethics is useful in exposing the violent nature of somatechnological anti-aging regimes, it must be acknowledged that the philosophy deployed by Levinas is not without critique. Thus, I draw on Derrida's notion of anthropocentrism (2011) to interrogate the limits of Levinas' theory and establish a problematic correlation between treatment protocols for the elderly and treatment protocols for animal subjects. Derrida's understanding of ethics differs to that of Levinas in the sense that he addresses the anthropocentrism. Consequently, he offers a critique of what it means be human precisely by interrogating the interconnected nature of bestiality and sovereignty (Derrida 2011). Further, I draw upon the work of Peter Singer, who staged a critical intervention in animal studies (1975), proposing that the ability to suffer should take precedence over a speciesist model of inter-species treatment. He further argued that equal – *ethical* – treatment should be based around consideration. In this way, as will be seen, Singer's work can be used to problematize Levinas' anthropocentric ethics, precisely by his advocation that *all sentient Beings* should be *considered* according to their own needs, inclusive of nonhuman (Singer 1975, emphasis added). The notion of ethics, in this chapter, is intertwined with notions of normativity, whereby elderly subjects are disavowed precisely for a perceived lack of normative healthy bodies. As such, I draw briefly upon disability studies to buttress my argument and interrogate notions – and the utility – of corporeal normativity.

Using these theories of ethics, the human, and the animal, this chapter turns to sites of medicalised surveillance and quarantine – the nursing home – to critically map the ways in which elderly subjects are placed in violent regimes of erasure. Moreover, the space of the nursing home, in the context of Australia and the United States, in many instances evidences, as I discuss below, the violation of ethics in the treatment meted out to the elderly. Specifically,

both institutional and governmental policy perpetuate an unethical and legal framework, enabling the poor treatment of those individuals identified, through a medical lens, as existing within the Fourth Age. The purpose of this chapter, then, is to interrogate unethical regimes of intervention and erasure that enable and perpetuate gerontological hygiene. There are certain questions that have previously been raised concerning ethical inquiries into old age and aging.

For instance, Thornton and Winkler (1988, p. 5) consider questions concerning 'our culturally most prominent, pervasive, and influential attitudes and beliefs about aging'. Indeed, they ask, what do we tend to believe about 'decline, dependency, productive or contributory potential, and proper place and function? In what ways might any of these ideas and attitudes be inappropriate, dysfunctional, or maladaptive for the individual or the general good of society?' (Thornton and Winkler 1988, p. 5). I have engaged with some of these questions already, detailing the problematic dimensions of neoliberal productive aging strategies and inclusionism techniques. I have also complicated the nursing home as a site of medicalised quarantine designed more provide surveillance under a biopolitical rubric, than to provide care. I proceed to address these issues through an ethical lens. Through a lens of ethics philosophy, then, this chapter stages a critical inquiry into the mobilisation of anti-aging somatechnologies and medicalised quarantine sites. I argue that these essentially operate to simultaneously position old age as a disease-state and to devalue and medicalise those "afflicted" with the condition of Fourth Age.

An Overview of Ethics

Etymologically, the term ethics stems from the Greek word for character and can be loosely defined as the 'study of those concepts involved in practical reasoning such as good, right, obligation or freedom. [It is] traditionally viewed as one dependent branch of philosophy, after

ontology and aesthetics' (Hand 2009, p. 38). This definition is quite powerful, positioning ethics not just as a theory or concept, but also, importantly, as foundational of philosophy itself; indeed, within the pages of *Totality and Infinity* (1979), Levinas purports ethics not as a 'secondary area of philosophy, but as first philosophy itself' (Hand 2009, p. 38). Much of Levinas' seminal work *Totality and Infinity* (1979) is concerned with the notions of the Same and the Other, where the Same is named so because 'in representation the I precisely loses its opposition to its object; the opposition fades, bringing out the identity of the I despite the multiplicity of its objects, that is, precisely the unalterable character of the I' (Levinas 1979, p. 126). The Same, also understood by the term 'totality', can be understood more generally as that which can be wholly known and understood, and that which exists as infinitely distant from the Other. By the very nature of Otherness as alterity and infinitely distant, Levinas frames it as unknowable, thereby constructing the infinite as absolutely exterior. Indeed, he states,

> this absolute exteriority of the metaphysical term, the irreducibility of movement to an inward play, to a simple presence of self to self, is, if not demonstrated, claimed by the word transcendent. The metaphysical movement is transcendent, and transcendence, like desire and inadequation, is necessarily a transcendence. The transcendence with which the metaphysician designates it is distinctive in that the distance it expresses, unlike all distances, enters into the *way of existing* of the exterior being. Its formal characteristic, to be other, makes up its content. Thus, the metaphysician and the other can not be *totalized*. The metaphysician is absolutely separated (Levinas 1979, p. 35).

The irreducibility of the Other is a notion this chapter will examine in the context of medical attempts to 'know' the Other through acts of violent exploitation. Within the excerpt above, it becomes clear that Levinas' concern lies in the preoccupation with responsibility – that is, the responsibility I hold for the infinite Other. Indeed, in *Otherwise than Being or Beyond Essence* (1981: xiii), it is noted that for Levinas responsibility is a response to the face of the Other,

constituted by a relationship 'with the other, in his very alterity' (Levinas 1981: xiii). This can come to be recognised as perhaps Levinas' most crucial point of ethical philosophy; as Critchley (2007, p. 17) states, 'the meaning of ethics for Levinas is found in the relation that I have with the Other and in the unique demand that is placed upon me by him or her'. Hence, the meaning of Levinasian ethics becomes firmly situated within this sphere of responsibility, where the demand placed upon me is infinite. Significantly, Levinas (1979, p. 43) deploys the notion of a 'calling into question of the Same [which] is brought about by the Other'. What this means is that the presence of the Other – whether acknowledged with Face or otherwise, as this chapter will later detail – demands the totality, or the Same, to question its spontaneity as a mode of existence. Indeed, it is 'this calling into question of my spontaneity by the presence of the Other [that is] ethics' (Levinas 1979, p. 43). With this working understanding of ethics, the responsibility toward the Other can be seen as perhaps the most significant aspect, for without it, ethics would be non-existent.

Not only does the Same hold a responsibility to the Other, the Same holds an *obligation* towards the Other, to acknowledge their alterity without attempting to reduce the Other to the Same. For, as stated above, any attempt at reduction is a violence, and wholly unethical. However, the question arises – how is it possible to avoid this attempt at reduction? Upon meeting a stranger, for example

> I may simply treat him as a different version of myself, or, if I have the power, place
> him under my categories and use him for my purposes. But this means reducing him
> to what he is not. How can I coexist with him and still leave his otherness intact?
> (Wild in Levinas 1979, p. 13)

Wild's statement here wonderfully outlines the problematic nature of ethics, insinuating that perhaps our first encounter with a stranger is unethical. In the moment of attempting to treat the Other with respect and dignity, Wild – and Levinas – argue that the opposite has been

achieved. It is the reduction of the Other to the Same that prevents this ethics from occurring; while it is possible to injure and kill the Other, to damage this exterior being, it is, according to Levinas, a philosophic impossibility to annihilate the Other. While an attempt has been made to place the Other under my categories, this is not to suggest any level of success; indeed, Levinasian theory posits that the Other, while corporeally proximate and accessible only through Face – which this thesis will presently discuss – exists in an infinite distance from us, wholly unknowable, *absolutely other* and therefore resistant to reduction.

In a sense, this process of reduction can be seen as a process of subjugation, where individuals and communities are forced into assimilation and subjugation – a clear example is that of prisoners within the American penal system, in which these subjects were produced as nonhuman guinea pigs for the purposes of experimentation (Hornblum 1998); or more relevantly, the coercive alignment with particular discourses and ideologies, mobilised for political, social and economic power as this thesis will shortly detail in relation to inter-human transplants, xenotransplants and quack medicine. Inherent within this notion of reduction, then, is that of possession, where medical practitioners came to not only violate the human rights of their patients, they came to own their bodies through processes of dissection and xenotransplantation. Critically, however, 'what is absolutely other does not only resist possession, but [also] contests it' (Levinas 1979, p. 38). In the case of xenotransplant experimentation, the subjects were often dehumanised through the biopolitical regime of denial of rights, voice and consent, and were discursively constructed as existing beneath animals in a problematic hierarchy of life; or as Derrida (2011) might frame them, they became mere 'beasts.'

This example is significant for this thesis in terms of the violence that presupposes the arrival of ethics and marks the philosophic impossibility of reduction, for, as Levinas notes, '"if the other could be possessed, seized, and known, it would not be the other"' (Derrida 1978, p. 113). Furthermore, it is this presupposition of violence that marks the significance of ethical relations, which Levinas posits occurs originally in the acknowledgement of face, which marks the alterity of the Other. It is this point of alterity that 'Levinas also calls "exteriority"' (Critchley 2007, p. 5), which is irreducible to the Same and that which Levinas labels as ethics. Moreover, as was critically outlined in the Chapter 3, there exist stringent criterion for whom shall be *allowed* the status of human. As such, the blending of animal testicles within a human body raises specific questions of one's status as a human. Hence, the examination of xenotransplantation must call into question notions of whom shall be granted ethical care.

Critically, it is this ethical relation that demands a calling into question, as Critchley (2007, pp. 4-5) states, 'the Same is called into question by the other […]; or, to use Levinas's word, the "alterity" […] of that which cannot be reduced to the Same, that which escapes the cognitive powers of the knowing subject'. Ethics, then, can act as a method of self-criticism, whereby the arrival of the Other necessarily demands the Same to question its own spontaneity (Levinas 1979). Indeed,

> we name this calling into question of my spontaneity by the presence of the Other ethics. The strangeness of the Other, his irreducibility to the I, to my thoughts and my possessions, is precisely accomplished as a calling into question of my spontaneity, as ethics. Metaphysics, transcendence, the welcoming of the other by the same, of the Other by me, is concretely produced as the calling into question of the same by the other, that is, as the ethics that accomplishes the critical essence of knowledge (Levinas 1979, p. 43).

The significance of the relation to face – which Levinas names the 'face-to-face' encounter becomes clear here. The concept of face extends far beyond the physical presence of a person's face and breaches the ontology of discourse and language. Levinas makes a critical assertion about the Other as metaphysically transcendent based on his concept of the infinite, however it must be acknowledged that this transcendence is possible through the existence of face; the Other transcends truth, transcends knowledge and transcends any attempt at reduction (Levinas 1979).

The concept of face is exceptionally powerful throughout much of Levinas' body of work, where he deploys this notion as the original ethical relation. He also posits that face is transcendental and invokes partial access to the ungraspable and unknowable Other. As such, face can be described as much more than a physical human face with two eyes, a nose and a mouth. The face can be understood as enabling access to the Other, through glance and speech. Indeed, 'as speech and glance, the face is not in the world, since it opens and exceeds the totality. This is why it marks the limit of all power, of all violence, and the origin of the ethical' (Derrida 1978, p. 130). Here, Derrida points to face as the origin of the Other, a moment in which the totality is able to see beyond its own existence and acknowledge the presence of alterity. Furthermore, Derrida makes a powerful point in this statement by suggesting that it is also the face that marks the limit of all violence; the interruption of the continuity of the Other through violent attempts at reduction, regardless of the impossibility of such an attempt. Scholars such as Critchley (2007, p. 5) interpret Levinas' concept of face as 'the way in which the other presents himself, exceeding the idea of the other in me. In the language of transcendental philosophy, the face is the condition of possibility for ethics'. Inherent within this definition of face – just as was evident in Derrida's analysis – is the notion that certain things/individuals may be excluded.

The possibility of ethics must also see the arrival of the possibility of violence; in the conceptualisation of face as glance and speech, the implication of language in ethics cannot be overlooked. Indeed, speech comes to signal access to the Infinite, to the *absolutely Other*, operating as ethical in the way that language not only allows this access, but importantly, allows us to coexist with the Other, keeping the otherness intact (Levinas 1979). Derrida (1978) engages with this notion of face as expressive of infinity in his critique of Levinas' *Totality and Infinity* (1979), where he argues that the Other is irreducible to its *representation* specifically because it has an infinite distance *from me*. If the Other were reducible, it would not be *infinite*, but would be part of a *totality*; it would be Same. The infinite exceeds the ideation in which it is thought, again because of its proximity and distance from me, its existence as unknowable, ungraspable and infinite. This implies, then, that our exposure to the infinite is *finite* and is expressible through the face of the Other. The Other must be understood in these terms as close to me physically and visually, yet infinitely distant ontologically and metaphysically. Face, then, being expressive through both glance and speech, represents access to this infinite. The denial of language purported by Heidegger – which will be examined shortly – can then be acknowledged as a denial of face, thereby further constructing his philosophy as unethical.

It is through face that the Same is allowed exposure to the Other, which must be acknowledged 'not simply as a physical detail, but as a moment of infinity that goes beyond any idea, which I can produce of the other. The very existence of this face challenges all our philosophical attempts to systematize and therefore to reduce the Other' (Hand 2009, p. 36). However, it is also critical to mark the disavowal of face, as in the above mention of prisoners – and as will be examined in relation to so-called willing participants in rejuvenation medicine – whose

bodies became commodities of medical experimentation, and who were systematically violated through biopolitical regimes. This example has been used to demonstrate the long history of unethical behaviour that Levinasian ethics seeks not only to name, but also to prevent from recurrence. His ultimate goal in *Totality and Infinity* (Levinas 1979) is to establish a philosophy of ethics predicated on acknowledging the Other as *absolutely other*, as wholly unknowable and as a life in and of itself that holds precious value for the mere fact that it exists. This Levinasian ethics, as outlined above, is achieved through the face-to-face, where 'the face ethically fulfils the whole purpose of Levinas's philosophy, in the way it is perceived to resist possession or utilization, and for Levinas invites and obliges me to take on a responsibility that transcends knowledge' (Hand 2009, p. 42).

Critically, as outlined above, questions concerning the discursive construction of ethical boundaries must be deployed, for it must be acknowledged that ethics is a field of inquiry perpetually subject to alteration and rearticulation. Indeed, as Corliss Lamont (1990, p. 254) tells us, 'all ethical laws and systems are relative to the particular historical period and to the particular culture of which they are a part'. It should follow that what was deemed "good" ethically during the height of the Nazi state in terms of eugenic pseudo-science, shall not necessarily be evaluated the same way in contemporary society. While Lamont's argument highlights the pliable dimensions of ethics, this discourse seems somewhat apologist in nature, where historical unethical regimes and practices are accounted for retrospectively as occurring without fault, simply because society, at that time, did not know better. Furthermore, this discourse of apology is negated by Levinas who examines ethics as *a priori*, by which he means ethics is always-already present, before any experience with the Other.

This holds significant implications in that a subject should know that a certain act is (un)ethical based on associated empirical facts, such as that murder is considered 'wrong' – for lack of a better term. In particular relation to the history of human experimentation, this thesis shall presently discuss notions of ethics as they arose through medical discourses and how this practice of experimentation further problematised notions of the human and indeed, perpetuated already constructed – and idealised – notions. This thesis will make note of both the Hippocratic Oath and the Nuremberg Code, which are constituted by foundational ethical codes that have guided medical practice; however, I will argue that these codes are susceptible to ethical violations, precisely based on to whom and what they can be applied.

The Animal Within: The ethics of testicular xenotransplantation

In proceeding to examine the violation of ethics in practices of medical experimentation, I will discuss testicular transplant patients, many of whom were violated both corporeally and ethically, thus, were denied face and constructed as nonhuman. This has purposefully been chosen for these testicular transplants were developed and deployed as an early anti-aging somatechnology; both inter-human and xenotransplants are of significance for this chapter, for the co-implications between human, nonhuman and the role of ethics in the practice of transplants. As the primary focus of this thesis is the discursive construction of aging as disease, some time is needed to explore the notion of ethical conduct in the construction of who shall be considered human in medical settings. The following brief analysis examines the maltreatment of involuntary recipients of animal testicles during the 1920s-1930s, in a longevity movement that spanned the globe. I trace the extent to which ethical mistreatment occurred in recent twentieth century history, which will lay the foundations for an analysis of (non)ethics in current medical discourse. I focus specifically on the ways in which old age is

constructed as both inferior and as disease-state. This will ultimately expose how the elderly are subject to methods of eradication through the deployment of somatechnologies.

Anti-aging methods have been practiced for as long as mythology of immortality has existed; it is critical to mark this is not a European movement. Indeed, phytotherapy or herbal medicine existed as early as 1900BC (Ho et al. 2010), where anti-aging properties were often attributed to specific herbs, such as wolfberry and panax ginseng. Critically, these herbs are still currently under investigation for their utility as anti-aging agents (Ho et al. 2010). Non-herbal methods in European societies such as England and France began approximately during the early 1300s to understand the aging process (Stambler 2014a); a more scientific approach to the anti-aging movement began some time later, during the mid-1500s in France, as scientific discourses became more commonplace. Cultural discourses saw theorists, writers and physicians engaging with notions of eradicating or at least *retarding* age.

With such a long history, notions of age retardation have undergone several discursive shifts, as have notions of treatment protocols. Luigi Cornaro (1475-1566), for instance, detailed the positive aspects of aging, but he did so in a manner that viewed old age as imbued with its own dimensions of health; rather than a focus on maintaining youth, his discursive frame considered old age a blessing. Thus, his notable work, *Trattato della vita sobria* (1558)*,* translated into English as *The Art of Living Long* (1903) and *Discourses on the Sober Life (1993)*, became a worldwide success, being translated into several different languages, and often adopted as a quasi-user manual for longevity. It is seen here that Cornaro's understanding of age differs greatly with contemporary understandings; that is, old age as a blessing that can be achieved through healthy living stratagem inclusive of moderate alcohol intake and restrictive diet, rather than old age as pathological and to be avoided through regimes of eradication.

Importantly, Cornaro's ideas surrounding restrictive diets have continued to be seen as a method of longevity; these ideas have notably been upheld by Aubrey de Grey, whose work surrounding causation between caloric restriction and aging have been crucial in contemporary understandings of age as a disease-state, and the development of anti-aging somatechnologies.

Anti-aging somatechnologies extend as far back as discourses of age retardation and longevity; further to Cornaro's restrictive diet, physicians such as Jean-Baptiste Denis – employed as King Louis XIV's doctor – practiced xenotransfusions[41]. That is, as early as the mid-1600s, sheep blood was commonly transfused into male patients for both 'placation' and rejuvenation. The implication of xenotransfusions is the discursive framing of the senescence of the body. Early medicalisation of the body understood that with renewed blood, one would experience renewed vitality. This discourse continued through to the late 1800s, where notions of artery damage, degeneration of the brain and nervous system, degeneration of endocrine glands, sex glands and pituitary glands became the focus of interrogation; each in a different area of the globe (Stambler 2014a).

As a result of the focus on internal organs as the source of aging and loss of vitality, developing treatment protocols became invasive and surgical. Indeed, in the early 1900s, shortly after Charles Davenport and Irving Fischer co-founded the "Race Betterment Society", Dr Leo Stanley began testicular xenotransplants between younger and older prisoners at San Quentin (Stambler 2014a). Between 1919-1920, Stanley performed 643 xenotransplants, in which the testicles of recently deceased young inmates were surgically implanted into older inmates who were deemed prematurely senile. It was thought the testicles of the younger inmates would

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[41] I frame both the xenotransfusion and xenotransplant as a somatechnology for its literal inscription into the human body and the implications this holds for renegotiating the limits of human-nonhuman bodies.

contain vitality that, once inserted into older men, would stimulate not only their own vitality, but produce anti-aging effects. Stanley essentially carried out experiments on these prisoners, whereby the results were not proven, the procedure was largely untested and unrefined, and as such, can be acknowledged as unethical and violent. Hornblum (1998) asserts that prisoners in the American penal system were largely uneducated, with little to no ability to read or write, and a limited understanding of verbal language. Thus, any written or verbal consent from these inmates, to have their testicles surgically replaced with those of a dead man, would necessarily not have been *informed*; hence the procedures are violent in that they deny participants the capacity to understand what is happening to them, and critically, to refuse to participate.

Furthermore, in the case of Stanley's experiments, the absence of informed consent, or indeed *any* consent, exemplifies the construction of patients as without rights and as bestial. While it must be acknowledged that a vast number of clientele did consent to the replacement of their testicles with those of various animals – usually boar or deer – there were also a great number of patients who did not give consent; that is, these patients were often subject to testicular xenotransplantation while anaesthetised for a different operation. There are clear and obvious ethical violations here, however what is interesting for this thesis, as well, is the notion that willing patients were also denied informed consent. Specifically, because the effects of the xenotransplants were untested and unproven, save for a handful of medical professionals – such as Dr. Leo Stanley – who performed these operations on themselves (Stambler 2014a). Thus, informed consent is not applied and the participation of a multitude of seemingly willing patients is predicated on purposeful deception.

The prisoners at San Quentin mark but one aspect of the unethical practices of rejuvenation medicine practiced throughout the late 1800s through to the 1900s. Physicians other than

Stanley realised that inter-human testicle transplants were predicated in a finite resource and that this practice was fraught with ethical danger. Thus, the use of animal testicles came to be a viable alternative and the clientele surpassed that of the inmate; indeed, by the 1920s, testicular xenotransplants were commonplace throughout the U.S. and Europe (Stambler 2014b). It is critical to mark here that the archaeology of (anti)-aging medicine has its modern roots in eugenic ideology. While anti-aging medicine between the 1300s-1800s focussed not on the preservation of youth, but longevity in old age (Cornaro 1903; Gruman 1966; Haber 2004), modern manifestations were concerned more with the literal rejuvenation of age; the reversal of the body clock. Eugenic hygiene regimes were deployed from the 1920s onwards, according to Stambler (2014a), in the U.S., Germany, France and Russia. These notions of hygiene lie in the fact that selective breeding was first and foremost identified as the safest, surest way for future generations to age well and live longer.

This discursive rupture – that is, from old age as a blessing to old age as pathological – can be traced to the commodification of xenotransplants and the promise this practice held for a renewed sexual vigour; specifically, in the late nineteenth century, French scientist Charles-Èdouard Brown-Séquard devised a tangible chemical and physiological substance which became the forerunner for contemporary hormone therapies (Stambler 2014a). Indeed, Brown-Séquard paved the foundations of therapeutic endocrinology, thus enabling other scientists and longevity physicians to further their own longevity research. Brown-Séquard's innovative approach to rejuvenation through subcutaneous injections must also be noted as unethical, for his surgeries were performed without the patients' knowledge, so that he might observe objective effects of rejuvenation (Stambler 2014b). Critically, his actions violate the framework of the Hippocratic Oath, to which all physicians swear. The Hippocratic Oath far predates Brown-Séquard – it is often thought to have originated in the fifth century BCE (Miles

2005) – and was a well-established, institutionalised part of the medical industry at the time of his practices, which further positions his work as unethical. This practice was repeated by several physicians, notably Variot and Steinach, whose work succeeded Brown-Séquard's. This goes beyond notions of (non)-informed consent where Derrida's notion of the beast categorises the way in which Brown-Séquard's patients were constructed. That is, through a denial of their human status, and thus any ethical face-to-face relation, these patients were constructed as outside the realm of ethics.

Further, these patients are constructed as nonhuman – as *beast* – thus positioning their bodies as *disposable commodities* for what I term as the altar of anti-aging. That is, these bodies were offered as sacrificial in the quest to violently reclaim youth. The status of medical patients – both historically as in the above example, and in contemporary societies as will be seen shortly – can be framed through a Derridean lens and examined through his notion of 'animal nourishment' (2011, p. 12). Throughout *Beast and the Sovereign, Vol. 1* (2011), Derrida formulates a framework through which categories of the human become hierarchized. He does this through metaphor, positioning both beast and sovereign as animals existing in different realms of power and subjugation.

Specifically, he frames the sovereign in terms of the wolf, where the wolf is 'terrorizing, armed, threatening, virtually predatory' (Derrida 2011, p. 6) precisely because it does not physically appear. Its power – its sovereignty – rests in its absence, in what Derrida names as insensible. The wolf is insensible specifically because one neither sees or hears it coming, because it is invisible and inaudible, and therefore nonsensible, but also insensible because it is all the crueller for this, impassive, indifferent to the suffering of its virtual victims. Derrida's wolf has been examined by various scholars, where the wolf stands in opposition to the beast; that is,

wolf-as-sovereign, beast-as-Other (Curtis 2015; Still 2015). As such, the use of Derrida's wolf and the beast can be transposed for many subjugated subjects. Importantly, Mbembe (2003) argues that the sovereign is characterised by those who decide whether or not someone is disposable. Mbembe's (2003) terms this form of biopolitics *necropolitics*. Nadesan (2011, p. 40, emphasis added) critically adds that 'necropolitics subjugates life to the power of death, often producing deathworlds wherein vast populations are regarded with the status of "*living dead*"'. I find Mbembe's conception of the sovereign useful here, precisely because his notion of sovereignty connects with my earlier conceptualisation of hierarchies of life. Further, Mbembe's interrelation between disposability and necropolitics provides a useful framework in understanding the myriad ways in which the medical industry continually position aged bodies as disposable, and subsequently, as the 'living dead.'

As such, the thesis examines the notion of the wolf and its dichotomous opposite, the beast, through the lens of old age and elderly individuals. In this way, sovereignty can be ascribed to both the medical arena and institutions of elder care, such as the conglomerates of Regis Nursing Homes and Aveo, which will be examined towards the end of this chapter. What is critical to mark here is the construction of the elderly as beasts for a perceived incapacity to exercise control over their own lives (Australian Law Reform Commission n.d). In this way, the ushering of elderly individuals, deemed as incapable of caring for themselves through governmentalized regimes such as the ACAT, into such facilities, can be seen through Jean-Jacques Rousseau's notion that the 'human race [is] divided into herds of cattle, each one with its chief who keeps it in order to devour it' (Rousseau 2012, p. 237). The interesting connotation here is that of cattle as domesticated animality, and 'already defined and dominated by man *in view of* man, an animality that is already destined, in its reproduction organized by man, to become either an enslaved instrument of work or else animal nourishment' (Derrida 2011, p.

12). As mentioned briefly above, medical patients can be examined through the lens of animal nourishment, which insinuates that animals can become the victims or prey of the wolf (sovereign), precisely due to a perceived lack of what Derrida terms 'properties of [hu]man[42]' (1969, p. 45). That is, properties of humanity, that which are 'unique to man [and] always form a configuration, from the first moment' (Derrida 2002, p. 373). Drawing on Derrida's conceptualisation of the nonfinite parameters of this list of properties of [hu]man, I argue that through biopolitics, core aspects of humanity are identified and deployed as stringent requirements of all citizens.

In specific relation to the elderly patient, and the commodification of their bodies for the altar of anti-aging[43], specific examples of animal nourishment can be deployed. Whether through xenotransplants, inter-human transplants, or other medical procedures, the commodification process is manifold. Firstly, it is important to draw on animal ethics – that is, the *literal* animal subject and their role in anti-aging developments. It is important to trace the role of animals in scientific and medical research to then effectively draw parallels to the construction of elderly subjects as nonhuman and disposable. It is common practice for mice to be used as subjects in medical experimentation and the field of biogerontology is no exception. In what follows, I argue that notions of capital must be addressed and examined in relation to the animal subject, insofar as this will enable a clear connection to ethics and, subsequently, violence. The entanglement of animal and human flesh is what comes to be at stake here, where the ever-blurring boundaries between the two – specifically in the way that elderly individuals are being

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[42] I acknowledge the phallocentric language used in portions of Derrida's work and as such, when referring to what he named 'properties of *man*' (1969), I deploy the term [hu]man.

[43] I mobilise the phrase 'altar of anti-aging' precisely for the ways in which youth is commodified and fetishised and the inter-relation between discourses and practices that seek to abolish age from contemporary western society.

medically constructed as less-than human – demands a calling into question of current (bio)medical practices into anti-aging.

It must be noted, though, that animal capital and the symbolic signs that animals can (re)-present, are quite powerful discourses, precisely because of the seemingly interchangeable nature of the terms *animal* and *capital* in a globalised neoliberal economy. The discursive interchangeability of these terms predates globalisation by centuries, where René Descartes theorised the mechanistic nature of the animal, posing that animals were 'essentially indistinguishable from machines and that their behaviour can be fully explained without recourse to notions such as mind and self-awareness' (Calarco 2015, p. 9). As such, as with Aristotle, Descartes found that animals were purposeful only in their ability to serve the indulgences of humans (Calarco 2015), hence 'experimenting on them … and killing them for food pose[d] no ethical problems' (Calarco 2015, p. 9). In this vain, Nicole Shukin (2009) purposefully deploys the phrase 'animal capital' in her work, where 'the two words are supposed to sound almost, but not quite, the same' (Shukin 2009, p. 15). Indeed, Shukin claims that 'market discourses … seek to affect a perfect mimicry of animal and capital, including advertising campaigns depicting mobile phones and cars morphing into the instinctive species -life of monkeys or rabbits' (Shukin 2009, p. 15). In this way, Shukin (2009, p. 5) argues that animal signs act as 'potent discursive alibis of power', serving particular political ideologies.

Moreover, the animal 'functions as a hinge allowing powerful discourses to flip or vacillate between literal and figurative economies of sense' (Shukin 2009, p. 15). I find Shukin's argument compelling here, particularly when examining the use of animals for biomedical experimentation. The mouse (and other life forms) in science has been a predominant figure since the middle of the sixteenth century (Guénet and Bonhomme in Hedrich 2004), when mice

were used to study reproduction, blood circulation and the biological effects of increases in air pressure (Guénet & Bonhomme 2004). The evolution of the wild mouse into the laboratory mouse is well-documented (Hedrich 2004), however what is significant in this documentation is the lack of awareness of the ethical considerations of exploiting the figure of the mouse. Indeed, several scientific theorists have traced the genetic evolution of the mouse in specific relation to its use as a biomedical research mechanism, although in these texts there is little known research into the mouse – and other laboratory animals – from an ethical perspective. Shapiro (1998) addresses this concern with discussion of the 'human ethic', whereby the primary focus becomes suffering. Just as was argued by Singer (2002), it is an animal's capacity to suffer that positions its value as an ethical subject. Further, Singer suggests that the capacity to suffer is intertwined with sentience, and thus 'combines an ontology of sentient human-animal continuity with the ethical principle of equal consideration' (Calarco 2015, p. 15) – discussed below – to mobilise Singer's (1975) position that all sentient animals are equal, regardless of status as human or otherwise.

As such, as Shapiro (1998, p. 469) states:

> if an animal is killed without unnecessary suffering, for example, anesthetized before a surgical procedure and then not allowed to gain consciousness, there is no ethical cost associated with the fact of the loss of life. Only his or her suffering while living, not an animal's life, count.

Key words in this quote include 'consciousness' and 'cost'; these are significant for my analysis precisely because it is not the life of the animal, or its recognised capacity for consciousness that is considered in its treatment, but only its manner of death. In a Foucauldian lens, the biomedical researchers are enacting the sovereign right to let live or make die (*Society Must Be Defended* 1976). Shapiro (1998) furthers her argument through a brief discussion on the necessity of laboratory animals' suffering, whereby 'a person's act is [ethically] good if, in

the presence of pain, the act relieves suffering-- unless the suffering is necessary' (Shapiro 1998, p. 469). Singer (2002) accepts this necessity through a utilitarian lens, where he argues that suffering can be necessary if the results – benefits – of the research outweigh the costs. Wolfe (2003, p. 69) exposes this when he states that

> the utilitarian calculus … would tally up the "interests" of the particular beings in question in a given situation, regardless of their species, and would determine what counts as a just act according to which action maximizes the greatest good for the greatest number.

Singer's position is more complex than this, though, where his utilitarian approach deploys the principle of equal consideration. He states, 'the basic principle of equality does not require equal or identical *treatment*; it requires equal consideration. Equal consideration for different beings may lead to different treatment and different rights' (Singer 2002, p. 26).

This sentiment is supported by other pro-animal scholars, such as Francione (2000) and Calarco (2015, p. 13), who argues that:

> [t]he principle [of equal consideration] … implies that no argument is actually needed for extending ethical consideration to animals; they and all other beings who have interests deserve ethical consideration as a matter of principle. The burden of providing argumentation and reasons lies, instead, with those who *deny* consideration to animals (or any other individual who has interests). If we were to override or ignore animals' interests, to treat their lives as mere means to our ends … this principle suggests that we would need compelling reasons for doing so.

As such, Singer concludes that practices such as eating and experimenting on animals cannot be justified, precisely because they do not 'maximize aggregate utility' (Calarco 2015, p. 16). Importantly, however, Levinas (1979, p. 239) argues that the infliction of suffering does not necessarily mark an attempt at reduction – from Other to Same – or to (re)-construct subject as

object. Rather, to *experience* suffering, 'the subject must know his reification [and thereby] remain a subject' (Levinas 1979, p. 239). The Levinasian perspective is critical here, precisely because his comments surrounding suffering enable that which is placed under sovereign power to remain a Being in-and-of-itself. Levinas, however, argues that animals are outside ethical relations as they are without face. I contend however, the experience of the laboratory animals' suffering is a vital component in the (non)-ethical relation.

Likewise, 'from a utilitarian point of view, society may benefit a great deal from experiments that violate the rights and dignities of a few individuals' (Resnik 1998, p. 119). While Resnik here is mobilising questions of human subjects, I find his comment pertinent here, precisely because of the implications this perspective holds for both the animal Other and those humans constructed as somehow less-than. The utilitarian perspective is necessarily violent and constitutes a breach of ethics in that, in Levinasian (1979) terms, it relies on attempted annihilation of the animal/non-human Other so that the human Same may benefit[44]. Further, Shukin (2009) calls on Foucauldian biopower to examine the modes in which constructions of the human have significant implications for their nonhuman counterparts. She argues that 'the power to reduce humans to the bare life of their species body arguably presupposes the prior power to suspend other species in a state of exception within which they can be noncriminally put to death' (Shukin 2009, p. 10). Placing the animal in a state of exception, whereby their lives are under the total control and surveillance of the institutions that bred them, allows the body of the animal to be articulated as disposable. The visual morphing of the animal body into commodities – as Shukin (2009) mentioned above – is a critical discursive dispositif in that it enables a reframing of the Other into something recognizable (Bhabha 1994). While Bhabha

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[44] It is important to note the limits of Levinasian ethics in relation to ethical considerations of the animal. This will be examined later in the thesis, however presently this chapter will focus on the notions of animal capital and the construction of elderly individuals as beast, from a Derridean perspective.

examines this in relation to what he names 'colonial mimicry', I find this relevant here in relation to the biopolitical discourses in operation that seek to minimise – or erase – the existence of the animal *as such*, thereby producing the animal as commodity, as in the case of laboratory mice.

The body of the animal is further discursively constructed as disposable through scientific policies that provide the foundations of biomedical research practices. Indeed, 'standard protocols for controlled clinical trials require researchers to conduct extensive animal studies before testing treatments on humans (Resnik 1998, p. 124). The extensive process of animal studies further positions the animal body as disposable and furthermore, as commodity. The value of the animal, and the 'cost' of their lives, is constructed specifically through a process of commodification and capital. The biomedical research in question for this thesis is the ongoing pursuit of anti-aging technologies. As stated above, mice and other nonhuman life-forms are the primary commodity of study, and as such, are offered as disposable sacrifices for the altar of anti-aging.

I argue that this is an example of unethical violence; in terms of anti-aging research, whether the mouse lives or dies, it must be recognised that the animal exists wholly within this nexus of power. That is, the animal resides in a subjugating biopolitical regime, whereby 'the reproductive lives and labours of other species (sexually differentiated labours, let us not forget) … become a matter of biopolitical calculation' (Shukin 2009, p. 12). I argue that it is this subjugation that necessarily invokes a form of capital, particularly in the case of the laboratory animal. Precisely through the subjugation of the animal as scientific object, the animal is thereby encoded with both symbolic and financial capital. In this way, the oppression of the laboratory animal is, in a Foucauldian (1990) sense, constitutive of the animal identity.

While I argue that the construction of the animal in this way, however, is no less unethical or violent, it is critical to mark the problematic nature of Levinasian ethics in this specific framework. That is, Levinas (1979) argues that the animal has no face and therefore *cannot* be Other. For Levinas, the animal is hence disposable on all accounts, precisely because it has no capacity for ethics and as such, does not invoke in humans any obligation or responsibility; two key facets of Levinas' conception of ethics. This chapter will mobilise an examination of the limits of Levinasian ethics shortly, however I presently turn back to Derrida (2002), who called for a rejection of animality in general (Wolfe 2003). For Derrida, the term 'animal' acts as an umbrella catch-all phrase, capturing '*all the living things* that man does not recognize as his fellows, his neighbours or his brothers' (2002, p. 51, emphasis in original). Derrida positions this as a violence

> to the heterogeneous multiplicity of the living world by reconstituting it under the sign
>
> of identity, the *as such* and *in general* —not "animals" but "the animal." And as such,
>
> it enacts what Derrida calls the "sacrificial structure" that opens a space for the
>
> "noncriminal putting to death" of the animal (Wolfe 2003, p. 66, emphasis in original).

As mentioned earlier in this chapter, this noncriminal putting to death marks the animal body as wholly disposable for the sacrifice to what I have previously named as the 'altar of anti-aging'. Where Derrida examines this sacrificial structure to name the multiplicity of life forms and deconstruct seemingly stable categories – *the* animal – I adopt his framework of the 'sacrificial structure' (Derrida cited in Cadava, Connor & Nancy 1991, p. 112). It is this sacrificial structure that binds Derrida's concept of animal nourishment, as outlined earlier, whereby the laboratory animal becomes victim to the sovereign, precisely because of the homogenisation of the category of the animal, its production as commodity and the seeming lack of 'properties of [hu]man' (Derrida 1969, p. 45). In connection to the example of xenotransplants in longevity research – and more recently in anti-aging research – the

construction of the animal in this way is significant. Specifically, because of the erasure of the critical role of the animal in the research, and the seemingly sole focus on the benefits of the research. In this way, I argue that eugenic utilitarian discourses have informed both longevity and anti-aging research since its inception.

It is critical to acknowledge the widespread use of xenotransplants, and to further acknowledge their institutionalisation well before the establishment of the most notorious vehicle of eugenic ideology, that is, the Nazi state and its investment in longevity research. In the context of the Nazi state, I argue that the field of anti-aging reached a critical moment of violence, that is, the enforcement of selective breeding and forced sterilisation[45]. Through the publication of *Wie verlängere ich mein Leben?* (Roemheld 1941) – its translated title being *How Do I Prolong My Life?* – Cornaro's *The Art of Living Long* (1903) was all but replaced; Baden-Württemberg's longevity manual acted as a call to action for both medical professionals and the ordinary citizen to improve health and thus prolong their life-spans. It must be acknowledged that this text further promoted the eugenic regime of selective breeding and can be seen as an influence of the enactment of the "Law for the Prevention of Hereditary Diseased Offspring" on July 14, 1933 (Stambler 2014a); only four months after the manual's original publication.

While Cornaro's text captured notions of old age as a blessing and as something of value, it is notable here that with the dissemination of Baden-Württemberg's text, this discourse had already shifted substantially. Through the medicalisation of the body and of the aging process, the implementation of Cornaro's restrictive diet, and the emergence and perpetuation of

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[45] The mention of the Nazi State need only be minor here, specifically because it is important to understand that the Nazi State carried the worst violences in contemporary history and these violences were also directed towards those deemed 'old'. I mention this here precisely to mark how the eugenics of the Nazi State was instrumental in expanding anti-aging research, and which contemporary anti-aging research is thus based.

eugenic ideology, notions of aging experienced a discursive rupture that essentially treated old age as pathological and treatable. It also came to be a question of personal responsibility to age well, for example, during the Nazi regime, citizens and military personnel alike were required to undergo regular medical examination to ensure individual health was at its peak. Significant for this thesis is the similarity this framework shares with contemporary notions of self-surveillance, as detailed in Chapter 2 of this thesis.

The horrors of the Holocaust led, in the wake of World War II, to the establishment of the Nuremberg Code. The Nuremberg Code is of great significance here; designed post-World War II, in 1947, the Code aimed to provide an ethical framework to which scientists and medical practitioners alike were bound. 'The Code established ten principles, including the rights and autonomy of experimental subjects and corresponding responsibility of physicians to ensure informed consent' (Hornblum 1998, p. xvi). Several parts of the code are of importance for this thesis, however the following passage marks the emergence of a discourse of ethics that, in practice, violates ethics by sanctioning animal experimentation:

> The experiment should be so designed and based on the results of animal experimentation and a knowledge of the natural history of the disease or other problem under study that the anticipated results will justify the performance of the experiment (Hornblum 1998, p. xi)

What is critical to note here is the demarcation between human and animal, perhaps unsurprising given its context, but nonetheless ironic given that human experimentation played a major role in the politics of global medical systems both pre- and post- the horrors of the Nazi state relation to the development of medicalised technologies.

In relation to the human rejuvenation experiments of inter-human and xenotransplants, the treatment of patients comes to be further seen as unethical and violent, for the fact that these

patients' bodies were essentially mutilated under the guise of progressive medicine, specifically through the exclusion of the face and their re-positioning as faceless animal. Singer's work is important in the deconstruction of the human/animal dichotomy and forces a rearticulation of hierarchies of life, specifically in terms of his more controversial work on quality of life, abortion, euthanasia and bestiality (Singer 1975). As controversial as his views on these topics are, the concept of rights remains of significance for this thesis. Indeed, rights are problematic by their very existence in that they operate in a double-movement, whereby rights are easily bestowed yet are also able to be taken away. Furthermore, the notion of rights inscribes problematic conceptualisations of biopolitical hierarchies of life, in which animals and nonhumans are placed beneath that of the essentialised, idealised human construct.

Further, what constitutes part of this hierarchy is Levinasian ethics itself; that is, his framework of ethical philosophy must be seen to perpetuate hierarchies of life based around anthropocentric understandings of the human/nonhuman dichotomy. Levinas seems to adopt an Aristotlean perspective surrounding animals, whereby 'according to Aristotle, animals are best understood as belonging to a naturalistic schema in which they are situated between plants and human beings and as being ultimately (if not entirely) place in the service of human beings' (Calarco 2015, p. 8). This, then, marks the limits of Levinasian ethics, precisely for the fact that Levinas disavows the essentialised category of the animal through his stipulation that animals are without face. As such, the partial access the face grants I to the Other is, according to Levinas, absent.

John Llewelyn (1991) expounds a story written by Levinas in which he and his other Jewish prisoners were befriended by a canine named Bobby. According to Llewelyn, Bobby lacked *logos* and was therefore without ethics (Llewellyn 1991). Llewelyn further remarks the

similarity between Levinasian ethics and Kantian ethics, whereby Kant (2012, p. 105) argues that 'in all our experience we are acquainted with no being which might be capable of obligation (active or passive) except man, man therefore can have no duty to any being other than man'. However, Matthew Calarco (2008) critiques Levinas' position here – and, by proxy, Kant's – specifically because the canine Bobby struggles enacts 'ethics par excellence' (Calarco 2008, p. 58) when he welcomes the prisoners back from work. Precisely because Bobby, arguably, does not offer material possessions to the prisoners and receives nothing in return. The ethical encounter here is, as Calarco tells us, is a form of gift whereby the canine breaks from his 'struggle for existence to *be with* the prisoners and offer them what he can' (Calarco 2008, p. 59). The limits of Levinas' ethics are apparent through his two primary theses concerning the ethics of animals, or nonhuman species. Calarco (2008, p. 55, emphasis in original) summarises these as:

> [firstly,] no nonhuman animal is capable of a genuine ethical response to the Other;
> and [secondly,] nonhuman animals are not the kinds of beings that elicit an ethical
> response in human beings – which is to say, the Other is always and only the *human*
> Other.

Moreover, Levinas (1979) solidified this argument through the assumption that a responsibility towards the Other can only exist if that Other can speak. This thereby excludes nonhuman animals entirely, if one adopts the understanding that animal communications are in fact not a type of language. Further, according to Calarco (2008), the essential difference between human and nonhuman that Levinas uses to underpin and justify his position, is that humans overcome basic biological drives. He captures Levinas' philosophy nicely when he summarises Levinas as holding 'a classical view of animals as being engaged in an unremitting struggle of all against all, persisting in their egoist desires, blind and deaf to the call of the Other' (Calarco 2008, p. 56). From this, it is clear that Levinasian ethics enforces an anthropocentric

philosophy, which enables and justifies the positioning of life forms into problematic hierarchies.

While Calarco (2015, pp. 33-34) acknowledges Levinas occasionally 'softens his ethical anthropocentrism' and admits his notions of ethics may extend beyond the human, he fails to delve into this topic in any of his work. In this way, Levinas positions the human as a type of exception that subsequently perpetuates the problematic anthropocentrism deployed by Aristotle and Descartes, as discussed above (Calarco 2015). The limitations of Levinasian ethics is important here, precisely because if questions of the animal – and their existence as inside ethics – arise, then so too, dichotomously, must questions of the human, particularly in considering the ethical breaches seen within constructions of the human. Specifically, constructions of the elderly as less-than human. Chapter 2 of this thesis traced the problematic nature of the construction of the human, which shall be revisited here in specific relation to hierarchies of life.

These hierarchies are exceptionally powerful in the way they enable subjugating regimes and narratives. For example, Hubbard (cited in Davis 2006, p. 93) notes that disability 'has been considered divine punishment or, alternatively, the result of witches' spells. In our scientific and medical era, we look to heredity for explanations unless there is an obvious external cause, such as an accident or infectious disease'. The hierarchisation of bodies has a well-documented history, particularly in relation to disability. Old age, as detailed throughout this chapter, has existed in various positions in this hierarchical structure. It is important to note the significance here, precisely because the process of hierarchisation is unstable. That is, certain human bodies are (re)-produced as less than human; specifically, because rights discourse never operates as a singular movement, but is always-already inscribed with asymmetrical relations of power

through the presence of the Other. Indeed, as Pugliese (2013, p. 97) states, the 'concept of human rights is always-already founded on the human/animal biopolitical caesura and its asymmetry of power'. In relation to Chapter 1 of this thesis, which detailed the biopolitical construction of the human, the example of the Nazi state becomes relevant once more, where Pugliese marks the seemingly progressive regime of animal rights undertaken by the Nazis, which was simultaneously predicated on the biopolitical inversion of what he terms 'raciospeciesist' discourse:

> The Nazis effectively called for a more 'authentic' relation to nature ('blood and soil') that was buttressed by animal rights (Reich Animal Protection laws) and the rights of nature (Reich Law on the Protection of Nature). Animals and nature were thereby recalibrated up the speciesist scale at the expense of Jews. Deploying the violence of raciospeciesism, the Nazis animalized Jews as 'rats,' 'vermin' and other low life forms, situated them at the bottom of the biopolitical hierarchy, and then proceeded to enact the very cruelty and exterminatory violence (cattle car transport, herding in camps replicating stockyards and the industrialized killing procedures of animal slaughterhouses) that they had outlawed against animals (Pugliese 2013, p. 97).

As demonstrated here, the notion of rights is both problematic and significant in constructions of the human for the power embedded within rights discourse and the ways in which both human and animal rights can be rearticulated to serve specific purposes. While the example of Nazi regimes is historical, it becomes no less relevant when compared to contemporary sites where the erasure of humanity – and of ethics – can be clearly seen, such as Guantanamo Bay. Indeed, these historical practices have arguably informed modern practice, and allow us to further consider the ways in which certain bodies have been dehumanised and for what purposes.

Thus far, I have argued that rejuvenation medicine is grounded in early eugenic ideology and was therefore mobilised along similar (un)ethical utilitarian parameters. The construction of the xenotransplant patient as nonhuman animals can be seen as similar to the construction of non-White individuals as animals. Whereas Africans were seen as closer to nature based on racist concepts of 'primitivism,' patients have historically been constructed as beast based on a lack of normative health and perceived decreased ability for work and action (Arendt 1998). In the west, particularly the US and Europe, historically there has existed a significant focus on health and longevity regimes. Part of these regimes included the defining of normativity, both in terms of health and corporeal form. For this reason, I draw briefly on disability studies to map the intricate connection between the construction of an ideal *whole* body and old age as a form of disability.

Lennard Davis' work on disability must not be overlooked here, precisely because his work in the *Disability Studies Reader* (2006) formulated a critical step in the consolidation of contemporary studies not only of disability, but also of *normalcy*. Indeed, Davis questions what it means to be 'normal' and what it is to have a 'normal body'. His critique of normativity thus relies on notions of the Bell Curve, the measurement of standardised bodies to which all others must compare. Critically, Davis does not focus on the construction of disability per se, rather his trajectory pursues that of the construction of normalcy (Davis 2006). He does this precisely 'because the "problem" is not the person with disabilities; the problem is the way that normalcy is constructed to create the "problem" of the disabled person' (Davis 2006, p. 3). I find his framework useful for my own analysis here, specifically because old age has been historically co-implicated with disability, where both corporeal states were represented in Ancient Greek and Roman traditions as specifically Other. Precisely through the emergence of the visual artwork movement of the grotesque, as also highlighted by Davis. While there is a long history

of representations of ideal bodies, the 'concept of the norm or average enter[ed] European culture, or at least the European languages, only in the nineteenth century' (Davis 2006, p. 5), raising the valuable question as to the 'cause of this conceptualisation' (Davis 2006, p. 5). Looking further back can build context for this question, and as Davis tells us:

> dating from the seventeenth century … one can nevertheless try to imagine a world in which the hegemony of normalcy does not exist. Rather, what we have is the ideal body, as exemplified in the tradition of nude Venuses, for example. This idea presents a mythopoetic body that is linked to that of the gods (in traditions in which the god's body is visualized) (Davis 2006, p. 4).

Davis' statement here not only links ideal *whole* bodies to the divine, and thus as unattainable, but further indicates that through these representations, discourses of imperfection began to emerge. Although, these discourses seemed to gain legitimacy during the nineteenth century, which can be seen as a result of increased scientific inquiry into notions of the body, illness/disease and health. Indeed, Snyder and Mitchell (2006, p. 79) draw on histories of eugenic inquiry in the US as a contemporary model of producing 'disabled people as a species of defective intelligence and aberrant physiology'. According to Snyder and Mitchell (2006), this resulted in a similar categorisation as outlined by Davis – that is, the 'subnormal'. It is seen here that disabled bodies are produced in relation to the 'normal' body. I find this production relevant for this thesis, precisely because disability studies draws out a baseline for normativity that, while being problematic, has been used both discursively and as a methodological framework in history, the impact of which is seen not only in relation disabled bodies, but arguably all bodies that exist outside the stringent comings of what Davis named 'normal'.

A clear historical account of the intersection between old age and disability is, as was traced in Chapter 1 of this thesis, the active genocide of countless elderly and disabled during the Nazi Holocaust. The eugenic gaze that scrutinised these bodies can be traced back to the historical

emergence of the construction of ideal forms – and further, ideal existences. Further, as was marked in Chapter 1, while explicitly eugenic practices have long since been abandoned, I have argued that the ideology has remained in the form of neo-eugenics. Snyder and Mitchell (2006, p. x) make this argument, as well, when they position eugenics as 'not "over"' and further, as a 'social phantasm [lurking] just below the surface' (Snyder & Mitchell 2006, p. x). Thus, the institutionalisation of disability through regimes of 'restriction, confinement, and absence of liberty' (Snyder & Mitchell 2006, p. x), it must be acknowledged, are part of a neo-eugenic biopolitical movement, also inclusive of the attempted erasure of old age.

Hence, with the medicalisation and pathologisation of disabilities inclusive of old age, I argue that those within the framework of illness and disease were therefore constructed as expendable based on eugenic ideologies of inferiority. It is this same eugenic construction that I argue positions the testicular xenotransplant patient as beast; Derrida purposefully uses the term 'outlaw' throughout *The Beast and the Sovereign Vol. 1* (2011) to trace the vast categorical distance between certain individuals and both literal laws and established modes of normativity. As such, the ill and diseased are necessarily removed from Derridean notions of law through their medicalised existence and the treatment protocols to which they are consequently subjected. The aged and elderly are necessarily part of this category, once the medicalised mode of existence is acknowledged. Critical, though, is that this position as beast – and therefore the position as human – can be seen as malleable and highly unstable. That is, through the bestowal or removal of rights, freedoms and choices, a subject may be relegated either to the category of human, nonhuman or beast. Just as in the case of prisoners, where a once human status is revoked, the same discourse can be implemented to the elderly, or those approaching reduced capacity for work and labour.

It is critical to note, though, that the experiments of Doctors Brinkley, Stanley, Steinach, Voronoff, Brown-Séquard, and others did not continue unquestioned, for several colleagues took issue with their methods and lack of legal permission. The implication here is that several physicians did employ ethical codes and that these unethical practices were not endorsed by the entire medical institution. Further, journalist Samuel Adams began publishing articles surrounding quack medicine to prevent further dissemination of unproved remedies, such as Brown-Séquard's 'testicular extract', which saw 'at least 200,000 injections administered' (Stambler 2014a, p. 88). As a result, the first Food and Drug Acts were published in 1906.

It is worth noting, too, that the line of inquiry spear-headed by Adams was further undertaken post World War II, with the undertaking of the Nuremberg Trials. Significantly, during the trials, the Nazi doctors 'offered a vigorous defense based on revelations that, from the early part of this century, American physicians had conducted similar nontherapeutic experiments on prisoners' (Stambler 2014b, p. xvi). American physicians were not seen, however, as needing to adopt this Nuremberg Code. It was created primarily for German medical practitioners in order to prevent further horrors and was seen as 'an unnecessary code for ordinary physician-scientists' (Stambler 2014a) like Americans, despite the co-implications of American institutions like the Rockefeller, Ford and IBM, who are known to have had direct links with Nazi Germany (Black 2003; Black 2004). Hornblum traces the emergence of a new medical code of conduct for Americans, established by the American Medical Association's (AMA) Dr Andrew Ivy, a prominent physiologist, which states that:

> 1. The voluntary consent of the person on whom the experiment is to be performed
> [must be obtained].
>
> 2. The danger of each experiment must be previously investigated by animal
> experimentation.

3. The experiment must be performed under proper medical protection and management (Hornblum 1998, p. 235).

Like the Nuremberg Code, these rules of conduct imply that a high level of informed consent is required for experiments to be carried out and the experiment shall be of a nature that ensures the patient/subject safety. Interesting to note here is the clear division between human consideration and animal consideration, where this code was established prior to any acknowledged forms of animal rights. The role of the nonhuman becomes clear here, where the testicular transplant patients were subjected to experiments that violated each of these codes in some way or another, as this chapter has already begun to outline. The AMA's use of language can be briefly interrogated here, where the particularities of 'proper medical protection and management' remain unspecified, suggesting an assumption that protection and management is a universally understood and standardised concept. The seemingly rigid ethical rules outlined here can be interpreted as actually quite flexible in what it means to employ proper medical protection and management.

One might argue that Levinasian ethics were at play in the construction of both the AMA's code of conduct and the Nuremberg Code, specifically, in its attention to the care and safety of the patient. In terms of the obligation towards the other as *absolutely other*, Levinasian ethics can be seen within the Nuremberg Code, where the obligation lies in the recognition of face and the promise of responsibility to the human volunteer as Other in and of itself (Levinas 1979*)*. However, the refusal of America to adopt the Code must then be further recognised as questionable. The result of this refusal to adopt the Code enabled scientists such as Alexis Carrel and others like him to conduct their unethical research; importantly, it further demarcated the patient as nonhuman in the ways that both the doctors and the institutions enabled the unethical treatment of these individuals, as detailed earlier in this chapter.

As has been shown, there have historically been several methods mobilised towards the rejuvenation of youth. However, as with the xenotransplants discussed earlier, these formulated a movement that celebrated longevity, rather than anti-aging. The critical distinction here is that longevity celebrated growing old and advocated for health into advanced years. Conversely, the anti-aging movement, as is being explored through a biogerontological and medicalised lens, focuses on the removal or actual erasure of age. This formulates what I have thus far framed as the gerontological hygiene, which is predicated on not only the rejuvenation of one's youth, but also the eradication of Fourth Age (Pickard 2014). As such, the following section of this chapter details the critical impact of institutional anti-aging inquiries and the legitimising affect these have on understanding age as a disease-state.

The abolition of aging: The GeroScience Network and gerontological hygiene

There currently exists a multitude of institutions working towards this goal, operating as an informal conglomerate known as the GeroScience Network. This network 'hypothesize[s] that by targeting fundamental mechanisms of aging, clinical interventions can be envisaged that could delay or prevent age-related diseases and disabilities as a group, rather than one at a time' (Kirkland 2017). The eleven institutions comprising the network operate with the understanding that the aging process is the *root cause* of disease and disabilities, hence the targeting of age itself is thought to be the key to solving a myriad of other illnesses and diseases. The GeroScience Network's conceptualisation of age as a process of decline – and that which must be overcome – can be pointed to as a significant step in widening discourses of aging beyond the scientific frame. For example, representatives of different institutions of the GeroScience Network approached the Federal Drug Administration (FDA) in 2015 in the hopes of moving animal testing to the realm of human testing.

That is, models of therapeutic research – gene, stem cell and mitochondrial – conducted on mice, fruit flies, rats and various species of worms suggests that age is indeed modifiable (Anisimov 2013; Kasiotis et al. 2013; Howard 2015). The multitude of sources that suggest age is a treatable condition in nonhuman species has led scientists to consider whether these same methods can be successful in human subjects. The FDA, however, was initially hesitant to approve human testing for anti-aging drug trials, because of a definitional issue whereby 'old age' was not listed in the International Classification of Diseases (Howard 2015). This has since been altered, where in the latest draft (ICD-11) of the International Classification of Diseases (2017) manual, 'Old Age' is listed as MK85, characterised in three ways; firstly, 'old age without mention of psychosis'; secondly, 'senescence without mention of psychosis'; and thirdly, 'senile debility' (International Classification of Diseases 2017). Stambler (2017, p. 2) acknowledges the problematic aspects of this listing when she states that

> [t]he nearly 40 associated "index terms" in the ICD-11 draft also include "ageing"
> itself, "senility" (n.o.s.), "senile degeneration," "senile decay," "frailty of old age"
> and others. Still, the current definitions, such as "senility" defined in an ICD-11
> draft as "failure of function of otherwise normal physiological mental or physical
> process(es) by aging. Not to be used under the age of 70 years" seem to be rather
> deficient in terms of their clinical utility. Furthermore, a comprehensive,
> scientifically and clinically usable list of general symptoms for "senility" in the
> ICD is still lacking.

One implication of the above passage is that 'senility' becomes synonymous with old age, thus further positioning 'aging itself' as a justifiable line of inquiry into disease treatment protocols. Further, by officially listing old age in the International Classification of Diseases manual, the notion of age-as-disease – and the resultant medicalisation of elderly individuals – gains legitimacy, and further, efforts to 'cure' aging become recognised through institutions such as

the FDA. Indeed, there is renewed interest in a 'cure' of aging, where both social science researchers and medical science researchers purport that need not simply for treatment protocols, but for the eradication of age through a 'cure'. As Jin et al. (2015, p. 2, emphasis added) argue,

> while the degenerating aging process, involving the accumulation of structural damage, impairment of metabolic balance and functioning, is a disabling and debilitating process that requires prevention and treatment, *the achievement of healthy longevity, characterized by the maintenance of functional capacity*[46] *and robustness*, is its 'cure'.

Further, an episode of *Breakthrough* (2015) examined the role of GeroScience Network members in their quest to validate anti-aging research and mobilise human drug trials of a repurposed version of Metformin[47]. Interestingly, this trial is known as TAME (Targeting Age with Metformin); the use of language here must not be overlooked, where both the acronym of TAME and the powerful word 'targeting' position aging not only as an enemy of sorts (Leslie 2017), but also the aging body as akin to an animal that needs both control and medicalised surveillance. In line with this understanding, Derrida's conceptualisation of the beast also pursued this trajectory, where he suggested the beast needs to be 'captured domesticated, humanized, anthropomorphized, tamed, cultivated, [and] parked' (Derrida 2001, p. 82). With this connection to linguistic phrasing and the co-implications for human-animal relations, TAME comes to embody not only medicalised surveillance, but also hierarchizing anthropocentric regimes that operate to exclude the elderly body. That is, the body of the

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[46] The mention of functional capacity is problematic here and will be examined shortly in relation to the World Health Organisation's Global Aging Strategy document.

[47] Metformin is typically used as a treatment for type-2 diabetes, however has it has been observed to 'function as a caloric restriction mimetic' (Garg et al. 2017, p. 15). It decreases blood glucose concentration and has been noted to reduce oxidative damage and chronic inflammation (Garg et al. 2017).

elderly is offered up to be *cultivated*, *tamed*, and *re-humanised* through application of anti-aging (bio)medicines.

The purposeful use of these terms enforce age – and, intrinsically, *old* age – as *improper* to [hu]man. Importantly, within the *Breakthrough* (2015) episode in question, the GeroScience Network members often refer to the potential for higher productivity and human use-value if aging were to eventually be overcome. Stambler (2017, p. 1) further acknowledges the rising 'need' to discern anti-aging technologies to aid in 'the healthy and productive period of life' as 'an urgent global priority' (Stambler 2017, p. 1) in the wake of acknowledgements of significant population aging. Indeed, Stambler argues that there is 'an urgent need for effective therapies against degenerative aging processes' (Stambler 2017, p. 1), arguing that a likely method of achieving tangible anti-aging therapies is the discursive construction of old age as a disease-state, or at the very least, a medical problem to be eliminated.

There are significant implications here concerning the overarching desire to eliminate old age; rather than solely an effort to defeat a myriad of diseases, there exists a focus on perpetuating the neoliberal subject. Ensuring that individuals never reach old age would thus ensure those same individuals remain productive in a neoliberal context. This discourse is often seen within the scientific community, where researchers from the Sinclair Lab argue for the validity in their anti-aging work by stating, 'the prevention or delay of the onset of age-related diseases prolongs survival and improves quality of life while reducing the burden on the health care system' (Mitchell et al. 2014, p. 836). Framing the research as reducing the burden of the elderly enforces notions not only of neoliberalism, but also of productive aging and the elongation of the Third Age.

Notions of the Third Age have been briefly outlined above in relation to modes of aging productively. However, in relation to the construction and perpetuation of aging as a disease-state, the Third Age has also been aligned with the term 'compressed morbidity' (Kalache et al. 2002), whereby stages of frailty – Fourth Age – are compressed or shortened for as long as possible. This notion of compressed morbidity 'is now at the heart of today's approach to noncommunicable diseases, aging and health with its focus on the life course, health promotion, and "active aging"' (Kalache et al. 2002, p. 243). As such, as Katz (2005, p. 127) argues, 'the aged subject becomes encased in a social matrix where moral, disciplinary conventions around activity, health and independence appear to represent an idealised old age'. Further, Davis (2002, p. 105) cites the series of institutions that work to impose, throughout one's lifetime, normalising concepts upon bodies:

> The patient or citizen governed by the norm of representation and by the hegemony of normalcy passes, in one lifetime, through a series of institutions-day-care; primary, secondary, and higher educational facilities; corporate employment; hospitals; marriage and family; managed care; and finally nursing homes-all of which are based around legally, juridically, medically, and culturally normalizing concepts'.

As Davis notes, nursing homes formulate part of a complex series of normalising concepts of the life course approach, which further solidifies hegemonic understandings of old age – that is, the nursing home as a *necessary* institution into which we all enter. The integration of drugs into this approach is seemingly the next step, particularly with the continued research into Metformin as an anti-aging drug. Some scholars, such as Anisimov (2013), suggest that Metformin is perhaps *already* an anti-aging drug; indeed, his research has proven that dosing worms, fruit flies and mice with metformin results in an increase in lifespan in rodents, regardless of the age of the specimen, and a decrease of tumour incidence. The potential anti-aging characteristics of Metformin are being strongly investigated by members of the GeroScience Network, along with other substances such as Rapamycin and Resveratrol (Baur

et al. 2007; Baxter 2008; Blagosklonny 2009, 2010a; Kaeberlein 2010; Kasiotis et al. 2013). The building momentum towards construction of anti-aging treatments within the biogerontological community is evidence that aging is considered a disease-state. Further, the extensive network of scientists mobilizing around the race to find a 'cure' for old age thus demands consideration of the ethical implications such a 'cure' might hold for those already afflicted with the disease of old age.

Mobilising a Levinasian framework, I argue that the use of Metformin as an anti-aging drug breaches ethics in a violent attempt not only at reduction – that is, from Other to Same – but further, as a systematic effort of erasure. While Levinas' ethics argues that annihilation – here, examined as erasure – is a philosophic impossibility, it is crucial to note that there have been, and still exist, many *attempts* to do so. That is, he states, 'violence does not consist so much in injuring and annihilating persons as in interrupting their continuity' (Levinas 1979, p. 21). Hence, the ethical breach is not so much concerned with the outcome of any attempt at abolition, but rather lies specifically in the process. In contemporary societies such as the U.S., and Australia, these are attempts at the erasure of the condition of old age. While the elderly in this context can be viewed as the irreducible Other, or as the *absolute Other*, what is critical for my examination is the perpetual effort to reduce the Other to the Same – here seen as youth – through biotechnologies. Metformin is but one of these; other chemical-based biotechnologies include the manipulation of properties of Resveratrol (Alarcon de la Lastra and Villegas 2005; Kaeberlein 2010; Kasiotis et al. 2013) and Rapamycin (Blagosklonny 2010b; Lamming et al. 2013) to target the aging process.

I purposely deploy the term 'target' here, precisely because the TAME program utilises this very language, and the implication of targeting age not only creates a discursive distance

between 'us' and 'old age', but further, enforces the notion of erasure as stated above. Critically, the use of biotechnologies to target the aging process – and those currently within or approaching the Fourth Age – must be viewed here as a tangible mode of disavowing face. However, 'the alterity that is expressed in the face provides the unique "matter" possible for total negation' (Levinas 1979, p. 198); hence, the possibility of the face of the elderly marks the simultaneous possibility for erasure, where Levinas argues that access to the Other is only partially accessible through face. Further, he argues that violence 'can only aim at a face' (Levinas 1979, p. 225), precisely because violence 'proceeds from unlimited negation' (Levinas 1979, p. 225) and can only aim at a presence or Being already infinite, despite any physical closeness. In this way, it can be argued that violence occurs in the face-to-face relation.

Critically, Levinas frames ethics as the face-to-face, the relation between the Same and the Other whereby the spontaneity of the Same is called into question through acknowledgement of the alterity of the Other. The absolute exteriority of the Other, according to Levinas, allows itself to be partially known through the face-to-face encounter. While Levinas' analysis here deploys a framework for an *ethical* encounter. I argue that approaches to the elderly can be problematised, precisely due to strategies such as productive aging, which seek to improve the quality of life of elderly subjects. As such, there exists a discursive practice of subjugation, whereby approaches to the elderly and old age from a medicalised perspective seem to largely stem from the perspective that this state of Being needs intervention. An ethical face-to-face encounter, what Levinas (1979) at times refers to as an optics, would see the acknowledgement of the Other – the elderly – as valuable in-and-of-itself, without aiming to place the elderly 'under my categories' (Wild cited in Levinas 1979, p. 13). As can be seen through the rising biogerontological movement, the formation of conglomerates such as the GeroScience Network, and the recent inclusion of 'Old Age' into the International Classification of Diseases

manual, such as encounter cannot be ascertained. Indeed, the mobilisation of programs such as TAME, I argue, acknowledges the existence of the *absolutely Other* in the form of the elderly precisely for the unethical purpose of eradication or erasure.

The irreducibility of the Other holds further implications for notions of biopolitics, whereby there are both discursive and tangible dispositifs currently being deployed because of the rearticulation of old age into a disease-state. Specifically, the repression of old age into a disease-state can be examined biopolitically through the Foucauldian (1990) repressive hypothesis. That is, the repression of old age, and identities surrounding age-as-disease, is simultaneously constitutive of new identities. In this case, the elderly as (re)-constituted through a biomedical lens as sites of scientific inquiry. Thus, there is an alignment – however partial – between Levinas and Foucault, where the attempt at reduction results in a reification of the bodies and identities in question. Further, the biopolitical turn here enables regimes of surveillance of the elderly.

Following a Foucauldian model of surveillance, the GeroScience Network aims to encode the aged body at a cellular level. Moreover, the goal here is to call into question both the aging (near-senescent) cell and the body in which it resides. External to the GeroScience Network, but firmly aligned with their dogma, is Google's initiative, Calico. To date, there is little known about the specifics of Calico, save for their research aims and the team that has been called together for this research. Small articles have appeared between 2014 and 2015 in online newspaper editions and technology-based publications, with the information largely describing the leading scientists involved and their specific aims; that is, the defeat of aging. Indeed, the limited information on their corporate website states the following:

Calico is a research and development company whose mission is to harness advanced technologies to increase our understanding of the biology that controls lifespan. We will use that knowledge to devise interventions that enable people to lead longer and healthier lives. Executing on this mission will require an unprecedented level of interdisciplinary effort and a long-term focus for which funding is already in place (Calico Life Sciences 2015).

The key words within this brief description are 'control' and 'interventions', which not only operate to further mobilise aging as a disease-state, but also implies sovereignty over the process of aging. Critically, as well, this further implies control over the body politic, whether they be elderly already or are at risk of developing this disease – previously an inevitably, soon to be but a potentiality to be avoided. In October of 2014, founder of Calico, Art Levinson, received a medal for Technology and Innovation for his important work in defeating cancer, but critically, for his recent work with Calico and the prevention of aging (Farley 2014). Calico is exceptionally important for this chapter as the very existence of this company illuminates the social and medical interest in the research; interest that is proven by the funding received and the awarding of prestigious medals to the company founder. Anti-aging discourse is perpetuated in this way, with notions of perpetual youth primarily considered to be desirable and inherently positive from a medical line of inquiry (Bostrom 2003; de Grey 1999, 2004a, 2004b, 2005, 2007a & 2007b; Kurzweil 2000, 2005 and 2006; More 1993; More and Vita-More 2013; Young 2006), and increasingly, by the general body politic, as the thesis conclusion will detail. However, as Murphy (1986, p. 239) stated, 'I offer the ultimate test of the desirability of curing or preventing aging: whether it would add to or detract from the significance of human life'.

This notion of the 'significance' of the human is a vital aspect of the debate over anti-aging technologies. Where biogerontologists such as Aubrey de Grey see the eradication of aging as

inherently positive and an unquestionable progression, others, such as Murphy above, pose a cogent question surrounding what this alteration to the human species would mean. If Heideggerian essence were a pre-requisite for humanity, as detailed earlier Chapter 3, then what consequence would the removal of aging – another seemingly essential aspect of humanity – have for our self-definitions? Benedikter et al. (2010, p. 1104) phrase this nicely when they state:

> given that since the 18th century, there has been little doubt that the future of the open societies and social morality depends upon some ''essential'' concept of the human being, the question then arises: in light of these new [technological] developments, how will the human being conceptualize itself and its society, in the decades to come?

A technological determinist response could consider technology as 'removing' the human from 'human being', curing us of ourselves and making us into something else, namely the posthuman cyborg, which this thesis will discuss further in the following chapter. Despite this discourse, anti-aging research continues in the medical sector, where the defeat of aging is reminiscent of humanist ideologies of perfection. Indeed, the following simple statement elucidates the perpetuation of anti-aging discourse and the emergence of corporations and research programs aimed at reversing the disease of aging. Farson (1978, p. 14) states that 'just because the task of perfecting human beings is a lost cause is no reason to stop working on it'. Indeed, Calico is a demonstration of this paradigm; even though Farson wrote this in the late 1970s, prior to advanced technologies that exist today and continue to emerge, his statement embodies the discourse of perpetual dissatisfaction with the human form.

Further, I argue that this corporeal dissatisfaction is manifest in the development and deployment of anti-aging somatechnologies. I take as an example here the emerging technology of mitochondrial DNA (mtDNA) manipulation. Mitochondria are uniquely found

within cells structures of animals, plants and fungi. Somewhat in the vein of stem cells, they are specialised structures, however unlike stem cells, mitochondria 'serve as batteries' (Vidyasagar 2015), providing power for a myriad of cell functions key to the survival of the organism in which they are present. Critically, 'mitochondria are the organelles that not only manage the cell's energy production but can also detect danger and control cell death' (Mora, Bueno and Rojas 2017, p. 410). Further, Li et al. (2012, p. 1748) argue that 'mitochondria are the driving force behind life, as mitochondrial oxidative phosphorylation provides the main source of energy in the cell'. Thus, it holds that the integrity of mitochondria is critically important to the survival of an organism.

In conjunction to acting as an energy source for the organism's body, mitochondria also hold their own DNA – known as mtDNA – which recent scientific research has found to be subject to mutation over time (Dufour et al. 2008). It is the mutation of mtDNA that is a cause for aging, specifically under the model of the oxidative stress theory (known interchangeably as the free radical theory of aging), which 'propose[s] that increased levels of free radicals[48] with age would cause a progressive accumulation of cellular damage (DNA, protein and lipid). In normal oxidative phosphorylation, free radicals are produced as by-products' (Ho, So & Chang 2010, p. 356). The free radical theory of aging supposes that there exists an accumulation of cell damage caused by 'reactive oxygen species (ROS) in biological systems attack molecules and thereby cause functional decline of organ systems that eventually leads to death' (Haendeler et al. 2009, p. 929). Further, research has shown a correlation between oxidative stress, mitochondrial mutation and the development of diseases associated with aging, such as

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[48] Freeman and Crapo (1982, p. 412) assert that 'a free radical is any molecule that has an odd number of electrons. Free radicals, which can occur in both organic (i.e., quinones) and inorganic molecules (i.e., O(2)), are highly reactive and, therefore, transient. Free radicals are generated in vivo as by-products of normal metabolism. They are also produced when an organism is exposed to ionizing radiation, to drugs capable of redox cycling, or to xenobiotics that can form free radical metabolites in situ. Cellular targets at risk from free radical damage depend on the nature of the radical and its site of generation'.

atherosclerosis, neurodegeneration, or cataracts (Haendeler et al. 2009). Importantly, research has also suggested the intertwining of the free radical theory of aging with mitochondrial manipulation is a direct cause of aging itself (Crouch et al. 2007; Dufour et al. 2008; Li & Pei 2012; Lyakhovich & Graifer 2015). Resultant of this discovery, efforts into the manipulation of mtDNA are underway, with the purpose of rejuvenating the mutated mtDNA, thus reversing age itself.

However, it is unclear as to what age an individual can be – or indeed *should* be – restored; further, it invokes notions of eugenic ideology, framed in this thesis as neo-eugenic. Thus, this somatechnology raises questions not only of the idealised human form, but also conjures the notion of the human body as a stable and fixed category. I argue that the body necessarily needs to be examined through a lens of corporeal assemblage, whereby the organic is always-already co-implicated with the mechanical and scientific. 'In Foucauldian terms, the corporeal parts of an assemblage are the "non-discursive practices" while the enunciative part of an assemblage that are the "discursive practices" (Foucault 1972)' (Yu 2013, p. 7). Further, Russell (2010, p. 148) argues that 'this image of corporeal assembly insists upon heterogeneity and social formation. Bodily assemblage runs counter to the cultural fantasy of the "able-bodied" as complete'. Russell's claim acknowledges the problematic conceptions of the body as both natural and a-historical, thereby facilitating the understanding of the body as always-already *un*finished. That is, corporeal assemblage challenges 'the myth of the discrete, asocial body, insisting on its formation as a complex process that impacts a heterogeneous spectrum of shapes and abilities' (Russell 2010, p. 152).

The notion of the corporeal assemblage is critical to mark here, precisely for its intervention with notions of homogeneity; in relation to the elderly body as a site of biomedical inquiry,

adopting the lens of a corporeal assemblage would enable a re-articulation of the category of Fourth Age. Notions of assemblage in general are interesting precisely for the ways in which current conceptions of the human are designed and articulated through an intertwining between organic and inorganic materials. That is, as Seaman (2007, p. 260) argues

> key components of the human … are viewed as inherently flawed, with science as the rescuer of the human from its mortal self. In this [way], the human becomes an assemblage of parts, conceived of in terms of a machine that can be fully understood, operated, repaired, and redesigned.

Likewise, Lupton (2012) states that there exist various theoretical perspectives – including both trans- and post- humanism – that have been mobilised to examine 'the ways in which human bodies interact with non-human technologies to create assemblages of human/technological bodies' (Lupton 2012, p. 46). Technologies such as mtDNA manipulation feed into this discourse, precisely because the manipulation is dependent upon both advanced technologies and understandings of mtDNA as a script of sorts, able to be revised and re-written. One can argue that the mapping of one's genetics – that is, the Human Genome Project – marked the beginning of medical genetics and provided a trajectory for future genetic research. Further, it marked the emergence of genetics, in various forms, as a discursive practice.

Visibilising human biomarkers as text has contributed significantly to scientific research, whereby the mapping of a person's genome signified the further possibilities for mapping the cells that constitute that genome. The underpinning desire to 'know' the human genome, to map it and code it, can also be seen in recent research surrounding various anti-aging technologies – such as telomere-based therapies, stem cells, and forms of gene therapy such as mtDNA manipulation. The process of manipulating mtDNA is co-implicated with notions of tissue engineering and DNA editing. That is, mtDNA can be understood not only as a text, but further, as an evolving narrative of what constitutes the (ideal) human. Where Pugliese (1999)

offers a critique of the use of forensic genetics in the space of the courtroom and the emergence of DNA profiling, I contend that his reading can be expanded to include mtDNA. Precisely for the fact that mtDNA is not only coded in a similar method as DNA, but is further similarly used to build a profile of normativity; firstly, normativity of the (human) cell, and secondly, the normativity of an individual based on the expression of their mtDNA.

Understandings of normativity are important in discussions of mtDNA, because in the grammar of biology, 'the law of the letter will serve to govern both life and death' (Pugliese 1999, p. 424). The biopolitical implications rest in the ways in which mtDNA is coded as either normative or mutated. The medicalised intervention in the narrative of normative genetics and mutated mitochondria must be seen as inextricably connected with biopolitical practices of 'letting live and making die' (Foucault 1990, p. 240). Precisely because the human mitochondrion is positioned as a cause of aging and death, simultaneously biogerontologists are thus positioned as those best situated to alter the narrative through manipulative processes.

The purposeful editing of mtDNA not only enforces its coding as a textual script, but further enables an understanding of the genetics of the body as a site of biopolitical intervention. If the aging process comes to be scrutinised at the cellular and genetic level, as is shown in research surrounding mtDNA manipulation, I argue that questions of Derrida's 'properties of [hu]man' (1969, p. 45) must figure in any subsequent discussions. Indeed, not only shall I ask what is proper to [hu]man, but more specifically, what is proper to [hu]man's *body*? That is, how are biomedical researchers envisioning their work in practice? If it is possible to turn back the mitochondrial clock, how far back shall it be turned, and why? At what point does the body manifest itself as an idealised form of the human?

The notion of 'proper to [hu]man' as outlined by Derrida can be interpreted as a system of identification, in which humanity is defined and regulated; in this system, critically, Derrida (2011, p. 140) positions bestiality as proper to [hu]man – that is, the ability to be cruel. In a contemporary society of perpetually advancing technologies of all kinds, these characteristics are being re-examined and rearticulated, for the simple facts that science is providing the opportunity for humans to fulfil the humanist goal of perfection, and that emerging somatechnologies are further complicating notions of the pure human. Neo-eugenic in nature, as discussed in Chapter 1, these technologies then, and the discourses that they perpetuate, have significant implications for the aging body. As Grunwald (2005, p. 197) states:

> [w]hether aging as a process and death are, in principle, acknowledged as a
> predetermined initial condition of human existence, and should only be made subject
> to medical treatment in their extreme expression, or whether aging and death are seen
> as conditions which are, whenever possible, to be abolished, depends on fundamental
> normative presuppositions, which, in view of the conflicts connected with them, are
> of great ethical relevance.

Grunwald's mention of normative presuppositions of the human is critical here, precisely because humankind is currently experiencing significant discursive alterations surrounding notions of old age. In the way that aging is undergoing medico-discursive rearticulation, the notion of evolutionary regulation must be acknowledged. Particularly in terms of Young's (2006) transhumanist notion of designer evolution, which mobilises biotechnology as the only means of transcending the suffering at the heart of the human conditions. What is truly at stake in Young's work, however, is the impact of biotechnology on the category of the human; his transhumanist manifesto, *Designer Evolution* (Young 2006), takes a holistically positive stance on the matter, where he – and other transhumanist scholars (Kurzweil 2000, 2005, 2006; Bostrom 2003; More & Vita-More 2013) – espouse the control of human characteristics and traits; critically, the eradication of undesirable characteristics and traits. It is this notion of

control that corporations like Calico are seemingly interested in, though this sovereign desire of absolute control and power is shrouded in discourses of medicine and enhancement.

Crucial here are questions of normativity and abnormality, where through humanist logics of perfection and immortality, aging has been constructed as a disease-state and at the very least, an illness, thereby constructing the aging process itself as an abnormality. The development and deployment of anti-aging somatechnologies amplify this discourse and identify characteristics of (hu)man that are 'proper' in a Derridean sense. Through this construction of aging as disease, the mobilisation of medical research into its 'cure' comes as no surprise; the accompanying medico-ethico-discourse can be interpreted as specifically designed to engage with the aging process as any other illness to be treated. Indeed, the use of somatechnologies to interrupt and reverse aging would essentially mimic the treatment protocols for fighting epidemics and other diseases. 'Aging "as a disease" would be combatted medically as if it were the flu' (Grunwald 2005, p. 197). This discourse of disease formulates what I label as the gerontological hygiene movement, in which the process of aging is no longer recognised as 'proper to [hu]man', thereby relegating the elderly not only to a medicalised existence, but also to that of the nonhuman.

Further, in a neoliberal political economy where human use-value is measured in productivity, there has been a noticeable popularisation of genetic testing (Map My Gene 2017). Corporations such as Map My Gene offer individuals the chance to know their personal susceptibility to disease/s, whereby individuals willingly have their genome mapped, coded, and given back to them in the textual format of a report. While this is not necessarily a technology of anti-aging, it does thus contribute to discourses of gerontological hygiene through the practice of identifying the possible *improper* characteristics your genetics hold. In

this way, there is a clear fetishisation of genes, whereby an individuals' genetic make-up is thus a commodity. In 'knowing' how your genes may 'betray' you in the future, individuals are thus afforded the chance to pre-empt and prevent these diseases from taking hold. However, what is critical to mark here is the entanglement between old age and disease. As old age is more widely becoming synonymous with disease, it stands to reason that the preventative measures will also be anti-aging in nature, particularly considering new and emerging anti-aging somatechnologies that seek to not only eradicate improper characteristics, but also to erase old age.

As I discussed in my previous chapters, scholars such as Aubrey de Grey have researched extensively into the eradication of aging, positioning its removal from the humans' lexicon as not only desirable, but, indeed, as necessary, in line with Young's argument of designer evolution. However, this

> desirability of 'curing' or preventing aging rests ultimately with moral and
>
> metaphysical questions about the kinds of beings we are, the kinds of lives we ought
>
> to pursue, and the way in which we discover and assert the value of human life
>
> (Murphy 1986, p. 248-9).

Furthermore, Benedikter et al. (2010) have commented on the significance of such endeavours as the eradication of aging, where they suggest that the 'fundamental self-concept of the human being' (Benedikter et al. 2010, p. 1103) is already beginning to change. Indeed, the value of human life has been articulated throughout history, as this thesis has thus far demonstrated, however in a climate of perpetual technological advancement and the ever-blurring lines between human and nonhuman through the development of somatechnologies, questions of ethics and of Derrida's notion of 'proper to [hu]man' should not be overlooked; not only do these technologies enable a clearer vision of what is proper to humankind, they rearticulate notions of normativity in order to produce a more desirable notion of the human.

As with the above extrapolation of mtDNA, notions of normativity are further enhanced by therapeutic technologies such as telomere lengthening and stem cells, both of which are forms of gene therapy. I argue that gene therapies are dependent upon, and reinforce, notions of idealised human bodies. It has been shown that therapeutic measures at the genetic level have tangible effects upon bodies (Whalen et al. 1994; Baxter 2008; Blagosklonny 2007; Kim, Park & Sung 2009; Menaa, Menaa & Menaa 2011), most notably the rejuvenation of skin through erasure of wrinkles and restored elasticity. Telomeres are a vital component in anti-aging somatechnologies, specifically because they are known to operate in conjunction with mtDNA and manipulation of telomeres may be an effective therapy in reversing old age. Telomeres formulate part of human DNA, where they appear at the end of each chromosome (Sinclair & Oberdoerffer 2009). 'They are maintained by telomerase, a ribonucleoprotein complex that consists of an RNA template (TERC) and a reverse transcriptase subunit (TERT). In the absence of telomerase, chromosomes progressively shorten with each cell division' (Sinclair & Oberdoerffer 2009, p. 193). Research has indicated that telomeres, as an active agent in chromosomal maintenance, play a vital role in 'both tumour formation and cellular as well as organismal aging' (Sinclair & Oberdoerffer 2009, p. 193).

Hence, the shortening of the telomere results in both DNA damage and a limited capacity for DNA repair. This 'genomic instability' (Sinclair & Oberdoerffer 2009, p. 194) has been evidenced to be 'caused by accumulation of DNA damage, dysregulation of repair mechanisms, and telomere attrition' (Gribble & Welch 2017, p. 1). Thus, understanding the role of the telomere, and the consequences of its perpetual shortening, in aging, has facilitated further research into the possibility of *telomerisation*, which is essentially a form of cell immortalisation. That is, the possibility of formulating a gene therapy predicated on

manipulating telomere length and enhancing the telomeres capacity to replicate itself perfectly. Whereas currently, telomere replication results in accumulated DNA damage, current models of telomeric gene therapy are aiming to immortalise telomeres. As a result, the body in which they exist would see a postponement – and potential reversal – of the aging process.

In addition to the exploration of telomere-based therapies, scientific endeavours have made use of stem cells for some time, famously being used to clone a sheep named Dolly. The utility of stem cells expands well beyond cloning, with scientists experimenting on the use of stem cells in reversing age. Silencing certain stem cells, for instance, can restore pre-senescent (or inactive) stem cells in human muscles (Sousa-Victor et al. 2014, 2015). Likewise, Wang et al. (2011) examine cell re-programming through the use of lithium, which has been known to extend the lifespan of some roundworm species. The significance is specifically that lithium is being used induce the generation of pluripotent stem cells; that is, those stem cells that give rise to several different types of cells. If scientists are able to manipulate the creation of specific cells, in conjunction with a drug already known for its anti-aging potential, the implications will be varied and far-reaching. Precisely, for the fact that there has been a noted connection between human senescence and cell death, and subsequently, anti-aging treatments. Kim, Park and Sung (2009), for example, suggest stem cells as a viable therapeutic strategy for regenerative medicine.

The implication here is what this means for notions of the human body; I have tracked throughout the previous chapters of this thesis the socio-historical methods of the construction of the human, however it is further critical to mark the intervention of advanced scientific method into this process. The entanglement here of body and technology – that is, somatechnics – is critical here, precisely because the manipulation of telomeres, chromosomes and

mitochondria by targeted human intervention, raises questions not only of what it means to be human, but further, how human-ness is cultivated, tamed – to use Derrida's language – and critiqued through restoration of properties of [hu]man. Specifically, if efforts exist to manipulate the body at a genetic level, with the aim of preventing the aging process, questions concerning normative bodies, idealised corporeal standards, and surveillance of age must be raised. Indeed, the very notion of properties of [hu]man, in a Derridean sense, must be called into question.

As discussed in Chapter 3, Derrida problematises the notion of what is proper to [hu]man:

> one must not be content to mark the fact that what is attributed as "proper to man"
> also belongs to other living beings if you look more closely, but also, conversely,
> that what is attributed as proper to man does not belong to him in all purity and all
> rigor; and that one must therefore restructure the whole problematic (Derrida 2011,
> p. 56).

It is crucial to mark this here because notions of ethics are often predicated upon stable categories of the human as a marker of what scientific and medical practices can be carried out upon which types of creatures. For this destabilisation of the human, Derrida argues that 'humanity is only a word, then, a name in the name of which particular and momentary interests of particular states are being served' (Derrida 2011, p. 72). This statement is quite powerful and adequately sums up the biopolitical caesura of (hu)man from animal, where the sovereign purposely constructs certain bodies as beast – as examined above – to reach a desired goal. Indeed, Schmitt (2008, p. 54) furthers:

> the "concept of humanity" is an especially useful ideological instrument of
> imperialist expansion and in its ethical-humanitarian form it is a specific vehicle of
> economic imperialism. Here one is reminded of a somewhat modified expression of
> Proudhon's: whoever invokes humanity wants to cheat. To confiscate the word

humanity, to invoke and monopolize such a term probably has certain incalculable

effects such as denying the enemy the quality of being human and declaring him to

be an outlaw of humanity and a war can thereby be driven to the most extreme

inhumanity.

While this passage invokes us to reminisce on the Holocaust and other tragedies such as the

Rwandan genocide, I find this applicable in the eradication of aging through somatechnologies.

Particularly when Big Pharma, the medical industry and large conglomerates such as the

GeroScience Network and Calico aim to achieve the goal of human immortality. At times, the

framing of this goal is altered linguistically into 'prevention of mortality' (Howard 2015),

precisely to further legitimise this pursuit. That is, in medicalised terms, the strategy here is to

prevent rather than *'cure'*, and rather than alluding to mythical narratives of immortality –

which are largely ignored by medical and scientific communities – the use of the word *mortality*

implies a familiar problem with which most medical practitioners deal at some point in their

career.

Thus, this reframing facilitates the positioning of aging as a disease, old age as a disease-state,

and the emerging treatment protocols as a necessary 'cure'. As Lafontaine 2009, p. 55) argues,

'associated with death and degeneration, old age now seems like a medical defect or a curse

against which one must struggle'. To achieve this goal of mortality prevention, the first step

has been to construct the elderly as a form of social enemy and declaring those deemed 'old'

as outlaws of humanity in a Derridean frame; that is, though the discursive declassification of

aging as a proper characteristic of the human. Further, through the construction of categories

of age, whereby the Fourth Age is synonymous not only with frailty and decrepitude, but also

with loss of social and economic productivity. In this way, those identified within the Fourth

Age are distanced from all other age categories for a perceived inability to contribute

meaningfully to a neoliberal society.

It is possible, as well, to conceptualise the presence of Calico, and their research, as an embodiment of Levinasian reduction; that is, through the attempted acquisition of immortality and the delegitimation of the elderly body, Calico's research ultimately aims to reduce the Other to the Same; in this instance, the Same is embodied as 'youth'. In this same way, this reduction can also be conceptualised through a Derridean frame as the mobilisation of the sovereign's power to construct specific ideals of the human and thus to construct certain human bodies as nonhuman. Furthermore, this can also be a denial of face and as enabling violence, for as Levinas states, 'violence does not consist so much in injuring and annihilating persons as in interrupting their continuity, making them play roles in which they no longer recognise themselves, making them betray not only commitments but their own substance' (Levinas 1979, p. 21). While it must be recognised that any anti-aging technology is thus far optional, the discursive construction of the elderly as diseased enables discourses of reduced economic value, reduced capacity for labour and action, and ultimately, reduced social value.

The discursive construction of the elderly in this way allows the option of anti-aging technology to become not only desirable to the elderly, but also *necessary*. This construction of the necessity of these anti-aging technologies formulates the violence described above, where the elderly – and those who will one day become 'old' – are discursively persuaded to utilise such technologies to remain of value to society. It has been argued that the rapid development of such technologies has seen a lag in ethics surrounding the legal and social implications (Ebbeson et al. 2006). The ethical lag is somewhat unsurprising when notions of who and what shall be entitled to ethics continually changes, as does the bestowal of rights. Further to the development of anti-aging somatechnologies are the critical roles of nursing homes. Examined in Chapter 2 as institutions perpetuating the gerontological hygiene, I further

argue here that these hygiene practices are evident within these institutions such as Australian companies Regis and Aveo. Specifically, I presently expose the ways in which they violate ethical practice through modes of medicalised surveillance that ultimately disallows the elderly possession of their own body. In addition, certain definitional terms and policies are drawn upon to demonstrate the profound way ageist discourse permeates these institutions, and further, influences the ways in which old age and the elderly are understood and treated.

Elder abuse has been a known issue within certain Australian, Canadian and U.S. convalescent homes for some time (Dillon 2017; Egan 2017; Gurnon 2017; Ibrahim and Bugeja 2017; Stigwood 2017; Yon et al. 2017). Indeed, a hidden camera investigation in a Canadian nursing home in January 2018 exposed physical violence, a staff member saying to a resident 'Die, die you bitch. You need to die now' (CBS News 2018). In the same investigation, it was revealed that other residents were locked outside in the cold and one elderly man was repeatedly punched in the head during the changing of his incontinence pad (CBS News 2018). Recently in Australia, the Law Reform Commission accepted submissions from the public surrounding Elder Abuse, which yielded some interesting results in relation to assessments of person's capacity and corporate understandings of the elderly as problem entities. Indeed, a recommendation from Victorian elderly rights group 'Elders and the Law Group' proposed that the definition of elder abuse 'be broadened to not only encompass financial, physical and emotional/psychological abuse but also insist institutions treat the elderly with respect' (Australian Law Reform Commission 2017, p. 2). The proposal here insinuates there may exist a definitional issue whereby institutions are not held accountable for disrespectful treatment under the current rubric of 'elder abuse'. Instances of elder abuse – and therefore, ethical breaches – under the current definition can be seen in the recent exposé of corporate entity Aveo (Four Corners 2017).

The Aveo Group, founded in 1952, is a corporation specialising in retirement villages, aged care and respite services, operating as a national conglomerate throughout Australia. Since its inception, Aveo has expanded to include 'over 90 retirement and Aged Care communities across Australia and over 13,000 residents' since 1995 (Aveo, 2018), solidifying their status as a leading provider in aged care. In one of these Aveo communities, Veronica Gardens, in 2017, a series of whistleblowers exposed violent elder abuse as described here. Aveo has been accused by many of its residents of various forms of elder abuse, including heightened daily fees for services such as changing a lightbulb and requesting beverages, and in at least one instance, of leaving an elderly man, John Hayto, alone in his apartment for five days following a near-fatal fall, failing to check on him as requested by family members and friends (Four Corners 2017). This, of course, is in direct violation of Aveo's *Code of Conduct* (2017, p. 1), which states that 'no employee or officer should engage in conduct that is likely to bring discredit upon Aveo'. Critically, though, various current and former residents have come forward to expose the unethical and violent practices forced upon them by Aveo. John Hayto, for instance, retold how despite requests from family members and friends, as discussed above, he spent five days on the floor after a fall. He states, 'the fact is that they were communicated to, and they didn't carry out what they should've done, that is, to come down and check me out physically' (Four Corners 2017). While this may not be standard practice across *all* nursing homes, it is important to note that institutional policies and social policies on aging enable this unethical treatment in a variety of ways. First and foremost, the discourses of disease embedded within the medical community can be seen to permeate the development and deployment of certain aging policies, whereby the treatment of an individual is inextricably connected with their age category (that is, either Third or Fourth Age). As another Aveo resident of Veronica Gardens states, 'Retirees are supposed to be easily manipulated, conform, obedient, non-

complaining, compliant, all those sort of things, and I wasn't any of those and they felt threatened by me because I didn't fit their stereotype [....] of a typical retiree' (Four Corners 2017). The experiences of residents such as Gwyneth and John demonstrate the ways in which discourses of age are enfleshed onto certain bodies, thus enabling specific biopolitical regimes of governance. The purposeful disregard for John's health and safety indeed expresses Aveo's position as sovereign with the ability to 'let live or make die' (Foucault 1976, p. 240). Further, this act of speaking back in a public form of resistance is quite powerful and resonates clearly with the concept of 'space of action', as defined by Daudi (1986) and deployed by Nadesan (1996). Nadesan outlines a space of action as a striving for 'freedom, autonomy and for personal interest' (2014, p. 59). The whistleblower residents of Aveo are essentially reclaiming their agency within the space of the aged care facility, thus demonstrating 'a conscious decision to be the subject that decides, as opposed to an object that is decided upon' (Nadesan 1996, p. 59). However, it is important to further understand that, as Foucault and Nadesan note, 'freedom is not absolute' (Nadesan 1996, p. 59), precisely because action – *political action*, as Arendt might frame it – necessarily exists within particular contexts of asymmetrical power relations.

Not only are policies and practices determined by age category, but I argue that so too are modes of violence. As such, it is critical to mark that Aveo is not the only institution in question here. A recent inquiry by the Australian Aged Care Quality Agency revealed that there are several nursing homes in Queensland that have failed inspection concerned with living conditions. An article in *Senior News* (2018) revealed a handful of other facilities, including Blue Care Pioneer Aged Care Facility, Anglicare SQ Meilene Home for the Aged, Carinity Fairfield Grange, Dr EAF McDonald Nursing Home, Cooinda House, Ozcare Villa Vincent, Forest Lake Lodge, and TriCare. With varying levels of failure, these facilities and institutions

were found to be guilty of negligence, leaving patients unclean and improperly dressed, as well as not feeding the residents appropriately, or withholding food and not managing medication safely or correctly.

In some instances, reportable assaults were not properly actioned, as was the failure to ensure residents were free from pain. Another article reported that 'a dementia patient at the condemned Oakden nursing home screamed in pain for more than two hours because the wrong catheter was used while another's broken ribs went unnoticed for days' (Donnellan & Gage 2017: n.p.). In these ways, it is shown that elderly residents in receipt of care are, at times, treated as non-human subjects, outside the realm of ethics. Further implications here are concerned with categories of age, precisely in that the residents in question above are deemed to exist in Fourth Age. Hence, in a neoliberal political economy, these individuals have failed to remain 'productive'. My contention here is that it is possible to meaningfully expose these unethical practices by framing them through the lens of gerontological hygiene. Further, to understand the complex nature of categories of age and the implications therein, I draw now upon examples of aging strategies, designed to prevent individuals from entering Fourth Age, which has previously been critiqued as a personal failure in a neoliberal framework.

The World Health Organisation (WHO) mobilised the *Global strategy and action plan on ageing and health* (2014), which details a complex nexus of strategies aimed towards facilitating the extension of the Third Age category; that is, a key strategy in the 2016-2020 action plan includes 'orienting health systems around intrinsic capacity and functional ability' (WHO 2014, p. 6). The terms 'intrinsic capacity' and 'functional ability' are key here, precisely where 'functional ability is determined by the person's *intrinsic* capacity (the combination of all the individual's physical and mental capacities)' (WHO 2014, p. 4, emphasis added).

Intrinsic, as a word, is synonymous with both natural and essential, thereby framing the combination of physical and mental capacities as entirely natural and assessable as such. I argue that no such natural capacity can be found, precisely because this mode of assessment positions *all* individuals (regardless of age) in the same parameters of mental and physical acuity. The problematic dimension here, specific to those approaching or already-within the Fourth Age, is that both mental and physical capacities are likely to change physiologically. Hence, holding these individuals to an inflexible standard can be interpreted as a violent biopolitical regime whereby the physical and mental capabilities of elderly individuals are subject to perpetual scrutiny and surveillance.

The perpetual scrutiny and surveillance is no less present in the U.S. as it is in Australia. It is critical to acknowledge the powerful American-based regimes that the WHO's *Global strategy and action plan on ageing and health* (2014) policy enforces in that context, as well. Indeed, the productive aging strategies employed in Australia are mirrored in the U.S. through the adoption of policies such as those deployed by WHO. Further, it must be noted that American aging policies have shaped the way older citizens age since the release of the original *Older Americans Act* (1965) (OAA), which was designed to protect the interests – cognitive, economic, bodily – of the elderly, which was then positioned as 60 years or over. Its doctrine states nine objectives, the second of which is useful to examine here. That is, older people shall have 'the best possible physical and mental health which science can make available and without regard to economic status' (*OAA 1965*, p. 1). The Act has been amended approximately eleven times since its inception to account for the shifts in socio-cultural understandings of the elderly and their needs. However, what is critical about the above quoted section is that there is clear evidence to suggest violations to this Act, specifically in relation to 'without regard to economic status' (*OAA 1965*, p. 1), when States like Washington average Nursing Home care

cost of US$265.00 per day (US$96,725 per year); likewise, in the State of Florida, the average daily cost of Nursing Home care equates to US$244. The price of these facilities across the United States is quite common according to nationally recognised health care calculator *Paying For Senior Care* (viewed August 2017) and this results in the lack of access to physical and mental health services for those who cannot afford these fees.

What makes this an important point is the current American context in which this money is being spent. For instance, the Economic Policy Institute recently published material that suggested Senate Republicans have blocked a Department of Labor (DOL) rule that essentially enabled working-class citizens to build retirement funds. 'By blocking the rule, [U.S President Donald] Trump and congressional Republicans block a path for retirement savings for the roughly 55 million private-sector workers age 18-64 who do not have access to a retirement savings plan through their employers' (McNicholas 2017). Furthermore, there are several adjustments currently being made to Medicare and MedicAid, where billions of dollars have been cut from funding (Altman and Benesch 2017). This means that older individuals will potentially find it harder to pay for the rising cost of healthcare in addition to the daily price of Nursing Home care. Moreover, the 2016 amended version of the *OAA* (1965) stipulates in Section 102 that integrated long-term care – inclusive of care undertaken in nursing home facilities – would be dependent upon 'the Medicare program established under title XVIII of the Social Security Act (42 U.S.C. 1395 et seq.)' (*OAA 2016*, p. 8). In this way, the current cut in funding for the Medicare program breaches the ethical parameters of policy-making and marks the presence of elderly who are economically poor – and others affected – as less-than. In a neoliberal economy where the individual-as-entrepreneur is solely responsible for their financial capital, elderly citizens are held just as personally responsible as everyone else for their own well-being.

Further, Dr Mavis Kershaw, an Australian psychology academic performed an investigation into the 'lawful assessment of a person's capacity' (Australian Law Reform Commission 2009); the findings of which revealed that the Guardian and Administration Tribunal (GAAT) – a Queensland-based government initiative responsible for 'guardians and administrators for adults with impaired capacity' (Queensland Civil and Administrative Tribunal 2009, p. 1) – was relying upon disproven '400 year old brain science' (Australian Law Reform Commission 2009, p. 6) to assess the limits of a person's 'capacity for life' (Australian Law Reform Commission 2009, p. 6). Despite the 2009 over-turning of the GAAT into the Queensland Civil and Administrative Tribunal (QCAT), it must be noted that the outdated brain science was in operation within this sector of the government for quite some time, until the Bar Association of Queensland (BAQ) raised concerns about government policies surrounding capacity-based adult guardianship. The use of this outdated understanding of the brain – and the co-implication with the individuals 'capacity to life' – or in a Foucauldian (1976, p. 240) frame, 'let live or make die' – facilitates gerontological hygiene, that is, by positioning these persons as essentially incapable of life, based on outdated medical understandings of the brain, certain rights and liberties have been removed, in the name of "care". While the GAAT has been re-branded to the QCAT, I argue the practices remain similar, where the QCAT document itself states that the 'QCAT must make decisions under the *Guardianship and Administration Act 2000 [(GAAT)]* in accordance with the principles that previously guided the decisions of the Guardianship and Administration Tribunal' (Queensland Civil and Administrative Tribunal 2009, p. 2). Hence, the same guidelines employed by its predecessor are to be invoked in the remodelled version. As such, I argue that the gerontological hygiene practices employed by the GAAT continue today under the revised rubric of the QCAT.

While the QCAT is specific to Queensland, it is important to note the broader assessment guidelines afforded to the rest of Australia. Indeed, the Australian Government employs the *Aged Care Assessment Programme Guidelines* (May 2015), by which a person's capacity for *independent* life is assessed in accordance with the Act. What is critical to mark here is that the Act purposely does not define 'old age'. While this technically appears to provide flexibility in admission and assessment practices, the Act further 'referral to an ACAT of a person *who is not an aged person* can occur where the person meets the eligibility criteria for aged care services' (Australian Government 2015, p. 14, emphasis added). I argue this statement negates the flexibility offered in the removal of a specific age range, specifically by positioning 'an aged person' as somewhat self-evident. The term 'aged' is deployed meaningfully here where the characteristics and qualities of an 'aged' individual will appear *a priori*, thus marking the aged again as existing within the Fourth Age, and in a visible disease-state.

Moreover, the WHO action plan is arguably predicated upon notions of the Fourth Age, where it boasts the creation of age-friendly environments. While it cannot be argued that these spaces are *never* necessary, what I find problematic here is the language used to deploy these spaces. That is, the action plan states that:

> [b]ecause age-friendly environments promote health, remove barriers, and provide support for people experiencing losses in capacity, they can ensure older people age safely in a place that is right for them, are free from poverty, can continue to develop personally, and can contribute to their communities while retaining autonomy and health (WHO 2014, p. 7).

On face value, this sounds quite pleasant and appears to move toward an ethical relation in the treatment of older individuals, specifically in the mention of 'retaining autonomy and health' (WHO 2014, p. 7). However, I argue that this does not actually occur in practice. In institutions such as Regis and Aveo, the notion of 'autonomy' must be placed in scare marks, precisely in

terms of medicalised surveillance and quarantine; that is, the movements of residents are tracked, controlled and regimented, as well as diets and medicinal frequency and intake, as was examined in Chapter 2. Furthermore, while the *Four Corners* report mentioned above positions the residents in Aveo care as vulnerable, the footage also tells a different story; that is, several of the residents are, in fact, forming a pocket of resistance to biopolitical regimes of gerontological hygiene. In the episode titled *Bleed them Dry* (Four Corners 2017), many of the residents actively speak back to the violence and unethical practices they endure, with one resident, Monica Johnson stating, 'Some of them who have moved out have said it's like getting out of prison' (Four Corners 2017) and further, referring to Aveo Veronica Gardens community as 'Stalag 13' (Four Corners 2017). These testimonies underscore my framing of nursing home sites as aligning within Agamben's concept of the camp, reformulated into the compound under a neo-eugenic regime.

As such, it is my contention that institutions such as Aveo and Regis offer little protection to their residents, particularly concerning ethical behaviour and conduct. Indeed, Aveo's *Code of Conduct* (2017), a short 6-page document, briefly outlines the corporation's responsibilities and requirements concerning ethical and fair behaviour. However, there is a concerning lack of acknowledgement of the ways in which this 'ethical and fair' behaviour corresponds to residents within Aveo's homes. Rather, in true neoliberal fashion, the document considers investors, directors, employers and stakeholders. While there is mention of the 'broader community' within the 6-page policy, the relevance of conduct towards residents specifically is not mentioned; the policy primarily outlines the responsibilities that Aveo holds towards those with controlling interest in the company. Regis, on the other hand, specifies that their 'Code of conduct' (2014) applies to residents as much as it does employees, government,

suppliers and shareholders. However, again, there is little evidence of the specific ways in which conduct towards the resident is expected to manifest. Indeed, the policy states,

> When dealing with others, you must:
>
> • perform your duties in a professional manner;
>
> • act with the utmost integrity and objectivity; and
>
> • strive at all times to enhance the Company's reputation and performance (Regis Aged Care 2014, p. 6).

While there is nothing legally *wrong* with the above description, it remains quite broad and non-specific. The absence of any day-to-day treatment protocols marks a significant lack of attention to the manifold ways in which Regis operates as a site of medicalised quarantine[49]. Furthermore, the *Continuous Disclosure Policy* (2014) disavows the need to disclose company decisions and ventures to the residents, in that the policy contains mention only of shareholders, employees, and government. Aveo's policy of the same name (2017) does the same. The deliberate absence of this information enforces a market-driven approach, whereby the residents become invisibilised, unless they hold shares with the corporation.

Hence, while under the care of institutions such as Regis and Aveo, elderly individuals are thus erased from matters of company policy. I find this problematic precisely for the fact that care institutions are supposedly predicated upon principles committed to the welfare of the very subjects who are erased from these company policies. In a Levinasian framework of ethics, I argue that this invisibilisation is a form of attempted annihilation, where the elderly are positioned as outlaw – that is, outside the institutional laws of both Regis and Aveo, thus furthering my earlier remark concerning an ethical lag. In this context, the lag in ethics

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[49] The notion of medicalised quarantine has been examined in Chapter 2. The purpose of its mention here is to detail the ways in which institutional policy enables and facilitates modes of medicalised quarantine, specifically through the omission of the voice of elderly residents.

facilitates the violent quarantine treatment protocols examined earlier in Chapter 2, as well as further enabling gerontological hygiene by omitting the existence of the elderly from corporate constitutions and policies. I argue that these omissions thus render the elderly as beast in the structure of the sacrificial economy discussed in Chapter 3.

Indeed, throughout this chapter, the ethical lag has been demonstrated in a multitude of ways, though specifically through an analysis of the construction of the human. With specific focus on the theoretical frameworks of three foundational figures – that is, Heidegger, Arendt and Derrida, as discussed in Chapter 3 – with the genealogy of both humanism as a concept and the human as a category. This chapter has effectively elucidated the violent discourses and practices that produce certain bodies as human to the expulsion of all others – here, the elderly. I have problematised the category of the human – and will continue this line of inquiry in the thesis conclusion – through tracing the various historical definitions and marking the various unethical processes – such as legal, economic, racial, gendered, medical and scientific – that produce a small portion of human bodies as not only acceptable and normative, but also as categorically human. The genealogy provided in Chapter 3 denotes a common factor in all accounts of the human, that is, an essence that separates human from nonhuman, which effectively has been responsible for the construction of the human condition. Through the use of Derrida's conceptions of the beast, the outlaw, and the sacrificial economy structure, this chapter has effectively extrapolated the manner in which those 'suffering' the Fourth Age are mobilised as diseased. Thus, the inter-relation between anti-aging somatechnologies and current medicalised care facilities – here discussed in the context of Regis and Aveo nursing home groups – produces the elderly as afflicted with a treatable condition. The treatment protocols discursively enforce neoliberal and ableist understandings of corporeal normativity and the body as a flawed and fetishised assemblage.

Similar to what Mitchell and Snyder (2006) claimed in relation to disabled bodies, these institutions further demarcate the 'marked body' (Mitchell & Snyder 2006: x) through 'sites of violence, restriction, confinement, and absence of liberty' (Mitchell & Snyder 2006: x). A critical distinction to make here, though, is that between old age and disability. While it is possible to categorise old age as a disability – as was seen earlier in this chapter – through understandings of cultural productions of normativity, a critical point of departure is that according to New Disability Studies (Garland-Thomson & Stoddard Holmes 2005), the medical model of disability is undergoing a transition towards the social model. That is, where disability was historically constructed through eugenic regimes (Mitchell & Snyder 2010) as a medical problem, contemporary studies are relocating disability so that it may be understood firmly as a social and cultural construction. In contrast, old age, as this thesis has thus far tracked, can be seen as shifting *to* a medical and scientific model. This shift in part accounts for the gerontological hygiene movement, which I have argued is facilitated through the discursive production of anti-aging 'cures' and 'treatments' as *needed*. This chapter has also engaged with Levinasian ethics to demonstrate the existence a violent regime of erasure, whereby the elderly – and old age itself – are targeted as improper characteristics of the human.

It is interesting to note that within these discourses of the human, the notion of 'the human condition' has remained largely unchallenged until recently. The absence of such a challenge positions the human as ahistorical and formed in nature. Furthermore, it enables the mythology of Heidegger's essence, which perhaps provides somewhat of an explanation for the reluctance to move towards either trans- and/or post- humanity through the erosion of distinct 'human' borders via the development and deployment of somatechnologies. The convergence of technology and humanity is what comes to be at stake in contemporary questions of the human,

and indeed, contemporary questions of ethical practice. Precisely because technologies are finally forcing the human to acknowledge its historicity, its discursive construction and its potential for alteration. As Grunwald (2005, p. 195-196) suggests:

> [d]evelopments of this type raise the question of humanity's self-concept, which is of great ethical relevance. In […] technological visions, aspects repeatedly occur which blur the boundary between what human beings are and what they create with the help of technical achievements and applications. Such visions pose the question, to what extent technical or partly technical can partly biologically-constructed man-machine chimeras lay claim to the status of a person. An entire spectrum of anthropological and ethical questions follows from out of this question aspect.

It is not to further ethical questions that this thesis will turn, rather I draw briefly on posthumanism theory to mobilise emergent and untested anti-aging somatechnologies. The purpose is to acknowledge the continuing evolution of the field of biogerontology and the trajectories in both research and discourses of anti-aging. While the technologies traced in the conclusion are untested, I will demonstrate how the continued inquiry into the abolition of age will likely perpetuate posthumanist ideologies of the ageless cyborg.

Conclusion

Trajectories of gerontological hygiene

To conclude this thesis, it is first important to understand that my research topic cannot, at this time, be adequately finalised, precisely because anti-aging somatechnologies are an area of growth and development, thus in a constant state of flux. Gerontological hygiene, then, rests upon an emergent horizon, both politically and theoretically, with implications not only for the Fourth Age elderly and old age in general, but for current understandings of humanness. The purpose of this conclusion, then, is not to complete the analysis posed throughout this thesis, but to expand the discussion based on possible trajectories of gerontological hygiene. The thesis, so far, has exposed several components of the attempt to abolish age, as traced below.

In Chapter 1, I exposed the biopolitical regimes most prevalent in contemporary western societies as they relate to the production of old age and the elderly subject. Indeed, it was found that elderly subjectivity is influenced and informed by the problematic deployment of governmental and institutional policy, as well as biomedical communities. Drawing upon historical eugenics discourses, I have argued that contemporary anti-aging discourses and practices are, in fact, built upon those same discriminatory and exclusionary regimes. That is, there is a documented attempt, within scientific and medical communities, government and age-care institutions, to abolish old age. The chapter traces a Foucauldian biopolitical framework to outline and detail the historical discourses of control and governance that have directly impacted contemporary notions of old age. To pursue this line of inquiry, I traced the discursive shifts that saw old age rearticulated from biological and natural to a disease-state. Further, I mobilised the examples of Trinifinity8 and caloric restriction therapies to demonstrate the ways in which medicalised understandings of age have shifted from pseudo-

or junk-science to hard science. Finally, this chapter exposed a short history of the camp zone, as theorised by Agamben (1997), to demonstrate the manifold ways in which bodies deemed abnormal or nonproductive have previously been institutionalised and medicalised. It was critical to mark these historical moves precisely because I argue in Chapter 2 that similar proceedings are currently occurring.

As stated above, Chapter 2 argued that while asylums and other traditional institutionalised spaces of quarantine no longer exist, the discourses underpinning them are unfortunately quite active, that is, in the formulation of nursing homes, which I positioned as medicalised quarantine sites. This chapter mobilised the case study of the Regis nursing home conglomerate, operative within several states in Australia, to develop the concept of gerontological hygiene. Defined previously in this thesis as a biopolitical program underpinned by institutional, governmental and discursive dispositifs, gerontological hygiene has been shown to be concerned with neo-eugenic regimes of the abolition of old age. Importantly, gerontological hygiene is predicated upon the historical disciplining of old age in the field of gerontology, which was demonstrated to intersect the social and cultural understandings of age with medical or geriatric foundations. I exposed the ways in which nursing homes are entwined with the neoliberal agenda of self-entrepreneurialism and productivity. Further, this chapter traced the discursive framework that enables productive aging strategies, examining these as methods of gerontological hygiene through the strategic prolongation of Third Age. Categories of age were positioned in this chapter as a crucial point of demarcation and are currently understood by medical and scientific communities as underpinning conceptions of age, that is, First, Second, Third and Fourth Age, where Fourth Age is understood specifically through medicalised interpretations of frailty, decrepitude and decline. Further, this chapter traced several anti-aging somatechnologies, such as telomere- and stem-cell based therapies, thus

building on the content of Chapter 1, which exposed the growing interest of anti-aging in the hard sciences. The chapter interrogated Australian aging policy to demonstrate the problematic and discriminatory dimensions of institutionalised understandings of old age and found that through both governmental, institutional and biomedical frameworks, old age is systemically being configured as a disease-state.

Chapter 3 built on the concept of gerontological hygiene by staging an in-depth critique of humanism. The intersection of humanism with attempts to abolish old age were shown to be numerous: through exposing the problematic dimensions of a stable and trustworthy definition or understanding of what it means to be human, I was able to destabilise current trajectories of anti-aging treatment protocols. I have critiqued the field of humanism, and as a result, have found that, historically, categories of the human have been developed and managed by regimes of sovereign power. While my thesis focuses on old age, it was necessary to draw on theories and examples of race and disability, precisely to demonstrate that not only are categories of the human problematic, they are unethical and violent, in and of themselves. Biopolitically, these categories are designed to enforce power and to subjugate bodies deemed undesirable and/or unworthy of life.

Further, I drew on examples of U.S. prisoners who historically were subjected to unethical experimentation, precisely to expose the violent practices that emerge as a result of exclusionary categories of the human. The apparent historical shift in status – that is, from nonhuman to human or vice versa – demonstrated precisely what I argued occurs with elderly citizens today; that is, the bestowal or removal of human status, based on neoliberal constructions of productivity and biomedical approaches to health. Indeed, in relation to the elderly, this chapter exposed that certain categories of age are under constant surveillance and

thus, the emergence of the elderly as a medical subject comes under question. This chapter highlighted that those exhibiting 'symptoms' of old age are thus re-categorised by their biomedical status and their human status is systematically revoked/lessened, raising questions of the ethics associated with both constructions of the human and their subsequent treatment.

Chapter 4 staged an ethical inquiry into emerging anti-aging somatechnologies and related institutional policy. Through this chapter, I exposed the critical relationship between ethics and biopolitics. That is, various somatechnologies – such as telomere-based therapies, stem cells therapies, caloric restriction and adipose therapies, and pharmaceutical interventions such as the repurposing of Metformin and Rapamycin – are emerging to essentially abolish old age. According to Levinasian ethical philosophy, we each hold a responsibility to the *absolutely* Other to ensure we do not place them under our own categories. In this way, I argued that the removal or abolition of old age raises profound ethical questions. Further, anti-aging somatechnologies, underpinned by discourses of normativity, raise further questions concerning precisely what it means to be human. As mentioned in the thesis Introduction, I would like to mention that these advanced technologies do enable older people to function with certain types of disabilities and 'symptoms' of old age, however my argument has been that these technologies seek to imitate the 'ideal' human form. That is, even though it can be celebrated that these technologies can re-enable independence for a time, it must be acknowledged that within biomedical discourses, the self-assessment and self-surveillance processes have already begun. It is these processes and the underlying discourses I have tracked in this thesis – such as removal-as-necessary, the sick role and old age-as-disease – that establish and perpetuate categories of the productive, or non-productive, human, and which enable the development of these technologies. Hence, while I do not argue that enabling older people to function with disabilities is negative, I would like to emphasise that the emergence

of these technologies is heavily predicated on notions of the ideal human and thus, perpetuate gerontological hygiene. I have argued that these technologies emerge within a nexus of biopolitical, governmental and neoliberal regimes that suggest getting 'old' is a problem in need of intervention – technological or otherwise. Throughout this thesis, I have challenged where the line between young and old is and how this line is both constructed and maintained. The creation of somatechnologies, for the abolition of old age, simultaneously reinstates notions of the normative form. Drawing on historical accounts of unethical medical practice, this chapter was able to expose parallels between xenotransplant patients and residents of nursing home conglomerates Regis and Aveo. The parallels were precisely in the way these individuals are often constructed as beast, or animal, and are thus offered up to the 'altar of anti-aging' as commodities.

My key arguments across the thesis chapters are highly interconnected and serve to critically engage with the overarching thesis research question; that is, do anti-aging somatechnologies play a role in the abolition of old age? As such, Chapter 1 sought to unpack my thesis question by mobilising a discourse analysis that enabled a detailed tracking of the ways in which historical and contemporary discourses of aging are located within a medical framework. This chapter deployed a key argument that suggested contemporary medicalisation practices are heavily reminiscent of historical eugenic practices and it was found that by looking at these, it is possible to understand the trajectory of developing anti-aging technologies and discourse. Importantly, the inter-relation between somatechnics and biopolitics was critical in this chapter, precisely for the ways in which emerging anti-aging somatechnologies are, I argued, predicated on regimes of control over life Further, this chapter deployed the framework for understanding gerontological hygiene and the various ways in which it is enacted. Chapter 2 further examined anti-aging discourses within a medicalised framework, developing the

concept of gerontological hygiene and its implications for those already deemed 'old', and thus, 'diseased'. More specifically, my key argument here was mobilised through analysing the pseudo-scientific technology of Trinifnity8 and tangible sites of nursing homes. This chapter found that the discourses underpinning the emergence of anti-aging technologies and the shape of nursing homes operate within a nexus of biopolitics, governmentality and neoliberalism. Further, this chapter exposed some of the problematic dimensions of anti-aging technologies and sites, precisely in that they are predicated upon specific understandings of what it means to be human – indeed, what it means to be *no longer* human.

As such, Chapter 3 explored historical notions of the human and highlighted some problematic dimensions with theories of the human. It was necessary to track the various ways in which people are entitled to 'human' status, or otherwise denied as Other, in order to mobilise my key argument in this chapter. That is, through this lens of the human, I found that people deemed 'old' are typically excluded from this category based on notions of productivity, which were found to be intrinsically connected to understandings of health. Derrida's deconstruction of the concepts of the [hu]man and the animal was essential in answering my thesis question, precisely because notions of gerontological hygiene are predicated upon the discriminatory discourses that position hierarchies of life. Critically, this chapter connects to the overarching thesis question through understandings of the ways in which gerontological hygiene was able to emerge based on understandings of who is no longer seen as fully human. This chapter introduced the notion of ethics to lay the framework for Chapter 4. The key argument in Chapter 4 surrounded notions of unethical treatment of older individuals based on universalised healthcare, universalised and *a priori* assumptions of what constitutes 'old'. It was found that the field of biogerontology rests on the systematic dehumanisation of elderly individuals. Further, through making this argument, this chapter teased out the inter-relations between

biopolitical governance and anti-aging somatechnologies in order to examine the critical space between biopolitics and ethics. This enabled me to further expose that older people are often excluded from categories of ethical treatment based on biopolitical regimes of surveillance and hierarchies of life. I did this through specific analyses of case studies tracking elder abuse and though the critical deconstruction of several institutionalised and governmental aging policies.

Each chapter details the biopolitical forces that have already been assembled in the attempt to abolish old age. However, certain questions arise from my chapters that have thus far been left unattended. That is, one might consider the restoration of youth, or the prevention of decline as solely a positive step in the evolution of the human. As such, I will now re-enforce the statement made in the thesis introduction and answer the question: why should old age *not* be abolished, and further, why should we attempt to conserve aging?

Why should old age *not* be abolished?

A recurrent, implicit assumption throughout the thesis is that prevention, or the 'curing,' of old age is a bad thing. In the thesis introduction, I stated that this is not my goal. I have not intended to mobilise the notion that we should not get old and die, or that somehow the removal of old age is *inherently* negative. Rather, what I contend throughout this thesis is that western biomedicine, biogerontology, age-related governmental policy and aged-care nursing homes are proceeding down a dangerous path; I make this argument precisely because of the visible inter-relationship between historical eugenic programs of hygiene and contemporary discourses and practices. The anti-aging project, what I have named gerontological hygiene throughout this thesis, is predicated upon problematic biopolitical regimes of surveillance that seek not simply to prevent the onset of frailty, decrepitude and illness – described throughout this thesis as Fourth Age – but further, aims to reify traditional conceptions of what it means

to be a healthy human. Within discourses and practices of anti-aging is the abolition of old age-as-disease and disability in favour of an idealised youthful form. The problematic dimensions of this, I have argued, rest in the intersection of biopolitics with neoliberalism.

As I have demonstrated in my chapters, productive aging strategies for the elderly are specifically designed to increase individual productivity, whilst simultaneously the elderly are encouraged to self-assess their health and needs. Once an individual is situated within the medicalised space of the nursing home, a process of both self-surveillance and institutional surveillance aims to ensure not only the normative heath of the individual in question, but more critically, their burden on the healthcare system. The neoliberal framework mobilised throughout the thesis has documented the ways in which the self as capital has permeated public consciousness as a dominating discourse.

The development and deployment of anti-aging somatechnologies, as I have argued, operate in parallel with the above strategies, thus formulating another dimension to the assault on aging, or what has come to be known throughout this thesis as gerontological hygiene. Ranging from immersive technologies that rewrite mtDNA codes to pharmacological intervention, these somatechnologies are, I have argued, underpinned by neo-eugenic discourses of hygiene and abolition. This thesis has aimed to expose the dangerous biopolitical regimes, seemingly undertaken at the expense of the already-old, precisely through the pathologisation of their entire bodies. I have, at times in this thesis, drawn parallels between the biopolitical governance of old age with that of disability precisely to mark the dangerous territory that has already been navigated, thus further exposing the ways in which treatment protocols are following these same trajectories. As such, aging in general, but more specifically old age, has come to be understood wholly in negative terms. It is this framing of pathologisation that enables the

emergence of anti-aging somatechnologies. Further, it is my contention that gerontological hygiene, masqueraded in the form of healthcare and rejuveneering, will continue to grow in popularity, both in the public and governmental domains and in biomedical and scientific communities.

Discourses of productive aging and the associated strategies have already impacted the design and implementation of both aging policy and somatechnologies, hence it is possible to argue that further technological interventions will be soon produced. Indeed, there is evidence of this already in the form of nanotechnologies, which appear just on the horizon of technological advancements. In this way, I argue that the quest to abolish old age can perhaps lead to the emergence of the cyborg; that is, through the somatechnological intervention of old age – and aging more broadly – notions of what it means to be human will likely alter. This posthumanist trajectory is quite plausible, precisely because the inter-relationship between human and technology, through nanotechnologies, enables the production of new corporeal forms, and importantly, new subjectivities.

Posthumanism, in brief, is a theoretical framework exposing the fusion between organic human with intelligent machine. N. Katherine Hayles is largely acknowledged as the founding figure of posthumanist theory, particularly in her work *How we became posthuman* (1999). In this seminal text, Hayles draws out the relationships between human and technology, the implications of forging new technological identities and critiques the notion that we were ever, in fact, simply 'human'. Chapter 3 of this thesis dealt with similar questions, though from a different perspective. Where Chapter 3 destabilised historical and contemporary notions of the human as a category from a biopolitical framework, Hayles operates on a different end of the continuum that positions the human as constituted by the human/machine nexus. A

posthumanist perspective is important here, precisely because Hayles argues that we are always-already posthuman; we are *a priori* enmeshed with somatechnologies and are thus, not able to ever exist as a 'pure' human.

In light of the somatechnologies this thesis has traced and the emergent technologies appearing on the horizon of development, posthumanist assumptions of the cyborgic figure are increasingly relevant. Futurists such as Ray Kurzweil tend to advocate for a posthumanist, and sometimes transhumanist, approach to technology (Kurzweil 2000, 2005, 2006). Hayles (1999, p. 279) argues that 'the posthuman tends to be embraced if it is seen as preserving agency', which is an important question surrounding the development and deployment of advanced technologies. The biopolitical implications here must not be overlooked, precisely because posthumanism is also concerned with the notion of consciousness; that is, a common theme thus far has been the gradual evolution of the human brain to be indistinguishable from an intelligent machine. Biopolitically, there are questions surrounding the parameters of consciousness; firstly, who/what shall be deemed conscious? And secondly, who/what will be deemed worthy of *keeping* their consciousness, should it become possible for this to be downloaded/uploaded into either a digital platform or a newly formed mechanical body? In the following section, I expose the disturbing biopolitical relations at stake here in terms of the preservation of agency at the expense of the body, particularly in relation to anti-aging somatechnologies.

Emergent Technologies

One of the critical moments in this thesis has been the destabilisation of notions of the human. As seen in Chapter 3, I have questioned concepts of rationality and the logocentric, anthropocentric construction of both human and nonhuman. Underpinning the concept of

rationality, for Heidegger, was the concept that humans are conscious, and animals are not, as espoused in his meditations on world. This was problematised throughout the chapter in that I demonstrated how certain bodies in western history were dehumanised through the systematic (re)-construction of consciousness as belonging primarily to the white, the male, the abled and the young. While I problematised the exclusion of certain bodies and exposed the unethical biopolitical regimes at play, the concept of consciousness remained largely unchallenged, precisely because it has been critical to examine anti-aging somatechnologies and discourses as they currently manifest; that is, it would be problematic to suggest that active aging programs treat the elderly as though they lack consciousness, specifically because this is not the case. Likewise, technologies such as telomere therapies and TAME – as detailed in Chapter 2 – do not assume older individuals are unconscious.

Indeed, I would argue these strategies and technologies acknowledge the consciousness of these individuals in an effort to preserve it or *save* it. In this way, productive aging strategies and anti-aging somatechnologies seek to delay the onset of the gradual deterioration of one's consciousness. It is important to note, though, that the discourse surrounding these strategies and technologies is that those entering, or within, the Fourth Age, are seen as at risk of losing their consciousness, and as such, are seen as at risk of becoming less-than, or entirely nonhuman. This has been an argument threaded throughout the thesis and culminates here, precisely because of the scientific research currently emerging surrounding the preservation of consciousness through technoscience. It is this model of preservation that I suggest rejuvenates the Heideggerian conceptualisation of *essence* as the foundational component of humanity, in addition to rationality, consciousness, and *Dasein*.

As such, emergent technologies concerned with notions of digital consciousness hold significant implications for the elderly, and further, for understandings of aging and death in general. Indeed, not only is digital consciousness conceived of as artificially produced intelligence (Monterege 1989), but further, various scholars have insisted that the rate of technological advancement will likely see us uploading consciousness into machines in the next fifty years (Kurzweil 2005; Goertzel 2012; Watson 2012). The notion of the Singularity (Kurzweil 2005) has come to be known as the moment that technology becomes more intelligent than humans and provides a moment whereby consciousness may be assimilated into these machines. Hence, it becomes necessary here to outline precisely how consciousness can be defined. In addition to the notions of logic, rationality and *Dasein*, as already discussed in this thesis, the field of phenomenology comes under question here. While there is much to write about phenomenology, it is only prudent here to include a small overview to underpin my analysis of emergent technologies surrounding the abolition of age through digital consciousness. Phenomenology is commonly understood as 'the science of consciousness rather than of empirical things. In other words, phenomenology [does] not look at how we collect data and then arrive at a theory, but rather at the essential nature of perceptual experience itself' (Hand 2009, p. 12). Phenomenology is commonly espoused as a movement started by Edmund Husserl with the publication of *Logical Investigations* (1900-01) and developed in the second edition. Husserl stated that:

> phenomenology must bring to pure expression, must *describe* in terms of their
>
> essential concepts and their governing formulae of essence, the essences which
>
> directly make themselves known in intuition, and the connections which have their
>
> roots purely in such essences (Husserl & Moran 2002, p. 86, emphasis in original).

In this, it is clear that the focus rests on an essentialised investigation into consciousness, which here is inextricably connected with Heidegger's concept of essence. In this manner, it can be ascertained that consciousness is anthropocentric and thus, further demarcates human from its

nonhuman Others. This sentiment is furthered through Husserl's notion that phenomenological practitioners need to radically alter their viewpoint, suspend 'world-positing' intentional acts, and then return to what he noted as transcendental subjectivity (Moran 2002, p. 2); in other words, unbecoming and reformation. In this way, one might argue that digital consciousness is an embodiment of phenomenological thought – that is, the physical unbecoming of the subject from their corporeal state and the subsequent reformation into an as-yet-unknown state.

Hence the questions arise; if we are to embrace technologies such as digital consciousness, what does this mean for the elderly? If we become literal posthuman cyborgs, if we are able to get rid of 'aged' bodies while simultaneously preserving their consciousness, what will become of the concept of age, and does this re-enforce current conceptions of old age as a disease-state? I surmise here that the biopolitical implications of these technologies are exceptionally broad, but that the condition of old age is essentially what is at stake here. I come to this precisely because these technologies follow the medicalisation of age and the growing discourse suggesting that old age is the root cause of a myriad of other diseases and bodily dysfunctions; hence, old age-as-disability has become the root condition needing medical intervention. In this way, the current trajectory of these technologies is quite disturbing.

The emergence of these more advanced technologies, while holding varied implications, can be seen to be grounded in the gerontological hygiene movement. Other technologies, such as the continuous-flow device (which seeks to completely replace the need for a heart, see Frazier & Cohn 2012), pinpoint specific health conditions and propose a solution. Digital consciousness technologies, however, operate under the assumption that these individual technologies only treat symptoms of a larger issue, rather than the cause – that is, old age. Hence, bypassing the need for reparative medical intervention, these technologies are

potentially the next phase of the gerontological hygiene movement. It is necessary to consider the familiar problematics concerning 'to make live or let die' (Foucault 1990, p. 240), precisely because at this time, it is unclear how these technologies will manifest and to whom they will be accessible. If the abolition of age is to continue, it is plausible to suggest that a new form of 'elder care' may include influencing or encouraging the elderly to partake in the consumption of such technologies – no doubt at great cost. However, this is but one trajectory of anti-aging currently underway. While much of the focus thus far has remained with digital consciousness, I would like to now turn to nanotechnology.

Digital consciousness does raise significant biopolitical questions surrounding gerontological hygiene, as I have posed above, however this technology is thus far untested and has not yet been validated. Nevertheless, the possibilities at stake in pursuing this technological trajectory are critical areas for consideration. Nanotechnologies, on the other hand, are already on the horizon and present significant opportunities for the replacement of organic body parts through cybernetic substitutes. Milburn (2006, p. 261) tells us that 'nanotechnology is the practical manipulation of atoms; it is engineering conducted on the molecular scale'. He further states that 'scientists involved in this ambitious program envision building nanoscopic machines, often called "assemblers" or "nanobots," that will be used to construct objects on an atom-by-atom basis' (Milburn 2006, p. 261). In this way, nanotechnology formulates part of a technological (r)-evolution that has been mapped throughout various parts of this thesis.

A technological revolution that, as Bergsma (2000) surmises, enables the unravelling of the human genome. In this way, '[w]e can expect DNA-manipulations, man machine combinations, nanotechnology, organ replacement and much more. We may gain the power to redesign the human body and mind' (Bergsma 2000, p. 403). Bergsma was not incorrect, as

has been shown throughout this thesis. Indeed, I have mapped technologies underpinned by the manipulation of genes and DNA, pharmacological intervention and the hybridisation of human and machine. Nanotechnology, then, formulates another component of this technological (r)-evolution, where 'these technological revolutions will allow us to transcend our frail bodies with all their limitations' (Kurzweil 2006, p. 39). Thus far, there are various examples of nanotechnologies, including:

> (i) magnetic nanoparticles (NPs) and quantum dots for labeling stem cell and *in vivo* tracking, (ii) NPs, [carbon nanotubes] CNTs, and polyplexes used for the intracellular delivery of genes (i.e., oligonucleotides) and protein (i.e., peptides), (iii) nanometre-scale engineered scaffolds for stem cell differentiation and transplantation, and (iv) nanotechnological use for tracking, differentiation, and transplantation of stem cells (Vidu et al. 2014, p. 17).

In the examples above, the implications for anti-aging technologies are easily found. That is, where previous chapters in this thesis tracked the use of stem cell and other gene therapies, the passage above outlines the developments in this area through the creation of nanoparticles. While the uses are broad and varied, it is critical to understand that within the biogerontological community these developments are pointed towards the continuing project of the abolition of old age. Again, there are biopolitical implications here. Indeed, there has been a surge in the past fifteen years in 'nanomedicine', which as of 2003 saw two thousand pending patents in nanomedicine (Wagner et al. 2006). Parts of nanomedicine rely on nanoparticles, *in vivo* tracking, nanoparticles and drug delivery (Wagner et al. 2006), as discussed above. While these nanobots are likely embedded into medications or artificially grown organs, they remain computerised technologies and such, carry concerns of surveillance, data tracking and transmission.

Elderly individuals are currently encouraged to self-assess – as outlined in Chapter 2 – based on notions of both health and social productivity. If these nanobots come to fruition, this self-assessment will likely change; our cyborgic bodies may be capable of self-diagnosis (as in the case of *in vitro* diagnostics, (Wagner et al. 2006), self-medication and perhaps even capable of storing and transmitting our personal health metadata to a third-party conglomerate. Indeed, if these nanomedicines are popularised, it is feasible to think of these as a property, under the ownership of either the government or private health institutions. The questions for surveillance are interesting to consider – will nanobots reconfigure the ways in which our medical metadata is collected, stored and shared? Further, how will these nanotechnologies fit into the current healthcare system? I argue that it is plausible to suggest these technologies will align with current productive aging strategies and perhaps streamline processes that define and determine a person's capacity to productively contribute to society, or else be 'encouraged' into a nursing home. Further, the notion of productivity is likely to alter, particularly in terms of capacity to contribute, arguably seeing an increase in strategies of inclusionism (Mitchell & Snyder 2015), as discussed earlier in this thesis. With the abolition of age through immersive somatechnologies, I envision the emergence of the ageless cyborg; that is, technological bodies and subjectivities produced through the knowledge that people will no longer *necessarily* die, or at least will see longevity extend well beyond current parameters.

A new question emerges, then, which this thesis will not endeavour to fully answer. Specifically, what is the problem with the creation of humankind as ageless cyborg? Should we not celebrate the perpetually decreasing threat of death and disease, rather than lament in the possibility? I will not offer a finite response here, precisely because this question will lead the thesis into different theoretical and political territory than that with which it has already uncovered. However, it is a useful question, precisely for the inter-relation between the

potential ageless cyborg and the question addressed above; that is, why should age *not* be abolished? The inter-relation lies in the nexus of biopolitical neoliberal governance and ethics, whereby hygienic regimes are rationalised through the socio-cultural constructed belief that youth is the ideal human form. Hence, I further argue that there is need for an ethics of anti-aging. An ethical inquiry of this kind necessarily needs to call into question the biopolitical and neoliberal ramifications of rearticulating the human as ageless. Indeed, future research, ethically, would seek to ask whether we should, in fact, aim for agelessness at all? Is it an attempt to preserve what we have come to call 'humanness' and what, then, is it about being ageless that preserves our sense of humanness? Thus, if we are to proceed with current anti-aging trajectories, there must first be an acknowledgement of the myriad problematic and discriminatory dimensions detailed in this thesis and find a way to ethically move beyond them.

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