Inequality and Discrimination in Biomedical Enhancement

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I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University

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Abstract

In this thesis I discuss how existing inequlity and discrimination has shaped the discourse on biomedical enhancement and how the bioenhancement project can potentially exasperate them. In chapter one I discuss the most common objections against bioenhancement which include issues pertaining to cheating, praisworthyness, altering the nature of activities, coercion, quick fixes, distributive justice and authenticity. I then turn to ask why bioenhancement is desirable. I argue that bioenhancement proponents uphold a narrow understanding of autonomy, namely as control and increased choices which becomes a criterion for a good life. As such, cognitive capacities are desirable to the extent that they increase autonomy and wellbeing. In chapter two I continue this thread to argue that bioenhancement advocates understand disability as inherently bad to the extent that it is incompatible with autonomy as they envision it. To assess this claim I discuss different models of disability and argue in favor of a model of disability as neutral simpliciter. In the final chapter I discuss the issue of moral status as it is a key way in which the bioenhancement literature envisions future challenges in terms of equality. I explore the similarities in how moral status is discussed within animal ethics and within the bioenhancement literature. I explore how disability and animality are constructed as problems that biomedical enhancement can address and I conclude that biomedical enhancement is inherently incompatible to disability justice.

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Introduction

There is a tendency amongst philosophers who work with bioenhancement to look towards popular culture and sci fi to explain or describe a possible problem. Designer babies could turn future human societies into versions of Gattaca or the Brave New World. A Posthuman future could include beings with X-Men like abilities and there is no shortage of thought experiments involving aliens. In some cases, this imagery reflects the enthusiasm of bioenhancement advocates or transhumanists about the promises of new technologies. In other cases, it stems from bioconservatives warning us against such a hubristic enterprise.

I was never much of a sci fi fan myself. I am also not as optimistic about what might be scientifically possible as transhumanists hope and bioconcervatives fear. This raises a question of why investigate the possible dangers and impact of something that might never take place? After all, despite the rich philosophical literature they have generated, biomedical cognitive enhancements or biomedical enhancements more generally are not currently possible, and it is unclear if they will ever be.

There have been doubts about the significance of bioenhancement as a topic of philosophical inquiry. Quendow (2010) for example raises this point when he refers to concerns over bioenhancement as a “phantom debate”. As well as questioning if there is a market for enhancement, besides individuals with narcissistic personalities he asks if enhancers could ever deliver the results the bioenhancement literature describes. In many cases, the effect of cognitive enhancers is limited to inducing mood changes whilst it is possible that we might never be able to safely separate the increase of desirable traits from simultaneously causing impairments. While Quendow does not directly criticize the content of the ethical considerations put forward, he asks if “we really need a debate on a technology that will probably never materialize?” (2010, p156)

What I hope to show throughout this thesis is that the value of these discussions surpasses the scope of cognitive bioenhancement and bioenhancement. The principles and values that underlie enhancement and which are the subject of philosophical investigation extend to practices that are not only scientifically possible but often, well established. Conversations about the permissibility of assisted dying, prenatal screening or the use of reproductive technologies often rely on shared assumptions on wellbeing, which lives are worth living and why, which traits are desirable, what our attitudes should be towards human and non-human beings who do not exhibit them or exhibit them differently and what are they owed as a matter of justice.

This shows how even if bioenhancement is not currently an established practice, the same principles that run through it have very tangible impact to real, existing people when they operate through other medical practices such as the above. Bioenhancement can serve as the magnifying glass providing a new lens in examining how inequality and oppression manifest in existing and future practices. By investigating how the bioenhancement project perpetuates inequality and discrimination, we can detect in what ways existing technologies show similar shortcomings.

In other words, what I find fascinating about the bioenhancement literature is how it relates to some very old questions about what it means to be human, why is it important, which lives matter and what does it mean to recognize others as our moral equals.

However, throughout my research, the more I engaged with the existing bibliography the more I became disheartened by the way these questions were addressed. The overwhelming majority of the literature did not seem to adequately recognize and articulate what I thought were the most significant dangers entailed to the bioenhancement enterprise.

Eventually I came across Melinda Hall's book on *The Bioethics of Enhancement; Transhumanism, Disability and Biopolitics*. This introduced me to the possibility of examining bioenhancement literature by using conceptual tools from philosophy of disability. After this I engaged with philosophy of disability literature and disability studies more broadly. It soon became clear to me that disability and enhancement are intimately connected in the way they occupy opposing sides of the same spectrum. Yet disability justice has featured surprisingly little in the way that inequality and discrimination is discussed within bioenhancement literature. Bioenhancement advocates seem to either ignore disabled people or ignore the conceptual tools that have emerged over the last decades from disability studies. This is the gap that I hope my work will address.

To do so, my analysis is based on two different axes. Firstly, I will analyze and engage with arguments from within the biomedical cognitive enhancement framework itself. Secondly, I freely refer to other literatures relying on feminist arguments, animal ethics and most importantly on philosophy of disability. This is necessary as the pervasiveness of a neoliberal tradition in the biomedical enhancement discourse has left little room for a much-needed alternative angle. By this I mean that biomedical enhancement is discussed in terms that take for granted the legitimacy and desirability of a free market, the individual as the primary social unit, and a value pluralism oriented around the autonomous individual.

There is a need therefore to not merely challenge premises regarding biomedical cognitive enhancement within the neoliberal framework that contains them but rather to challenge and reflect upon the framework itself. This I take it is crucial particularly when one considers the implications of objections such as enhancement being coercive, or a quick biological individualized solution to broader social inequalities. The dominant neoliberal framework lacks the language to fully articulate these objections making engagement with other literatures necessary.

As the subject of my analysis is inequality and discrimination in biomedical cognitive enhancement, I do not attempt a comprehensive analysis and review of any particular feminist or disability discourse. Rather, I have chosen to engage with ideas and authors within these fields based on how well they lend themselves to a useful analysis of biomedical cognitive enhancement. In particular, I borrow from these literatures to explore and challenge how autonomy is understood in biomedical cognitive enhancement literature as well as to underline how the very demand for biomedical cognitive enhancement is heavily shaped by unjust relations and structures that these literatures have addressed.

Although I predominantly focus on biomedical cognitive enhancement, the issues I highlight extend to other potential spheres of bioenhancement. What biomedical cognitive enhancement does is to exacerbate these issues that run throughout the bioenhancement enterprise because of the central role that our cognitive capacities have in our self-understanding as a species.

Biomedical enhancements broadly speaking, aim at making better humans or rather as Hauskeller (2014) explains, they aim at making humans better in respect to a certain capacity. This project can accommodate a variety of different goals, from humans that live longer, and are resistant to certain diseases, to humans that are stronger, smarter or more attractive. At first glance these are goals that sound well worthy of pursuit. If anything, there is a plethora of established practices already sharing these aims. Surgeries, vaccinations, pharmaceutical drugs are routinely used in an attempt to keep us alive and healthy for as long as possible. Educational institutions help us cultivate and maximize our intellectual potential, we celebrate elite athletes for the physical capacities they show and there is a plethora of cosmetics- from makeup products to elective surgery- to help us change our appearance.

Within the literature of biomedical enhancement and its diverse potential pursuits, cognitive enhancement has enjoyed a prominent position as its supporters promise an array of benefits. Although there is not one specific definition shared by everyone, biomedical cognitive enhancement is generally understood as the use of biomedical means varying from drug administration to embryo selection in order to increase functions relating to the collecting, storing and processing of information.

Buchanan (2011b, 2017), Savulescu, Sandberg and Kahane (2011), Harris (2007), Cakic (2009), Giublini and Minerva (2019) are amongst those who in their work explain in depth how biomedical cognitive enhancement can support and further goals extensively pursued and celebrated through traditional means of cognitive development such as education. Cognitive bioenhancement, they claim, could create benefits experienced in both an individual and a social level. Individuals would be better equipped to reflect or make use of their instrumental reason and pursue their chosen life goals. They would be better equipped to access and compete for desirable social goods such as greater salaries or careers as they would be able to perform better than ever and better than others.

Positional goods like these aside though, biomedical cognitive enhancement, according to its advocates could also bring about numerous social goods. Loss of income or even loss of lives is often attributed to underperforming cognitive functions, an improvement upon which can have a significant social benefit. Pilots or surgeons with increased cognitive capacities could have a higher success rate or minimize risks providing us with better healthcare and safer traveling benefiting a broader social whole. Drivers could stay alert and focused for longer curtailing the number of road deaths due to accident or negligence. People could even become better at budgeting by improving relevant capacities such as risk assessment or impulse control. Finally, people with lower cognitive abilities or even people with cognitive disabilities would see a vast improvement in their wellbeing. Not only would they be enabled to compete in a more even playing field through accessing cognitive bioenhancement themselves, but they would also be enabled to lead independent lives and enjoy the instrumental and inherent value of increased intellect.

These potential benefits are so promising that some of the scholars advocating for them such as Harris (2007) and Savulescu (Savulescu et al., 2011), go as far as to claim that cognitive biomedical enhancement is not only permissible but might even be a moral obligation. Transhumanists like Bostrom (2008), even argue that biomedical enhancement can pave the way for new scientific practices that could mean benefits and pleasures that we as unenhanced humans are not even capable of fathoming.

However, in spite of the many enthusiastic advocates of biomedical cognitive enhancement there is a number of scholars who are more apprehensive about the alleged benefits biomedical cognitive enhancement can bestow. Some argue against the idea of biomedical enhancement whether cognitive or other in principle. They warn against biomedical cognitive enhancement as a whole, concerned how it may bring a cosmic change to our moral universe that could undermine fundamental ways in which moral and political claims are made. Sandel (2007), Fukuyama (2003), Agar (2010), Kass (2004) and Habermas (2003) are amongst them. Sandel warns us against such a strive for mastery that would prevent us from appreciating natural traits as gifts, Fukuyama fears that the very basis of moral claims- the X factor- that entitles all people to moral respect and dignity will be undermined, Agar talks about a genetic genocide and Habermas objects on accounts of autonomy and intergenerational relations. In spite coming from quite distinct backgrounds when read through the lens of biomedical enhancement such scholars are often grouped together under the label of bio-conservative or rather more unkindly bio-luddites (Hughes, 2004)

Nonetheless, objections in principle are not the only ones raised against biomedical cognitive enhancement as a significant part of the literature seems to adopt a more moderate approach. Most of the concerns raised are not against biomedical cognitive enhancement as such but rather call for cautious acceptance. Many of the scholars in the field are convinced of the merits such practices hold but acknowledge the various criticisms and concerns raised. Whilst happy to embrace the biomedical enhancement project, most acknowledge that as with the diffusion and utilization of any novel technology, biomedical cognitive enhancements still come with challenges and legitimate concerns.

My aim is to show that, despite concerns already being raised, the current literature still lacks tools to articulate and address how inequality and discrimination is perpetuated by biomedical cognitive enhancement. Regardless of any specific problems that might rise regarding distribution or access of these emerging technologies discrimination and inequality seem to be built in the bioenhancement enterprise itself, at least in its current form. That is because biomedical enhancement is built around a very specific and narrow understanding of autonomy as the capacity to exercise control over oneself and one's environment as a marker of a good life. Lives that do not adhere to this standard are as such devalued. This not only includes the devaluation of animal lives but also the lives of disabled people.

In chapter one I start by exploring the possibility of biomedical cognitive enhancement. The chapter is divided in two main sections. In the first section, I discuss the most common concerns about risks and dangers that biomedical cognitive enhancement can bring about or can exacerbate. Amongst these are objections that biomedical cognitive enhancement is a form of cheating, alters the nature of an activity, undermines foundations of praiseworthiness, will not be equally accessible to all, represents a quick fix to social problems and will create conditions of coercion. Amongst these, the concerns regarding distributive justice and quick fixes pose significant challenges to biomedical cognitive enhancement and are rightfully central in how concerns over inequality and discrimination are articulated within the literature. Nonetheless they are not my primary focus as these concerns understand the risks of biomedical cognitive enhancement as consequences of its application. Rather I focus on how inequality can shape the demand for enhancement as can be seen in the way enhancement is conceptualized as positional good within a context of competition that perpetuates ableist prejudice.

In my second section I move from discussions on the permissibility of biomedical cognitive enhancement to discussions on its desirability. The purpose of this section is to show how the current literature’s risk assessment approach of examining biomedical cognitive enhancement- as presented in the first section- does not address the question of why biomedical cognitive enhancement is desirable in the first place. In this section I discuss how biomedical cognitive enhancement is deemed desirable because it increases wellbeing. My aim is to show that advocates of enhancement expect that increased cognitive capacities will lead to increased wellbeing in two main ways. Firstly, by enabling individuals to better adapt to social structures and secondly, by arguing that cognitive capacities increase one’s ability for autonomous decision making.

Both premises though I would argue are objectionable. Enabling individuals to adapt to social structures does not include examining if these structures are just to start with. Moreover, as I will argue, the above reflects an extension of the neoliberal principles that dominate the enhancement discourse which dictate firstly that this narrow account of autonomy as control and increased individual choice are tantamount to a good life and secondly that cognitive capacities are important because they enable competition over social and material goods that are markers of wellbeing. However, the legitimacy of this claim and its implications remain unexamined.

In chapter two, having already discussed how biomedical cognitive enhancement is driven by an ideal of wellbeing constructed around the centrality of autonomy and facilitating individual adaptation to social environment, I expand on certain implications that this narrative has. Namely I will examine how biomedical cognitive enhancement renders this particular understanding of autonomy and the possession of cognitive capacities a criterion of what constitutes a good life. This I will argue in turn creates a hierarchical understanding of which lives count as valuable and how anyone not complying with it is excluded. I will show this by looking into disability. Disability and enhancement occupy opposing places of the same spectrum. The presumption by bioenhancement advocates that enhancement is good because it increases autonomy, control and choices is an extension of the presumption that disabled lives are bad because they embody limitations and vulnerability.

In section one I discuss how disability is understood by looking at competing models of disability such as the medical model, the social model and a model of disability as welfare. I critically engage with potential limitations and implications of these models emphasizing how they operate under the assumption that disability is something inherently bad, a presumption they therefore reproduce. In section two I examine this presumption and investigate why disability is considered inherently bad before exploring an alternative framework of disability as mere difference which presumes disability to be inherently neither good nor bad. I examine where the presumption of disability as inherently bad stems from and what this indicates about whose voices are heard and have authority in shaping this discourse. I try to flesh out similar problematic underpinnings that run through frameworks of both, enhancement examined in the first chapter, and disability. I focus on how both face similar conceptual challenges, both fail to fully appreciate social impact and both understand the body as locus of intervention.

In the third section I discuss how the reasoning behind cognitive bioenhancement is reflected in procreative beneficence which asserts the undesirability of fetuses with disability traits. To investigate the implications of procreative beneficence, I refer to women's reproductive rights. Firstly, I explain how although bioenhancement in terms of procreative beneficence places a disproportionate burden on those who would carry out the pregnancies, the relevant literature has neglected any sufficient engagement with feminist discourses. Secondly, I look at how the interests of disabled and non-disabled people are presented as incompatible or clashing. Aside from issues relating to pregnancy this can be also seen in terms of disabled people claiming a disproportionate amount of resources compared to others or to what they can produce. Even though biomedical cognitive enhancement is presented as possible way of resolving this clash, I explain that this cannot be properly understood without a broader examination of distribution patterns which the cognitive bioenhancement literature fails to do**.** I finally utilize the case of procreative beneficence to examine how the role of medical authority could change and assume illegitimate authority over what is a good life having the power to exclude and regulate anyone not fitting in that category.

In the third and final chapter I turn towards the issue of moral status. This is primarily because a large part of the relevant bioenhancement literature understands threats to human equal moral status as a primary danger of bioenhancement in general and the possibility of posthumanism more specifically. Some advocates of bioenhancement and even transhumanism claim that the emergence of posthumans is not a threat to mere humans. They claim that bioenhancement would create enhanced humans who do not pose any particular challenge to existing theories of moral status. This is because we already recognize equal moral status to people regardless of the degree in which they possess such capacities. Alternatively, there are those who worry that bioenhancement could potentially bestow a new set of capacities that would justify a higher status or, could prioritize posthuman based on their superior capacities and interest in terms of shared recourses.

Although I critically engage with these claims, my aim is not to advocate in favor of either view. Rather it is to further the themes examined in the previous chapters and show that the way discussions on moral status take place within bioenhancement literature are inherently harmful to disabled people and non-human animals. This is to the extent that they base moral consideration on the possession and performance of individual capacities. To showcase the implications that this framework entails, I have divided the chapter in the following three sections. In section one, I explore how moral status is discussed within animal ethics. In section two I turn to how moral status is discussed in bioenhancement literature to highlight similarities to animal ethics literature. This serves a dual purpose. Firstly, the arguments structuring the conversation on moral status in the bioenhancement literature mirrors the respective conversation within animal ethics. Secondly the problematic ways that animal ethics have engaged with the topic of disability can be illustrative of problematic ways in which bioenhancement literature engages with disability.

This I argue can be seen in two ways. Firstly through the Argument for Marginal Cases (AMC) which claims that there is a discrepancy between how animals and people with cognitive disabilities are being treated even when they hold comparable individual capacities. By addressing the AMC's shortcomings, I aim in showing the following things: on the one hand the *way* bioenhancement literature conceptualizes moral status upholds and perpetuates frameworks that are harmful to disabled people. On the other hand, I want to showcase how the AMC can be seen as philosophically exploiting disability. By that I mean that the AMC aims at advocating for an increase in animal welfare as animas are routinely exploited, abused and killed. However, it does that by pitting animal welfare against disability justice and promoting the former at the expense of disabled people.

A second way in which the problematic relation between bioenhancement, disability and animality becomes evident is through discussions of biomedically enhancing animals. This illustrates the ways in which disabled people and animals are placed hierarchically lower than the able bodied typical human as they cannot adhere to the central ideal of bioenhancement; namely to increase autonomy understood as control and choice. I argue that the AMC is an example of a philosophically challenged and harmful comparison of disabled people to animals which takes an ahistoric approach. What I claim can be a useful comparison is one that does not link disability justice and animal justice together. Rather it turns to examine how ableism and speciesism can operate in mutually reaffirming ways that understand disability and animality as being problems which bioenhancement can resolve.

At the final chapter, I after summing up my conclusions, I offer some final thoughts on the possibility of a future coalition between disability justice advocates and bioenhancement proponents. Although bioenhancement advocates often claim that bioenhancement can promote disability justice, I argue that enhancement in fact allows no room for disability. This is precisely due to disability being associated with risk and vulnerability, traits incompatible with autonomy and wellbeing as conceptualized by the bioenhancement literature. Not only that but this ableism that prevents an allyship between disability justice and bioenhancement is integral to the speciesism that the AMC proclaims to criticize and contributes to the devaluation of animals. Similarly to animal ethics, biomedical enhancement literature also philosophically exploits disability to promote the bioenhancement enterprise at the expense of people who cannot adhere to the normative standards it espouses.

In this thesis I have tried to highlight connections between different literatures to capture how bioenhancement literature has a very limited vocabulary for describing how it may foster discrimination and inequality as well as how they run through the enhancement enterprise itself.

In doing so, I rely on concepts such as ‘equality’, ‘normal’, ‘natural’ or ‘typical’ as well as ‘autonomy’ and ‘disability’. There are rich ongoing discourses on the meaning of each such concept. As the second chapter of my thesis is dedicated to different accounts of disability, there is no need to repeat this discussion here. Regarding the other terms, although for the purposes of this thesis I cannot provide a comprehensive overview of their history, it is important that I provide a background that would explain how I understand and use them in the following chapters.

Throughout my thesis, I refer to equality and inequality. I use these terms in two senses: distributive equality and moral equality. That is to say, my engagement with equality focuses on two distinct things. Firstly, on how bioenhancement would change the ways in which social, political, and economic goods are distributed. Within political philosophy there is no shortage of accounts on what distributive justice and equality would look like and what they should aspire to achieve. Debates on what is the value of equality, how should demands for equality be balanced against other values and most importantly what exactly is the “currency” of equality are ongoing.

Arguably the distinct changes bioenhancement would bring to distributive frameworks would depend not merely on the effectiveness, extent, and type of bioenhancement but also on how distributive equality is conceived. The capabilities approach, luck egalitarianism, equality of resources, equality of opportunities, equality of welfare are but a few of the distributive frameworks that have emerged withing political philosophy all of which would potentially be differently affected by biomedical enhancement.

My aim however is not to advocate in favor of any one concept of distributive justice nor to examine how bioenhancement would fit in or challenge each competing account. Rather, my goal is to challenge the uncritical espousal neoliberal principles by the bioenhancement literature. That is to say, I aim to unveil different ways in which concerns regarding distributive inequality- conceived in different possible ways- are left unaddressed or are disregarded as problems in favor of an account that favors the free market as the optimal way of distribution.

, I A second aspect of equality I engage with is moral equality. By this I mean I explore the principles dictating that humans are one another’s equals, on what grounds, and what does this imply for non-humans such as animals or even posthumans. I also mean this to include questions of what it means to relate to each other as moral equals, how the marginalization, or exclusion of certain individual or groups can threaten moral equality and how biomedical enhancement can exacerbate these concerns.

Another central concept that I refer to throughout my thesis and which has been vital in discussions of enhancement and disability is that of typical or normal species functioning. This refers to physiological characteristics that are precisely typically found in members of our species. Within bioenhancement literature the idea of typical species functioning has been fundamental in defining concepts such as health, illness and disability and enhancement itself. The concept of typical species functioning indicates the link between individual health and statistical normal. This can be traced back to the 19th century and the development of statistics for medical purposes in France. During that period efforts began to collect information over patients for the purposes of analyzing certain pathologies across the population to better understand them.

Adolf Quetelet, a French statistician, put forward the idea of applying “the law of error” used in astronomy to locate planets, on humans to formulate the “average man” (Davis, 1995, p.26) marking how health became understood in relation to the average within a population. The emergence of the statistically average man however created moral and social implications. As the ‘norm’ became an ideal under which the majority of the population should fall, it also started designating what is deviant and by extension pathological.

This shows how idea of normal species functioning indicates that accounts of how our species functions are not only descriptive, but also entail a normative force. By this I mean typical species functioning did not aim at giving an account of how bodies function but also to prescribe how they should function. The way that human bodies tend to function is also the way they should function in terms of their wellbeing. This normative dimension of species functioning is what characterizes the medical model of disability, as I will discuss, and has been criticized by both disability justice advocates as well as bioenhancement enthusiasts. The term typical instead of normal species functioning attempts to express precisely the doubts casted against any normative properties of statistically typical traits. Nonetheless it remains greatly influential and can be seen in different dominant descriptions of health such as Boorse’s (1977) influential account of health been determined by function and statistical normalcy or Daniel’s (2000) normal functioning basis for what health care we are obliged to provide.

A second concept that requires attention is that of autonomy. Following the strong influence of the Kantian tradition on western liberal thought, autonomy has been understood as the capacity of formulating and acting based on reasons that are one’s own. As such it is seen as a form of self- governance and self-direction Moreover, this understanding of autonomy has been conceived in terms of the individual, that is the “rational, adult (male) actors unfettered by affectional ties with concrete others” (Keller, 1997, p145).

This understanding of autonomy which centralizes independence, self-sufficiency and individualization, has becoming increasingly criticized by feminist discourses, offering alternative accounts. A principle such account is a relational understanding of autonomy.

Advocates of a relational understanding of autonomy have made a number of significant mutually supporting claims that sharply distinguish relational autonomy from the traditional account. One such claim is that people are not self-sufficient detached individuals. Unlike what the traditional account of autonomy takes as its primary unit of reference, relational autonomy recognizes how people are always embedded in social relationships and relationships of care. These relationships are partly what shape us as our “encumbered” selves. A second claim is that autonomy is exercised through and with the support of social relationships. In order to act autonomously one needs to exercise capacities pertaining to moral reasoning and cultivate certain skills such as reflection over one’s choices or imagining alternatives. However, unlike the traditional account of autonomy, relational autonomy recognizes that these capacities and skills are mediated, cultivated and learned through social relations (Friedman, 2000, p.213). Finally, a third claim that accounts of relational autonomy make is that a person’s capacity to exercise their autonomy is influenced by their social environment and can be limited by oppressive social structures.

These claims have generated accounts of relational autonomy that can be described as external and internal (Mackenzie 2021). External theories focus on how external social, political or economic conditions can impede someone’s capacity to exercise their autonomy as they may lack the power to do so. Internalist theories emphasize the internal capacities such as critical reflection necessary for autonomy and how they can be undermined by problematic social relations.

However, by placing relationships and care at the center instead of individual self-governing action, accounts of relational autonomy need tools to ensure that they do not reproduce oppressive gender norms by simply perpetuating the traditional social role of women as caregivers. Moreover, they also need to ensure that any description of alternative moral traits and ways of reasoning do not only cater to the experiences of white, middleclass heterosexual women but rather can encapsulate the diverse lived experience that women have, influenced by other part of their identity (Friedman, 2000)

The above concerns have generated a discourse regarding appropriate criteria of when someone is acting autonomously that would acknowledge the social embeddedness, shared vulnerability, and interdependence that relational autonomy focuses on, whilst also acknowledging that relationships of care are also shaped by external and internal conditions that can undermine the autonomy of the caregiver (Keller 1997).

A dominant criterion of autonomous action which the account of autonomy as self-governance employs is that person’s actions are in accordance with her broader values and preference. However, as concepts of relational autonomy point out, this is not enough to capture the different ways in which autonomy can be undermined. This is something I will further discuss within my thesis in terms of adaptive preferences. For instance, a woman might have internalized beliefs that dictate she needs to sacrifice any carrier aspirations in order to have a family or support her spouse’s professional development. As such she chooses to quit her job or reject professional opportunities to spend more time at home and this decision might be in accordance with her broader worldviews. However, this does not guarantee that her actions are autonomous as her capacities of self-reflection might be underdeveloped or distorted from dominant patriarchic narratives. This indicates a need for additional criteria, whether substantial or procedural, which would be able to detect how oppressive relations undermine autonomy without overcorrecting towards protectionism or without denying the possibility of autonomous action within a context of unfavorable social conditions.

Some of these considerations that relational autonomy has put forward can be seen within the broader field of bioethics and have helped shift focus to issues of care for questions such as doctor-patient relationship or the use of reproductive technologies (Scully, 2021, p278). Nonetheless, despite the central role that autonomy plays as a reason to pursue the bioenhancement enterprise, the bioenhancement literature following the dominant account of autonomy, understands the concept as individualized increased control over oneself and an increase of available options. Within the literature of bioenhancement, this understanding of autonomy becomes a marker of wellbeing and a goal of biomedical enhancement. As such when I refer and criticize the concept of autonomy and its function as a marker of a good life within the bioenhancement literature I am referring to this narrow version bioenhancement advocates endorse which is based on individual increased control.

This hyper-individualization that can be seen in how the bioenhancement literature understands autonomy is also indicative of the neoliberal framework that encompasses the bioenhancement project. By this I mean that the bioenhancement project shares a number of characteristics typical of a neoliberal logic, such as an emphasis on self-mastery and self -actualization.

Neoliberalism can be a challenging term to describe particularly as it can be manifest in different interlinked ways; as a specific capitalism variant, policies, an ideology and a mode of governance (Steger & Roy 2021). My aim here is not to provide a full description of how neoliberalism operates in different planes of economic, social and political life. Rather I would like to focus on certain neoliberal traits that run through the bioenhancement project as a way of better situating the objections I put forward.

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In addition to an emphasis on individual self-mastery and control, associated to the hyper-individualization above described, neoliberalism is centered around competition. Competition has been a feature of liberal theories prior to the emergence of neoliberalism. However, competition in previous liberal frameworks would operate under an assumption of equality between different actors which would be best served by the invisible hand of the market. The market was understood as the best distributor for safekeeping peaceful exchanges, governing redistribution of resources and even furthering equality (Steger & Roy 2021). On the contrary, neoliberalism as Wilson (2018) explains relies on the assumption of inequality. That is to say, neoliberalism does not recognize equality as a goal. Rather neoliberalism is built on competing for equality in the market. Wilson (2018, p56) to elucidate offers the example of Go Fund Me, where people result to crowdfunding platforms to address a variety of financial needs including medical emergencies. There they compete with others over financial support offered by members of the publis. She explains that such platforms are based on inequality as they operate by producing winners and losers.

I will argue that the same principle operates in the bioenhancement enterprise. Cognitive enhancement, as I will be discussing in the first chapter, is desirable as a positional good. This means that people want to enhance themselves or their offspring to gain a competitive advantage within the labor market and be in a better position to gain material and non-material goods. A positional good however by conception cannot be held by everyone. Rather it requires inequality and a setting of competition.

This central positioning of competition and the shrinking of social welfare operates in a mutually affirming way with the increase an additional feature of neoliberal frameworks; an increase of individual responsibility. As the role of welfare state becomes more restricted, individuals are tasked with the responsibility of taking additional control over their lives. If the object of the state is not to offer protection and support, then responsibility falls on individuals to constantly cultivate the necessary skills and knowledge that would enable them to control their lives and increase their productivity and to manage the risks associated to the choices they make.

This, as I will try to argue throughout my thesis lies in the heart of the biomedical project. Bioenhancement relies on people assuming risk assessment responsibilities. This can be clearly seen as the very desirability of cognitive bioenhancement is framed in terms of improving individual risk management activities. Bioenhancement advocates uphold the neoliberal ideas that social issues such as poverty reflect individual failures. As such bioenhancement aims at equipping individuals to better understand and assess their situations and make responsible decisions.

Moreover, bioenhancement is presented precisely as the response to the risk that human embodiment and disability in particular represent. Individuals are asked to make the responsible choice for themselves and their offspring and undertake the appropriate biomedical interventions that will shield them from potential misfortune, give them the best chances to compete for desirable goods and increase their control over themselves and their environment

Having provided some context regarding the key ideas I refer to throughout my thesis, it is important to make some final comments regarding choices I have made about what discourses I have included.

One such clarification relates to the therapy- enhancement distinction. Within the biomedical enhancement literature many pages have been dedicated trying to pinpoint if and where such a distinction can be meaningfully drawn and what would the implications be. Therapy is overall seen as something positive which is and should be legitimately pursued. What therapy does is to restore the functioning of deviant bodies to what it should be. This indicates two premises. Firstly, that typical species functioning reveals how human bodies are meant to function and has normative extensions, meaning that it also reveals how human bodies should function. secondly, typical species functioning is constitutive to our wellbeing and deviance from this standard undermines our wellbeing.

Enhancement on the one hand differs from therapy as it aims not to restore typical species functioning but precisely to deviate from it. On the other hand, though enhancement is understood as contributing to our wellbeing and as such to share the same goal with therapy. Bioenhancement advocates think of therapy and enhancement as being on the same continuum. Therapy can be understood as medical practices aiming at curing a patient from cancer. Enhancement could be seen as applying practices such as genetic alterations that would minimize or eliminate the typical chances of future generations in developing cancer at the first place.

Bioenhancement skeptics have argued in favor of typical species functioning as an appropriate line which can distinguish between the legitimate goal of therapy and what they understand as the illegitimate goal of enhancing human capacities beyond this point. Bioenhancement advocates on the other hand point out the arbitrariness of any such clear-cut distinction. They claim that if the treatment of a disease would make someone's life better by restoring certain capacities and functioning then there is no inherent reason to be against innovations that would increase these capacities passed typical species functioning, making a patient's life even better. Therapy and enhancement fall under the same umbrella of improving on people's lives.

This distinction between enhancement and therapy can have significant implications. Demands coming from accepting typical species functioning as normative have been debated not only by bioenhancement advocates but also by disability justice advocates. In my work I do not attempt to answer whether this distinction can be meaningfully upheld or what obligations and responsibilities would be generated. This is for two reasons. Firstly, because a plethora of scholars have already done so elsewhere (Buchanan 2001; Daniels, 2000: Holtug, 2011; Erler 2017). Secondly, because I do not wish to argue against bioenhancement in principle as other scholars have done, rather I am interested in fleshing out concerns over inequality and discrimination that run through the reasons behind enhancement in addition to consequences of its applications. The therapy- enhancement distinction is significant if one wants to legitimize treatment whilst rejecting enhancement. I start by granting that there is nothing inherently problematic with enhancement therefore making the distinction between enhancement and therapy not relevant to my enquiry.

A second and final issue deserving of attention is the question of whether and under what conditions could disabled people benefit from the bioenhancement project. Given my main claim, that a key problem with bioenhancement is that it perpetuates ableist narratives, I consider this issue to be of great significance. However, it is one that I only address towards the end of the thesis. The argument I make in my last chapter is that although bioenhancement advocates reassure skeptics that disabled people will be the first to benefit from bioenhancement, this does not stand up to scrutiny. Biomedical enhancement envisions a future without disability to the extent that disability is understood as vulnerability and interdependence. Advancements in bioenhancement that aim at ameliorating the overall position of disabled people do so by encouraging them to adapt to existing social and economic structures without considering if they are just or desirable. The morphological freedom promised by the bioenhancement project which would liberate form the tyranny of the normal is not sufficiently inclusive as can be seen by cases in which disabled people such as deaf parents have wished to make use of such technologies. Bioenhancement advocates similarly to animal welfare proponents philosophically exploit disability to promote their own goals at the expense of disability justice. This significantly limits the potential benefits that bioenhancement can bestow on disabled people.

For this conclusion though to be persuasive, it is important that I have sufficiently introduced and supported the different parameters upon which it rests. This involves lengthy discussions on procreative beneficence and who is invited to make use of reproductive technologies as well as engaging with discussions on animal ethics. Therefore, I have placed the discussion at the end of the thesis so that I have had the chance to adequately present the relevant discussions and arguments necessary for my conclusion to be intelligible.

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Chapter one: Biomedical enhancement

1.1 Is biomedical cognitive enhancement objectionable?

Amongst discussions of biomedical enhancement, cognitive enhancement seems to spark a particularly great interest. Although definitions of biomedical cognitive enhancement can differ amongst scholars, for the most part it is described as the increase of capacities relating to the organization of information. This can include the acquiring, processing and storing of, as well as the use of this information to shape behavior (Hauskeller, 2014; Sandberg, 201; Hildt, 2013,). Cognitive bioenhancement could be achieved through a variety of different means, including drug administration, embryo selection, fertilized gametes and IVF (Buchanan, 2011). Although so far it is drug administration, namely Ritalin and Modafinil that enjoy the widest use, being relatively cheap and accessible, this could change as other biomedical means of cognitive enhancement become more broadly available and economically viable for the public.

For proponents of bioenhancement this possibility has been hailed with enthusiasm. And why should it not? What is wrong with wanting to increase such capacities for oneself or for one's children? Increased cognitive capacities can enable someone to better understand themselves and others, to pursue interests, to further their knowledge and to obtain material and non -material things necessary for a good life. Cognitive capacities do not only allow someone to better understand how to reach her goals, but they equip her to compete with others in gaining goods.

After all, as Harris (2007), Buchanan (2011), Savulescu, Sandberg and Kahane (2011) and other vocal advocates explain, there is nothing inherently original to this idea. Even if some of the biomedical means proposed are novel, practices increasing the cognitive capacities not only of individuals but of our entire species are hardly new. Drug administration or genome editing specifically aimed at increasing cognitive performance are still relatively unexplored pathways but there is a long-standing tradition of other methods such as literacy, numeracy and public education that have been employed to increase people's cognitive capacities (Buchanan 2011).

Biomedical means are simply another way to achieve this. Cognitive bioenhancement therefore, especially if it becomes faster, cheaper and easier, should surely be a cause for celebration.

One potential concern is the scale of the impact that cognitive bioenhancement might have. However, as Buchanan (2011) explains, many changes in social organization and practices have had a tremendous and irrevocable impact on our species cognitive capacities. The agrarian revolution for example allowed for the building of larger communities and the domestication of animals leading to the development of institutions and the cultivation of pro-social behaviors. Food surplus enabled leisure and the cultivation of art. Such developments are both irreversible and impactful and, in a way, have shaped the very thing humans understand as being our nature (Buchannan 2011). There is therefore nothing uniquely suspicious or dangerous about the impact bioenhancement could have.

Apart from such large-scale practices that have shaped our species cognitive capacities, most people are happy to individually apply tools and methods in order to perform better. As Harris (2007) points out, many wear glasses or use binoculars that increase a person’s capacity to see better than they could or better than humans can in general. But there seems to be nothing morally objectionable to this. Arguably, this is not a comparable analogy as one can easily take off her glasses or one does not necessarily see glasses as part of herself in the same manner as she would see a biomedical intervention. So, it may be a case in which means do matter. However, as Harris (2007) points out people do not- for the most part- have a negative reaction towards vaccination. Since smallpox vaccines became broadly available, vaccines have been embraced and celebrated for the health benefits they bring about. Although it may seem that vaccines could fall under the “treatment” category, for Harris they actually should be classified as an enhancement as they aim at increasing typical species functioning in resisting diseases. A similar result to vaccinations could potentially be achieved via genetic enhancement in which for example HIV resisting cells are introduced to the body. This definitely would be departing form typical species functioning but for Harris there is no good reason for such practices to be rejected on the grounds that biomedical means are new and are still accompanied by the “yuk factor” as expressed in some of the bioconservative or anti-enhancement arguments.

Moreover, access to vaccines is not equally given to everyone. Similarly to education, computers or other medical treatments, before vaccines became increasingly accessible to the wider public, they were only available to the more privileged and in cases they still are. Countries' efforts to administer vaccines against COVID 19 have had various degrees of success. Such processes have brought into the spotlight different considerations and limitations that accompany various distribution patterns. The same could be observed with the distribution of PPE or ICU equipment. The fact that such recourses have been scarce and inaccessible to all who needed them has not, for good reason, given grounds to stop their distribution altogether until equal access can be offered. It is plausible that genetic interventions or any type of bioenhancement will be comparatively inaccessible to many at the beginning. This however has never been a valid reason to abandon the pursuit of such innovations altogether.

Buchanan and Harris are far from alone in arguing that there is nothing inherently novel or cosmic about biomedical cognitive enhancement, as bioconcervatives have been fearing. Biomedical cognitive enhancement advocates are quick to point out that not only are enhancements already implemented in general but cognitive enhancements are accepted through various means each of them capable of having a significant effect. From the consumption of caffeine and sugar to physical exercise, mnemonics, meditation or a good night's sleep, all these practices aim at increasing one's cognitive performance (Dresler et all 2013; Bostrom & Roach, 2011). Yet they are not viewed with such fear and opposition.

The wider use and acceptance of traditional means of cognitive enhancement, like the abovementioned, for Buchanan shows that cognitive enhancement has not only been part of human history, with irrevocable and species defining consequences, but has also been affirmed as something valuable. Current practices of cognitive enhancement are being sought after, celebrated, and regulated. The fact that education is compulsory for children, that we no longer use paint containing lead, that protective helmets are often mandatory, and that alcohol is prohibited for minors acknowledges not only the variety of both physiological and social factors that can influence someone's cognitive abilities but that cognitive capacities are valuable. It is indicative that there seem to be no regulations limiting someone's potential cognitive capacities but there is a plethora of rules, laws and policies aiming at protecting it (Bostrom & Roach, 2011)

The above account is in no way exhaustive but, I think, it accurately reflects the main line of reasoning that most scholars in favor of enhancement embrace. Biomedical cognitive enhancement, as its advocates explain, shares significant properties with other established practices. Cognitive enhancement has been increased via traditional means both involuntary and purposefully to a comparable scope, impact and irreversibility. Similarly, scientific progress of multiple sorts, from vaccines to computers has been diffused to the broader public through trial and error, with various degrees of success and carrying a number of analogous risks. The argument therefore seems to be that as long as cognitive enhancement via traditional means is considered a desirable and legitimate pursuit, then biomedical cognitive enhancement should also be accepted to the extent that firstly it promotes a similar goal and secondly it entails risks comparable in magnitude and impact to other accepted technologic innovations.

This is not to say of course that proponents of biomedical enhancement are unaware of potential threats and risks biomedical cognitive enhancement could entail. Indeed, there is no shortage of articles aiming to explain how such risks are manageable and how there is no reason to talk about a biomedical enhancement exceptionalism. Such objections vary from concerns over authenticity, unnaturalness, dessert, moral praiseworthiness, to inequality and coercion. In the following sections I will examine the most significant arguments and concerns over cognitive bioenhancement articulated withing the biomedical cognitive enhancement literature.

1.1.1 Cheating

The first objection against the use of cognitive bioenhancement, often encountered in the relevant literature, is whether it would constitute a form of cheating. This is a complex question that involves the consideration of multiple parameters including an understanding of cheating. For the purposes of the biomedical cognitive enhancement literature this objection is often described through the example of a student using cognitive enhancing drugs such as Ritalin or Modafinil. Let us assume that these drugs could increase the student’s productivity and focus in preparation of an entry exam to a prestigious university. If the student succeeds in securing a placement at her university of choice having used cognitive enhancing drugs, would she have cheated?

For some scholars such as Harris (2007), Cakic (2009) or Savulescu (de Sio et all, 2016) the answer is no. Or at least as Harris explains, not any more than students who rely on caffeine to help them concentrate. For Savulescu, the decisive factors are the specific parameters regulating each activity rather than the nature of biomedical cognitive enhancement as such. If the student using cognitive enhancement drugs is cheating that would be because the regulations of the school in question exclude such practices, rather than something inherently distinct about cognitive bioenhancement. He argues a similar case for doping in sports. The issue seems to be that doping involves a secret, clandestine drug usage of athletes against specific regulations which makes this practice cheating. The advantage that such an athlete may gain is not necessarily dissimilar than an advantage she can gain by having better facilities to train in, a better coach or more funding. Similarly, a student using Modafinil to increase her attention and productivity would not necessarily have an advantage over her fellow students that is more unfair than being able to afford private tuition for example. The difference lies in the regulatory framework within which private tutoring or state of the art training equipment is allowed and drug use is prohibited, rather than the nature of these practices as such.

1.1.2 Altering the nature of an activity

The importance of these regulatory frameworks ties in with another concern against biomedical cognitive enhancement; that it will change the nature of certain activities. A bicycle would allow for an athlete to reach the finishing post much faster than simply running. However, bicycles are not allowed in running competitions as that would alter the nature of the activity itself and it would no longer be a running competition. This again for Savulescu (de Sio et all, 2016) is something that one would have to evaluate on an individual basis.

For example, cognition enhancing drugs could plausibly be used by someone wanting to study a difficult book in preparation for an exam. It is less plausible though that someone would take an enhancer in order to read fiction for leisure or to kill some time at the airport. Cognitive biomedical enhancement would increase the efficiency with which an activity can be completed. An activity which is repetitive and menial and whose value is merely instrumental could be a great candidate as there is no inherent reason for preserving its current form. Similarly to how for instance, automation changed manufacturing processes or google search replaces spending hours in a library, there are tasks which cognitive enhancement can improve upon. Savulescu (de Sio et al, 2016) makes the distinction between constitutive and regulative rules of activities respective to their purpose. Arguably he claims even if biomedical cognitive enhancement is incompatible with the former it could work well with the later.

Nonetheless, identifying which parameters are integral to an activity is not a straightforward process. An example Schremer (2008) gives is that of a golfer named Casey Martin. Having limited mobility in his left leg, Martin advocated for an extensive use of his golf cart. This request was met with an intense discussion on whether walking is an integral part of golfing contributing to what is the sport's "excellence" and therefore whether using a golf cart would be a case of cheating or changing the nature of the sport (Schermer, 2008, p.87)

In a same way when discussing the case of biomedical cognitive enhancement in universities and whether that constitutes cheating or altering the nature of the activity one needs to assert what is the purpose and the constitutive rules of universities. For example, if the purpose of the university is to give students a degree so that they are able to better compete in the labor market, then we might be more inclined to say it is cheating. If however we take the purpose of university to be enabling students to access knowledge, cultivate their talents, interests and curiosity then biomedical cognitive enhancement could be more compatible with such aims (Danaher, 2016; Hauskeller, 2013). As Schermer (2008) concludes, apart from concerns over which facets of an activity are constitutive, what can render biomedical enhancement problematic is the extent to which an activity entails competition.

Overall Savulescu (de Sio et all, 2016) and Danaher (2016) seem to reach similar conclusions regarding the intricate relation between cheating and altering the nature of activities. However, they both argue that the best course of action might be to formally accept and recognize the use of biomedical enhancement. This would address concerns about cheating and altering the nature of activities to the extent that bioenhancement would not be done in secrete but rather through official and regulated pathways. In this way not only could potential risks be monitored, but the safety of participants could be better protected.

This I take it to reflect a commonly found argument in the bioenhancement literature. If biomedical enhancement is inevitable then surely a transparent regulative framework is better than banning such practices only to have them emerge through a backdoor as is often the case with performance enhancing drugs in sporting activities (Buchanan, 2011, p.177-181). This may often reflect valid, empirically based concerns that should be considered in terms of policy making. However, I am not completely convinced that it works as a philosophical argument in favor of biomedical cognitive enhancement as it does not discuss the desirability or merits of bioenhancement. Rather it seems to be a strategy of containment. In addition, as I have briefly discussed, accommodating biomedical cognitive enhancement might be challenging given that many practices and activities are embedded in broader cultural, social and political frameworks through which they gain meaning. Altering therefore part of what regulates and constitutes practices to accommodate biomedical enhancement might not always be straightforward.

1.1.3 Undermining praiseworthiness

A third concern closely linked to the problem of cheating and altering the nature of an activity is the concern about praiseworthiness (Forsberg, 2013). Would someone having undergone biomedical cognitive enhancement be less praiseworthy for her accomplishments than someone operating without? This shares certain similarities with issues relating to cheating or altering the nature of an activity. However, unlike cheating, the question of praiseworthiness is not about whether there is a ruling framework strictly forbidding biomedical cognitive enhancement or even whether there is an element of competition. Rather it is a matter of whether biomedical cognitive enhancement can change the basis for desert.

Going back to the example of students taking cognition enhancers for exams, I previously discussed if that would constitute cheating or enjoying an illegitimate advantage over others. Unlike cheating though, concerns of praiseworthiness do not rely on a framework of competition. Let us assume there are no regulations against enhancers and the pedagogical purpose of attending university is to cultivate our capabilities, explore new ideas and partake in the sharing and creating of knowledge. One can still question if even within such parameters a student who excelled in her course by putting in a huge amount of effort is more praiseworthy than one who excelled aided by cognition enhancing drugs and through moderate effort.

A first parameter is that the grounds of moral praiseworthiness are not always clear. We do not always value effort put in an activity over result. For instance, in sports teams win by satisfying certain formal requirements, not by trying harder than their opponents. The best surgeon is the one that manages to operate successfully on her patients. Her accomplishments would not be any less if they reflected an extraordinary natural talent rather than effort. Nor would a patient prefer another surgeon with a lower success rate on the grounds of them being more dedicated or trying harder.

Secondly and most relevant to biomedical cognitive enhancement literature, the relation between enhancers and effort is not always clear cut. On the one hand enhancers can undercut effort as is potentially the case with the student. On the other hand though, enhancers cannot substitute effort. As Savulescu (de Sio et all, 2016) points out, this is reflected in the case of steroids. Steroids may contribute to the result, but they cannot replace determination, daily training or appropriate nutrition. If anything, he argues, steroids could be seen as enabling athletes to exhibit praiseworthy traits to a greater extent. Athletes on steroids might need less rest, be able to train harder or recover from injuries faster. In this way performance enhancers enable rather than hinder effort. A similar case could be made for cognitive enhancers. Students on cognitive enhancers could be enabled to work longer hours and maintain concentration. This would not necessarily replace the effort they put in. Rather it could support them in exploring all their academic interests. What biomedical enhancement does in this situation they claim is to allow for many praiseworthy attributes to shine. Therefore, ground for praiseworthiness would still be there.

Not only that but such concerns of praiseworthiness are neither new nor unique to the case of biomedical cognitive enhancement. Success, more often than not, is a result of multiple factors at play. As many proponents of biomedical enhancement often explain, cognitive bioenhancement would not undermine the grounds for praiseworthiness for someone any more than her having access to any other social privilege. Biomedical cognitive enhancement can be a factor which is recognized as contributing to a persons' success and potentially giving them an advantage not available to everyone, but this is not a new challenge. Biomedical cognitive enhancement would not take away from the praiseworthiness of a student's success any more than her taking private tutoring would. What seems to be important is that the role of biomedical cognitive enhancement is acknowledged. In the same way that one should recognize the impact of factors such as social privileges to success the same should be done with biomedical enhancers. By doing so it may be the case as Savulescu (de Sio et all, 2016) explains that we simply need an updated set of criteria for desert that would reflect and acknowledge bioenhancement as a factor. As Dees (2008) puts it "keeping such a perspective is not difficult: no one thinks herself special because she can fly higher than a bird in a plane or because she can go faster than a cheetah in a car" (Dees, 2008, p.390).

I agree in principle that biomedical cognitive enhancement shares similarities with other privileges that are well established and therefore there is no inherent reason it would present categorically different challenges. The argument put forward seems to be that for instance there are already privileged students that can afford private tutoring which others cannot. This is an acceptable practice, but one would do well to remember how private tutoring may have contributed to the student's success. Therefore, for bioenhancement advocates cognitive enhancement can provide a similar advantage to private tutoring. As such, biomedical cognitive enhancement should be accepted but one would do well to also recognise it as a factor contributing to a student's success.

I find this unconvincing on two accounts. Firstly, I will argue that for this argument to be valid one would need to show that current inequalities, for example the material inequality of not everyone being able to afford private tutoring, are indeed acceptable and fair or at least not a significant enough objection. This is assumed throughout the literature but never adequately defended. Students from underprivileged backgrounds often need to outperform others unaided simply to achieve similar results. Moreover, policies of positive discrimination which aim to acknowledge and rectify the impact of uneven distribution of social privileges suggest that such inequalities are precisely often deemed unfair. The reason I would be concerned about not all students having access to cognitive enhancers is exactly because I am concerned that not all students have access to private tutoring. Biomedical enhancement literature takes for granted the legitimacy of such current inequalities as discussions over their desirability or inevitability are omitted. Existing inequalities are presented in descriptive terms but the conclusion over biomedical cognitive enhancement has normative implications.

Secondly, unlike Dees, I am also not particularly convinced that the dominant framework of distributive justice manages to acknowledge precisely that success requires the contribution of numerous factors, not all of which can be traced back to individual praiseworthy traits or efforts. Having been born in a wealthy family or in poverty is a matter of luck but has a tremendous impact on someone's life. However dominant social norms and institutions celebrating success and punishing failure as if either are individually earned, fail precisely to properly address the impact of such factors. Familiar narratives about people living in poverty due to their own intellectual and moral shortcomings not only are commonly held but heavily influence public attitudes as well as social and financial policies. This mirrors the belief that success can be attributed to a praiseworthy moral character and intellectual capacities. As I will be discussing further on, the case for biomedical cognitive enhancement is itself severely influenced by such presumptions (Dunlop & Savulescu, 2014; Applebaum, 2001; Arneson, 1989)

Furthermore, I would argue that biomedical cognitive enhancement would be a particularly challenging factor of praiseworthiness. For example, it is more obvious to see how being born in socially privileged environment is not something for which one can take credit. Natural talents on the other hand are a more complicated category as they are intimately linked with both personal effort and other praiseworthy traits as well as social conditions that would allow for them to flourish. Becoming for instance a successful violin player involves hard effort and determination, natural talent and a social environment that encourages and allows for talent to develop. Biomedical cognitive enhancement would be intertwined with natural talents as well as praiseworthy traits but could also be a direct reflection of other social privileges. Such a typology is complex enough to justify a certain suspicion towards Dees' optimism.

In other words, one can plausibly claim, as Dees does, that outrunning a cheetah in a car is hardly a ground for individual praise. Or as per Harris's example, having better vision through binoculars is neither unexpected nor deserving of admiration. I am happy to agree with that. However not all cases of identifying an advantage are as clear cut. For instance there is still quite a disagreement between the best ways to address disadvantages or privileges that originate from one's race or gender as well as what even constitutes such a privilege or a disadvantage whilst, as I will be discussing further on, bioenhancement literature itself still reproduces narratives which describe poverty as a personal moral or intellectual failure negating therefore the impact of other social factors.

My aim here is not to discuss what kind of traits give ground to desert. Rather it is to point out that firstly we may not be able to overcome the challenges biomedical cognitive enhancement can pose to praiseworthiness and desert quite so easily. Secondly, this line of argumentation which one encounters often in the biomedical enhancement discourse is limiting because it is unreflective of current social environments and can legitimise and perpetuate current inequalities.

1.1.4 Distributive justice

Discussions over the relation between biomedical enhancement and distributive justice represent one of the most organized attempts the literature makes to tackle issues pertaining to inequality. Here I focus on how bioenhancement literature attempts to address questions about whether cognitive enhancers should be made available to everyone and what would be the best way to do so.

When talking about biomedical cognitive enhancement and potential social dangers it may bring, what immediately jumps in mind is whether it will serve as a way for the rich to richer. The danger is that people who are already socially privileged would be able to afford biomedical cognitive enhancement which could give them an even further competitive advantage. This could end up widening the existing gap between them and those already facing a competitive disadvantage (Buchanan, 2011b, pp.36-38). Bioenhancement advocates do not deny this possibility. Their main response is that this is not as an issue specific or inherit to bioenhancement. Rather it is a matter of fairly regulating scientific innovation and its diffusion. Therefore, the conclusion is often that concerns over accessibility should not serve as a reason to dismiss biomedical enhancement altogether.

On the one hand as Minerva and Giubilini (2017) argue, there is no inherent reason to believe that a social environment in which biomedical cognitive enhancement is allowed would be any more unfair than currently established social arrangements. Harris (2007) also seems to share this view. He explains that novel technologies have often been available to only a privileged few before becoming more broadly accessible to the general public. Computers and internet access were not immediately available to everyone, neither was university education. It was only eventually and in various stages that they trickled down to the general population. The success, degree and rate of the diffusion depends on the nature of each scientific innovation and its unique practicalities. This, both Harris (2007) and Buchanan (2011, p.243-277) argue, under appropriate regulations can also be the case for biomedical enhancement. Genome editing or embryo selection through IVF are expensive processes requiring medical consultation. This means that their diffusion might be considerably slower compared to pharmacological cognitive enhancement which for instance could be easily obtained, and possibly also be comparatively cheaper (Sandberg, 2011.) A successful regulatory framework could aim at minimizing precisely such discrepancies in access. However, in the meantime, Harris suggests, there is no convincing moral reason to deny the opportunity for improvement through biomedical cognitive enhancement to those who can afford it until the process becomes universally available.

Harris (2007) continues by explaining that there is little to gain by withholding access to bioenhancement for those who can afford it until everyone can afford it for similar reasons why we do not withhold other goods such as education or healthcare. He invites us to examine the case of kidney transplants. A kidney transplant can be vital for a patient’s interests. Kidneys are also a limited resource and not every person needing one can get it. This though has never led anyone to claim that we should deny kidney transplants until everyone needing them can have them. Rather there are processes allocating the kidneys currently available. Such allocation processes are not a simple task. There is no easy way to decide who would be more deserving of them or which factors should be morally relevant. Yet still, Harris argues, we make the decision to allocate recourses as best we can. These existing limitations are themselves in part defining the scope of our responsibility. For instance, he explains, there is nothing wrong with the NHS allocating kidneys within the UK even though there might be people in need outside its borders. He points out that when the UK manages to fill the quotas within its borders then it may well be that a new responsibility to help other nations emerges. In any case he concludes that there is no valid argument behind prohibiting transplants altogether simply because the distribution patterns are debatable. Biomedical cognitive enhancement can be seen through a similar angle. Therefore, as multiple scholars in biomedical enhancement will point out, unequally distributing privileges is nothing inherently new. In the same way that, not everyone will be able to afford private tuition for their children, not everyone will be able to afford cognitive biomedical enhancements. That is at least until they become more widely available (Dees, 2007; Chatterjee, 2004).

Furthermore, what is important to notice is that not everyone agrees on how much weight concerns over distributive justice should have and to what extent they can be a legitimate objection to biomedical cognitive enhancement. Biomedical enhancement literature, as I discussed, is dominated by neoliberal principles that precisely shape how distributive justice is understood in this context. For many biomedical cognitive enhancement advocates such as Savulescu, Sandberg or Bostrom the danger of increasing inequalities through a free market distribution of cognition enhancers does not seem to be much of a problem.

As Sandberg (2011) explains, for instance, literacy and numeracy have had an enormous impact on people’s lives and have shaped our species cognitive abilities. This impact becomes clearly visible when one considers the institutionalization of education. Currently being literate is a quintessential precondition to participate in most dominant frameworks of social cooperation. However, as Sandberg explains, not only are the stakes extremely high for those who are not literate in terms of accessing social goods let alone competing for them, but also the burden of literacy befalls on the individual (Sandberg 2011). Even if biomedical cognitive enhancement places uneven burdens this does not seem to be deemed inherently problematic by everyone. As Hildt (2013) suggests there is no necessary obligation to provide access to such enhancers to everyone.

More so, Harris (2007) suggests, when someone makes use of a service not available to all who need it, it is not necessarily to improve their position over others. When parents pay hefty amounts so that their children can receive the best education possible it is not because they want them to hold an unfair advantage over others. Rather it is because they understand the inherent value that education may have for a person's development, self -understanding and reflection. It is an expression of parents wanting the best for their children and wanting to strive for perfection. Biomedical cognitive enhancement does not have to be any different than that.

There are a few things here which I would argue need further examination. Firstly, as I have mentioned, the conversation on the impact biomedical cognitive enhancement might have in distributive justice and the exacerbation of inequalities is often neglected to the extent that it is not seen as problematic. Hopefully though not everyone is as convinced as Sandberg seems to be that those who are illiterate should individually bear the consequences of their exclusion. My issue is that within the literature of biomedical cognitive enhancement underlying principles upon which such claims are made are not discussed or sufficiently justified. Rather they are taken for granted as part of the social and financial reality of western liberal democracies and as such they are legitimized.

Secondly the grounds on which cognitive enhancers would be distributed are not clear. Harris draws a parallel between distribution and access to goods such as kidneys and education on the one hand and biomedical cognitive enhancements on the other. He explains that the fact that not everyone who needs a kidney can get one is not a good reason to deny kidney transplants to everyone and he holds that the same can be said for biomedical cognitive enhancement. However, kidneys and education have a very different basis of distribution.

Kidneys are primarily distributed based on need. People who already have a healthy kidney cannot get a transplant as they do not need one. Even if additional criteria are employed to determine who needs it the most or who could benefit from it the most, financially privileged people cannot get one simply by buying it. That is because there is a relatively strong agreement that mere desire or financial privilege should not influence kidney distribution because they bear no relevance in themselves to the central decisive criterion – in this case illness.

However, let us imagine the following scenario. We are in a position where we can create artificial kidneys in a lab. Similarly to non-artificial kidneys, they are distributed to people in a waiting list for a transplant. However, the artificial kidneys are also available for sale. This would mean that people who could afford them could buy artificial kidneys even if they are lower down the waiting list or even if they do not need a kidney at all. My concern is that biomedical enhancement would resemble this case of artificial kidneys.

Distribution based on need though is not the case for education. As Harris explains we allow those who can afford better education to access it. This is potentially because it is harder to determine the basis of distributing education than it is to determine who needs a kidney. In any case it is not clear why we should assume that the basis for distributing biomedical cognitive enhancement should be the ability to afford it. Moreover if similarly to private education, bioenhancement were available to those who could afford it then arguably one could simply express an interest themselves and ask to pay the appropriate amount and undergo the process. This would not be the case if enhancement were like a kidney transplant. One cannot simply ask for a new kidney. Rather this decision is made by a doctor claiming medical authority. If therefore biomedical enhancement is distributed on a similar basis as kidneys are, one would need to ask who would have the authority to make the necessary assessments. However, given the long history of eugenics and the marginalization of people that were deemed to lack cognitive capacities such a process can be very complicated. This can also be particularly problematic when one discusses biomedical cognitive enhancement as means to lift people from poverty or to erase disability.

My point here is not to argue that there can be no just reasons for biomedical cognitive enhancement or a just distributive pattern. Rather it is simply to point out some ways in which biomedical cognitive enhancement can pose different challenges regarding its distribution compared to other goods. Accounts of who gets access to cognitive bioenhancement need to navigate not only concerns over fairness and distributive justice but also concerns about how bioenhancement is understood and experienced in relation to cognitive disabilities.

There is a further point which I think merits attention. Harris (2007, p28-32) points out that for most people, the decision to enhance our cognitive capacities or those of our offspring through traditional means of education stems from a genuine appreciation for their inherent value. The same would apply regarding the use of biomedical means. Harris (2007, p28-32) explains that when one uses a service or obtains a good that is not universally available this does not mean that one wishes to exercise an unjust advantage over others. When someone, takes ibuprofen to treat a headache, he explains, this is not to exercise an advantage over those who do not have any. Rather it is an attempt to improve on one's own position.

I have strong doubts about that. Traditional means of cognitive enhancement such as university degrees are often directly marketed to both prospective students and their parents as a way of achieving a positional advantage over others -even if it is not recognized as unfair- and as a pathway towards a desirable career. Moreover, the multiple objections raised in the literature about cognitive enhancement and whether it can be used for distributive justice or if it would simply be a way for the rich to expand their opportunities to get richer reflect and validate precisely such concerns. Namely that cognitive enhancement can be used to perpetuate inequality.[1]

However, one can be sympathetic towards Harris and concede that people would also opt for biomedical cognitive enhancement for its inherent value. Even when this is the case though, it does not change the fact that they will obtain a positional good which they could subsequently choose to utilize or not. In either case I would argue the fact that this positional good is available to some and not others can give sufficient grounds for further conversations. Even with people undergoing cognitive bioenhancement and not pursuing any competitive advantage, those who cannot access bioenhancement are still left in a vulnerable position. The knowledge that some people can afford opportunities that I cannot and therefore hold a competitive advantage over me impacts and modifies my plans and my behaviour as I attempt to find ways of balancing out this discrepancy. This will be the case whether they decide to make use of their

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[1] For a relevant discussion see Walsh, 2020; Buchanan et all 2001; Buchanan, 2011b

advantage or not. If I did not make a conscious effort to level the field, then I would have to operate under the knowledge that I am susceptible to interference whenever someone who holds and advantage and -therefore to an extent power- over me decides to do so. I am of course not saying that this is unique to biomedical cognitive enhancement. My point is that cognitive bioenhancement offers a competitive advantage. This remains the case whether or not someone actually exercises this advantage. If proponents of cognitive enhancement do not find anything problematic with this, then they should justify it instead of taking the fairness and acceptance of these advantages for granted.

What makes though the conversation of how we should regulate biomedical cognitive enhancement particularly problematic is not only that we cannot distinguish between its inherent value and its value as a positional good. Rather it is that positional goods and inherent goods traditionally belong to two distinct regulatory frameworks. Arguably when described in terms of being a positional good, most of the literature seems to at least accept the need for a distributive framework according to some principles of justice. This comes precisely as a recognition of the potential harmful impact on equality that otherwise may occur or even in the hopes that these positional goods could be used to mitigate existing inequalities. Biomedical cognitive enhancement as an inherent good though would not fall under the same category. Understood as an inherent good, cognitive bioenhancement resides within a much smaller scope of legitimate interference. This is because if the state were to regulate biomedical enhancement as an inherent good to the same degree that it does a positional good, that would require taking a stance on what constitutes a good life.

This is something that the biomedical enhancement literature in general has actively tried to stay away from doing. Although the literature does not deny that cognitive abilities are inherently valuable, emphasis is put on how they can instrumentally facilitate the conceptualization, actualization and reflection over one’s life plans. I think this is partially due to the following parameters. As I have mentioned, biomedical enhancement literature as a whole is governed by liberal values. This is why biomedical cognitive enhancement is depicted as a primary good, compatible to the value pluralism that liberal western democracies- the locus of the entire biomedical enhancement enterprise- endorse and compatible to the ideal of state neutrality towards which lives are more worth leading (Sandberg & Savulescu 2011; Buchanan, 2001, p61-103). The need to emphasize and underline neutrality becomes even greater when one considers that biomedical cognitive enhancement is developed in the shadow of eugenics. Bioenhancement advocates claim that their proposals differ from eugenics by emphasizing the voluntary market driven character of bioenhancement as opposed to a state organized project, as well as avoiding identifying certain traits as better than others. A regulatory framework aiming to encompass positional goods may be too restrictive for the above parameters that stipulate how biomedical cognitive enhancement is understood as an inherent good. The challenge is finding a framework capable of accommodating both these aspects.

I would argue that despite the above-described efforts, many of the reasons given in favour of biomedical cognitive enhancement are presented in terms of the positional goods it will convey. A majority of arguments in favour of cognitive biomedical enhancement describe how it would improve the chances one has to compete over desirable goods such as a better job or to out-perform others in a professional environment. There seems therefore to be a discrepancy between the reasons given for biomedical cognitive enhancement – its value as a positional good- and the reasons given for the legitimization of the process and a less regulatory framework- its inherent value.

What is particularly interesting is how biomedical enhancement literature has responded to these issues by advocating cognition enhancers as a way to achieve distributive justice. Biomedical enhancement, its supporters argue, could be used interchangeably to other kinds of social efforts such as scholarships, training programs, or welfare support as a way to further potential demands of justice and equality (Sandberg & Savulescu, 2011; Buchanan, 2011b, Harris 2007, Savulescu, 2006)

It is not easy to determine what this would look like. Any such proposal would need to identify the scope of justice, the currency of equality, which inequalities are unacceptable and who is responsible for addressing them. The key idea is that regardless of what particular concepts of justice and equality one espouses, biomedical enhancement as such is not only compatible to equality and distributive justice but can in fact promote it.

Before assessing the plausibility of such claims, it is important to understand *what* precisely is being distributed. That is to say, advocates of such proposals need to explain if biomedical enhancement aims at redistributing natural traits as such or as a way of indirectly redistributing social goods.

On the one hand, one can argue that the natural lottery distributes talents unfairly and that is unacceptable. Some key proponents of biomedical enhancement or even transhumanism such as Bostrom (2008) claim that biomedical enhancements can help rectify this moral arbitrariness and restore our capacities to what it should always have been and to what humans deserve. For advocates of this view, what is problematic with talents being distributed by the natural lottery is not only the harm associated with having or not having a particular natural trait. Rather it is also the arbitrariness and lack of control of the distributive process.

On the other hand, it remains contestable whether categories of fair distribution can be meaningfully applied to nature and if there is such a thing as natural inequalities. Jacobs (2012**)** for example raises two relevant points. Firstly, he argues that the very notion of natural inequalities is unintelligible. A natural trait by itself he explains, is not enough to produce material and social wealth. It requires a social framework that would translate this natural trait to social wealth. Therefore, for Jacobs all inequalities are inherently social. Secondly, he explains that discussions of a natural lottery would need an outside criterion, a benchmark to signal what constitutes a natural inequality of certain traits which can come in the form of a consensus of normal species functioning.

Hauskeller (2016) expresses similar concerns. He argues that one is neither deserving nor undeserving of natural traits, whether their own or someone else’s. To make such a claim would imply a distributing scheme that would apply before birth. What is important, he explains, is to distinguish between a claim that one deserves the same natural talents as someone and a claim that they deserve the same social and material benefits that come with those talents. One cannot argue that it is unjust that they are not tall enough to be a professional basketball player. They can claim however that it is not fair that basketball players receive a greater material compensation than nurses for instance.

In relation to the above, I would argue that it is important firstly to recognise the limitations of drawing a sharp distinction between natural and social advantages and disadvantages. For instance, biomedical enhancement used for equality purposes will still need to account for the complex relations between biological end environmental factors that contribute to the development of any trait as both types of factors influence the development of a trait. Even if biomedical enhancement can provide a degree of control over biological factors, the desired traits may not develop without the relevant social environment (Etieyibo 2011). There could be a universal biomedical enhancement under a country's healthcare provision aiming at increasing cognitive abilities. Nonetheless there would still be a discrepancy on the results between those who also have access to better, nutrition schooling etc and those that do not.

Most importantly though, any framework of distributive justice aiming at incorporating biomedical enhancement would need a robust account of when an inequality is problematic and what is the appropriate response. For example a person's welfare and opportunities can be significantly limited by the deleterious impact of racial discrimination. Racial discrimination can rob a person from the opportunity to obtain or keep prestigious jobs in a racist society. It is a disadvantage that stems from physiological traits which prejudice and injustice render problematic.

One way of addressing this issue would be with social and economic changes that would tackle barriers marginalising racial minorities. This entails an uprooting of discriminatory beliefs in an individual, institutional and structural level as well as an according redistribution of economic and political power. Such processes can be laborious, take multiple generations and cannot guarantee the desired outcome. However, in western European democracies, the setting of the biomedical enhancement enterprise, white people do not experience such racism. Racism would not be a problem impacting on equality of opportunity if everyone were white. If skin whitening products were perfected or if there was a way for someone to biomedically choose their race so that they no longer face discrimination and thus increase their opportunities and potentially their welfare, would that be compatible with the demands and restrains of enhancement?

Biomedical cognitive enhancement literature would need to have the appropriate conceptual tools that would allow to differentiate between these two possibilities.

Potentially there could be cases in which targeting individual physiological traits such as cognitive capacities might be legitimate. This though does not mean that individual and social changes can be applied interchangeably based on their efficiency without a comprehensive account of what justice demands. Within the following chapters I will argue that, partially due to its eugenic past, bioenhancement literature explicitly addresses the issue of racial prejudice. However it does not extend the same attention to financial inequality which it still frames as an individual problem associated with individual moral or intellectual failures. As such in terms of distributive justice it lacks the analysis necessary to determine whether a biological solution is appropriate and can be successfully prescribed for social problems such as poverty or financial inequalities. In my final chapter, I will elaborate on why I hold that the biomedical enhancement literature is ill-equipped to address such distinctions. [2]

1.1.5 Biomedical cognitive enhancement as a quick fix

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[2] Lamkin makes a similar point when he refers to a satirical piece of 1931 called “Black no more”, suggesting that a way to combat racism would be to make everyone white. Although this play is fictional, skin whitening products that uphold racist beauty standards are very real and widely used whilst new more effective methods such as RNA interference are being developed by major cosmetic companies such as Avon (Lamkin, 2011, p.186). Cooper (2007) also refers to a similar example.

There is no shortage of valid objections that could be voiced against such a hypothetical scenario both minor and major. One could point out for instance that there is no guarantee that it could be an effective method as a lack of social support and legitimacy could undermine its success. Arguably though the focal point should be that even if effective this suggestion would be deeply problematic as it fails to address the actual cause of inequality. Instead it targets blackness as if that is the cause of the disadvantages. It shifts the responsibility from those who exhibit racial prejudice to be reflective of their own behaviour to those affected by it to try to comply with currently existing unjust norms and standards. Therefore even if skin lighting products could increase the social goods someone receives it is necessary to ask if they simultaneously uphold structural and institutional racism. It is also necessary to ask what it would mean for the individual that chose to undertake it in terms of coercion as I will discuss later on.

While I will be returning to this point later, another objection which is directly related to concerns over distributive justice is biomedical cognitive enhancement being a quick fix which could be offered au lieu of broader social change. For instance, biomedical cognitive enhancement could be an alternative to education systems becoming more inclusive, or an alternative to a more extensive welfare support. The primary concern in such cases would be that biomedical cognitive enhancement and biomedical enhancement in general will be used as a way of prescribing an individualized biological solution for socially derived problems. I share these concerns and I will expand on them in detail later. Here I will selectively focus on what is relevant to this discussion.

Advocates of biomedical cognitive enhancement explain that the objection of quick fixes does not hold up to scrutiny. This is because, they argue there is nothing dictating that biomedical cognitive enhancement should replace or operate alone in addressing a problem. Biomedical means are just another set of tools that can be applied in addressing complex issues which can exist alongside demands for social, economic, or political reform. More so, what advocates of bioenhancement claim is that all potential solutions should be weighed against each other, and the most efficient options should be followed.

This means that bioenhancement proponents recognize that there are issues that could strictly demand a social response. However, as Savulescu and Kahane (2011), Sandberg (2011), Harris (2007) and others are quick to explain, social changes are slow, often costly, non -linear processes. The impact of social change might not be felt by the targeted demographic soon enough, allowing for people to carry an unfair burden longer. Overall, their question is, if biomedical cognitive enhancement can help alleviate unnecessary burden and mediate inequalities in a cost effective and efficient way, should it matter if it is a quick fix?

At first glance this seems to be a fairly reasonable suggestion. What I argue remains problematic with this efficiency-oriented approach is that as de Melo- Martin (2010) explains, it reduces morality to a risk assessment. A risk -benefit analysis focused on efficiency presupposes a shared understanding on what constitutes a risk and on what is a fair distribution of risk. This is not always made clear in the literature and therefore allows for certain values to influence the assessment process whilst they remain latent.

For example, I might be a student needing to interrupt my studies because I find that not having funding, I cannot continue fulfilling my academic obligations whilst working part time. I therefore need to interrupt for a year in order to work and put some money aside. Next year when I resume my studies, I will not need to be simultaneously working to support myself. Instead I will be able to focus on completing my degree. Taking an interruption though entails the risk of me needing to postpone completing my degree for year which means that I would need to wait another year before seeking permanent employment in my field and having to pass on any potential opportunities. Alternatively, I could try biomedical cognitive enhancement. Through the use of cognitive enhancers, I could potentially be able to work longer hours allowing me to tackle both a part time job as well as my academic responsibilities. According to a risk -benefit analysis I would need to focus on potential costs of either solution - financial, social, health or other- and adopt the most efficient one for my particular goals. However, this does not facilitate me questioning why tuition fees have gone so high that I need a part time job to afford university, why are not universities free, who is eligible for a student loan and under what terms or even if I need a university degree to have hopes of a career. Cognitive bioenhancers have individualized the risk as something I need to bear even though I am already in a vulnerable position instead of distributing it across the broader framework of for instance university fees and funding bodies.

Evaluating biomedical cognitive enhancement through identifying benefits and costs is incomplete until one considers who bears the cost and who reaps the benefits. So not only would we need a shared understanding of what is a risk and what is a benefit We also need an account of how either should be distributed. This is a heavily value laden process. A risk- benefit analysis therefore cannot claim to be relying on objective calculations. Rather it is governed by competing values and descriptions of justice. The issue is that they need to be explicitly acknowledged in order to be meaningfully examined. This is something that the current literature does not do sufficiently.

Whether explicitly stated or not, the purpose of biomedical cognitive enhancement is to contribute to human wellbeing as de Melo Martin (2010) explains and as I will discuss extensively further on. At the above example cognition enhancers would work as a replacement for me interrupting my studies. If advocates of biomedical cognitive enhancement aim at increasing my wellbeing, then in addition to offering me enhancers to manage a degree and a job, they arguably should also consider cancelling my tuition fees. The fact that they do not, confirms for me what de Melo Martin suggests over the value laden assumptions running through the biomedical cognitive enhancement discourse. The risk assessment of biomedical cognitive enhancement exists within a specific framework which in turn is affirmed and perpetuated whilst limiting discussions of possible alternatives. Biomedical cognitive enhancement literature is constantly disparaging the objection of enhancement being a quick fix by arguing that it could be considered as an alternative and not a replacement without ever though including actual social changes in this risk assessment calculation (de Melo Martin, 2010)

In addition to that for the most part calculating risks and benefits is currently speculative. This is something often pointed out by advocates of biomedical cognitive enhancement arguing that there are no unique dangers in bioenhancement compared to any other means and that these speculative risks should not prevent humans from pursuing the benefits bioenhancement promises. As de Melo Martin points out though, these benefits are just as speculative as the risks advocates of enhancement are happy to put aside. One potential benefit of biomedical cognitive enhancement for instance is that it would enable people in key professions such as doctors or pilots (Menuz, 2015) to perform better, decrease the risk of human error and benefit those in need of their services. Biomedical cognitive enhancement could allow for a surgeon to perform lifesaving operations that she may not have been able to perform previously. Or it could allow for her to significantly minimize the risk for the patients. However, there is no guarantee that this would be the case. It is equally plausible that the surgeon’s new and improved skills would not be applied in improving her performance in terms of quality but rather in terms of quantity. Instead of performing better to her current workload she could be asked to increase her workload so that the hospital would not need to hire another surgeon. Therefore, her undertaking cognitive enhancement would financially benefit the hospital but not necessarily the patients or the surgeon herself fostering potentially exploitative working relations. This could also be reflected in the broader hiring processes of the hospital which would make cognitive enhancement a requirement for applying for a future vacancy. Applicants therefore could need to take cognitive enhancers not to gain an advantage but rather to simply compete on an equal footing.

1.1.6 Coercion and Freedom

Going back to the main body of literature, another objection that seems to be in the heart of overlapping concerns of praiseworthiness, quick fixes and inequality is that of coercion. This is a rather significant objection as it seems to be crucial in distinguishing biomedical cognitive enhancement from eugenics whose shadow still weighs over it. As Savulescu, Sandberg and Kahane amongst other advocates of bioenchantment explain, the key difference is that unlike eugenics, biomedical cognitive enhancement is not a result of state coercion (Savulescu et al., 2011). Rather cognitive bioenhancement is meant to present people with new opportunities to better identify and pursue their goals. Ensuring cognitive liberty, namely that a person cannot be forced to undertake cognitive enhancement is therefore fundamental (Hildt, 2013).

Regardless of the intention biomedical cognitive enhancement advocates hold, it is not clear what kind of framework would be required to protect against coercion. For Chatterjee (2004) someone could be pressured into undertaking cognitive bioenhancement in order to remain competitive, to access or maintain a better position in some hierarchical order or to comply to external requests whether implicit or explicit. This he observes becomes even more of an issue within the free market or sectors such as the army in which regulation has not always proved effective.

Menuz (2015) explains that the danger of coercion can be understood within the broader reason driving enhancement, namely an attempt for individuals to adapt to their environment. Such an attempt can reflect a desire for social recognition or a need for material survival. He points out as well that this “need for performance” can be seen particularly in the field of academia as well as in high stakes professions such as pilots or surgeons. He explains that if the use of cognitive enhancers increased sufficiently, then coercion can be institutionalised and the expectation of what is a legitimate requirement for such professions can change. That is to say, it could be that people would need cognitive enhancers, not to gain a competitive advantage over others but merely to be able to compete on an equal footing. As I briefly discussed above, such concerns can significantly shape what benefits and harms we recognise biomedical cognitive enhancement to have. Cognitive enhancers are depicted as positional goods. However, by definition a positional good cannot be held by everyone. Therefore it is unclear if cognitive enhancement would create issues relating to the Red Queen Hypothesis where people in order to remain ahead of others are confined to a perpetual race for competitive advantages.

Forlini and Racine (2009) also highlight concerns regarding cognitive bioenhancement being understood as a positional good. In their empirical research work, they investigate the use of neuroenhancers in academia and how they are perceived amongst students, parents and health providers. Their research seems to confirm that these stakeholders understand the danger of coercion to be inevitable in any competition driven social context. An interesting aspect Forlini and Racine highlight is that students using neuroenhancers frame this use in terms of personal choice whilst simultaneously both they and their parents understand them as a result of tremendous social pressure. One of the participating students seemed to articulate this idea very directly when they explained that “the use of non-prescription Ritalin is very much like a symptom of societal problems not like a cause. Like I don’t think it’s gonna change society I just think people are taking it because there is so much pressure from school and stuff.” (Forlini & Racine, 2009, p.167).

The participants also seemed to express that the driving force behind this kind of cognition enhancers does not necessarily originate from the students as an expression of their autonomy, but rather stems from the social structures in which university life is embedded: “Like the demands being placed on the student right now is what makes people turn to this kind of thing rather than the university taking the line ‘Oh the students are taking Ritalin so we can ask them to do more work’” (Forlini & Racine, 2009, p.167). Despite this acknowledgment though both participating parents and students seems to consider the students as individually responsible for taking any neuroenhancers. The biggest concern about the impact such practices can have on mental health came from the health care providers.

What the research concludes is that although neuroenhancements are embraced as the outcome of individual choice, this is in normative terms (Forlini & Racine, 2009). Students and parents explain that neuroenhancers are morally acceptable to the degree that they are compatible with individual autonomous choice. However, this comes as a juxtaposition to the descriptive account of the use of neuroenhancers given by the students in which they seem to recognize that the usage of neuroenhancements does not reflect an uncoerced choice. Rather it is a manifestation of an individual attempting to adapt to an institutional and social framework that fosters competition. Forlini and Racine conclude that this discrepancy needs to be understood through a broader historical context of liberal economies and how they interplay with both public discourse, social structures and the influencing of individual behaviour[3].

Although not empirically based, Dees (2008) offers an analysis of potential coercion in broader professional settings echoing some of the issues underlined by previously mentioned authors. He imagines future cases in which neuroenhancers are normalized within a competitive professional framework. This broader use of neuroenhancements could redefine what is considered an expected performance which employees would need to not only achieve but maintain. This could make the use of cognitive enhancers an expected practice for anyone who wishes to follow a particular carrier, especially if it is a competitive one. More so it would be a practice that employees would not be able to easily stop. Dees admits that this could indeed be coercive. However, he argues, assuming these cognition enhancers do not entail any particular safety concerns, then they do not need to be treated as a unique concern. He explains that any career entails certain practices – a socialization process as he calls it- in which employees become familiar with the behaviour, etiquette and other processes and habits associated to their particular profession. For Dees partaking in such structures as part of one's career is just as coercive if not more. He concludes that if anything, cognitive enhancers would potentially call for a clearer

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[3] Research papers based on empirical data such as the one discussed above cannot on their own be conclusive over the potential use of neuroenhancers in academia nor the danger of coercion. As Cakic (2009) and Lavazza (2018b) explain there is a need for more empirical data on how many students take neuroenhancers, how impactful they are in the academic environment and how much pressure there is to take them. Similar research would also need to be extended presumably to other professional settings.

consent process regarding their use and their effects would be diminished faster should one stop taking them.

What seems to be important for Dees is that there are sufficient alternative professional options for those who do not wish to use cognitive enhancers. This is because part of what frames the danger of coercion is the financial consequences for someone not wanting to use neuroenhancers. To further his point, he gives the following example. Let us assume, he claims, the only way for actresses to succeed in having a Hollywood career is by having large breasts (Dees, 2008). This leads many aspiring actresses to seek breast augmentation. However, he argues this is not a breast augmentation problem per se, rather it reflects some problematic views about women surrounding the particular profession. As long as there are multiple other career opportunities the potential coercion of some women to have breast augmentation surgery does not constitute a major objection against the practice of breast augmentation. I take this to mean that for him, it is not breast augmentation as such which is problematic, rather it is the sexualization of women's bodies under these circumstances. If women chose to undertake breast augmentation for their own personal reasons reflecting their individual choice, then it would not be objectionable[4]. He therefore can conclude that breast augmentation, and biomedical cognitive enhancement, are not inherently problematic.

I am happy to agree with Dees on the importance of offering multiple legitimate options as far as professional development and financial security goes. I agree that one would feel less coerced into taking cognition enhancers if they knew that there are other professional options with similar benefits open to them. That being said, I still have certain reservations.

Returning to Dees's the example, I would firstly have to agree that such a case would indeed indicate a broader problematic sexualization of women's bodies. However, I do not think of this as a side issue with no bearing on the permissibility of breast

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[4] For the purpose of this example, I will not investigate the degree to which a woman's choice to undergo breast augmentation could be shaped by problematic imagery of women's bodies, beauty standards or pressure to comply with them although I certainly wish to acknowledge that such factors could operate in multiple different ways.

augmentation surgery. His example shows a case in which the need for breast augmentation both stems from and also perpetuates problematic narratives. What is lacking for example is challenging why women's bodies are being sexualized, why is this reflected in Hollywood, who is in a position of power in Hollywood and proliferates these stereotypes and who profits from them. The conclusion for me is not that there is nothing inherently wrong with breast augmentation as such therefore there is no need for intervention. Rather the conclusion is that one cannot meaningfully assess the wrongness or permissibility of an action detached from its motivations, its consequences and the social conditions in which it is embedded.

This point has been argued by disability scholars in relation to pre- natal screening but I claim it can be illustrative of certain problematic aspects in Dees' analysis. Disability activists have been skeptical about the wider use of prenatal testing to identify fetuses with traits of disability as it often leads to women terminating their pregnancies. As Asch and Wasserman (2010) explain this is often portrayed as a clash between disability justice and women's reproductive rights. However, i would argue, this does not have to be the case. Disability activists and philosophers of disability are not calling for a restriction to women's reproductive rights. Rather what they highlight is the need to change the conditions under which such a decision would take place. Pregnant people whose fetuses present traits of disability often decide to terminate their pregnancy under conditions or coercion or false information. They are often nudged towards this direction by medical personnel, or they cannot afford the extra cost of raising a disabled child or they operate under prejudice and misinformation regarding what life with disability entails. These factors can be addressed with social changes such as a more extensive financial and social support and greater representation of disabled people. This would allow for more meaningful decisions which would better reflect women's choice whilst also increasing the possibility of them continuing the pregnancies. Therefore, I claim that even though one should not ban pre-natal testing, there is an urgent need to examine the social conditions that render it a mechanism of marginalization for disabled people.

In a similar way, to return to Dees and his breast augmentation example, the issue is not to declare if breast surgery is in itself bad or good as it was not with prenatal testing. Nor is it to pit women who want to have breast augmentation surgery against aspiring actresses who want to be protected from being coerced to this practice. Rather the issue is to reexamine and challenge the broader framework in which this discussion takes place in an attempt to identify in what ways problematic and coercive factors weigh in.

Dees' does this when he identifies the danger of financial coercion which is why he stipulates the need to have financially viable alternatives. I simply would claim that he does not go far enough. The problem is of course that there is no necessary agreement on what constitutes coercion or most importantly how to deal with it. More specifically I am concerned that Dees addresses financial coercion but disregards forms of social coercion. I understand of course that it is not easy to identify which and how social norms can be coercive or how they can be reflected in political and financial institutions or legal frameworks. Even more so when one considers the risk of policies overcorrecting towards paternalism. However, there are benefits in recognizing something as coercive even if we have to admit that there is no blanket solution. It would be better for Dees to conclude that even if breast augmentation is morally neutral it is problematic in the case of women who wish to be actresses. This does not necessarily entail that breast enhancement should be prohibited for women in general or even for women undergoing it specifically to become Hollywood actresses. Recognizing this practice as problematic- even if the risks of regulating it overweigh the benefits- at least contributes to reflecting and challenging the framework that allows it.

Secondly, mirroring Dees' one could argue there is nothing wrong with having straight hair or with one straightening their hair. However, there is something very wrong with professional standards implicitly or explicitly coercing black women to straighten their natural hair to conform to Eurocentric standards of beauty in order to appear professional and appropriately dressed for their workplace.

Arguing that the issue has nothing to do with hair straightening as such and that the real problem is latent racism does not seem to me an adequate way of describing the problem. This is because it is precisely the issue of racism that makes hair straightening problematic in this context. The idea that there is nothing inherently wrong with hair straightening because under different circumstances it is unproblematic should not be used to legitimize its use in this case. Nor should the fact that these women could seek employment elsewhere. What seems to me to be the question is if and how can one make a distinction between a problematic framework and the means of its actualization. The same I would argue holds for biomedical cognitive enhancement. I could be coerced to undertake cognitive bioenhancement to increase my productivity so that my employer could increase their profit without necessarily rewarding me as cognitive bioenhancement becomes a widespread practice to which I am expected to adhere. The root of the problem is the potentially exploitative working relations. This does not mean though that cognitive bioenhancement is unproblematic just because it could be under different circumstances.

Moreover, I would argue that proclaiming all such concerns as side issues may be enough to deal with objections against biomedical cognitive enhancement from those who are against biomedical enhancement as such. Namely concerns about biomedical cognitive enhancement being us "playing God" or paving the way to a genetic genocide or undermining the very fabric of moral understanding and human rights. This does not reflect the majority of the scholars who view biomedical cognitive enhancement as a tool and a practice which like all others could be used in a variety of manners bringing forth both beneficial and potentially harmful consequences. Most, as Buchanan (2011) explains, are not uncritically espousing this new prospect. Rather more moderate scholars seem to acknowledge that biomedical cognitive enhancement can be put to both good and bad use. For this analysis the desirability and permissibility of biomedical cognitive enhancement should not be irrelevant to what Dees calls "side issues" rather I would argue it should be judged by them.

Another element that deserves a mention in Dees's example is the relevancy of the trait. In his example, I would argue what is objectionable is not only that breast augmentation reflects problematic attitudes towards women's bodies but also that breast size has no correlation to acting abilities. Let us imagine a company with a policy of only employing blue eyed people. This does not necessarily reflect a problematic view regarding other various eye colours. It may also be the case where there are ample other professional opportunities for people with non-blue eyes. What is problematic is that it is hard to imagine a situation where eye colour is relevant to job performance. This criterion regardless of whether it is problematic as such, is objectionable because of its arbitrariness.

One could argue here though that unlike breast size and acting or eye colour and employability biomedical cognitive enhancement would be relevant in most professional settings. As there is nothing peculiar with an employer hiring the candidate with the best credentials such as references, work experience or degrees, there is nothing unusual about her also wanting her employees to have the best cognitive performance possible. This at first glance seems reasonable however I still would argue that it can give ground to concerns. Let us take an example where I have a company that has advertised to fill in two positions for which I would normally hire graduates as their credentials would suffice. However, it occurs to me that one graduate taking cognition enhancers can produce double the work which means that I only need to hire one. Not only that but if the field is competitive enough and depending on how much she needs employment she might take the cognition enhancers simply to compete with the other candidates. This means that I might not even need to pay her extra for her taking the neuroenhancers and completing the workload usually undertaken by two employees. Moreover, once I need additional employers, I can modify the position requirements to include biomedical cognitive enhancement where before they did not. This could create a cycle where I require from my employees to take cognition enhancers and complete an increased amount of work and they need to continue or start taking cognition enhancers or else risk underperforming. Once again, we return to similar concerns to those raised by Menuz (2015) and concerns about how the potential risks and benefits of biomedical enhancement are distributed.

For Dees, as I have discussed, there seems to be nothing wrong or unusual with such cases. One can argue that over the decades we have already seen a tremendous increase in necessary requirements for many professions such as postgraduate degrees, much longer experience, foreign languages and computer literacy. Biomedical cognitive enhancement will merely follow on this list which simply reflects changes in social conditions. If anything, this increase of requirements has contributed to the quality and quantity of professional services available whilst allowing for companies to function in a more profitable and efficient manner. This might not be inherently unjust, however I would claim it is problematic when it is not accompanied from an equivalent distribution of the additional profits. Returning to my example above, if we look at it through the perspective of the employee rather than the employer, what motivation does the employee have to undertake biomedical cognitive enhancement to increase profits or cut costs for her company if she is not proportionately compensated? When biomedical cognitive enhancement is viewed within the professional sphere which is imagined as a competitive one it is necessary to ask who will be undertaking the risk and burden of biomedical cognitive enhancement and who will be reaping the benefits. Biomedical enhancement seems to be focusing on enhancing cognitive capacities greatly due to the increased professional performance, which presumably indicates increase production of knowledge or services which would then turn into increased production of profit. This entails the potential danger of commodifying cognitive skills threatening thus cognitive liberty (Hess & Jokeit 2009; Bublitz, 2013) without proportional compensation.

Concerns over coercion, competition and positional goods which embed biomedical cognitive enhancement in the context of the labour market need an account which recognises that often a private company’s financial interests are different to its employees’ interests. Coercion to use cognitive enhancers can be compared to coercion to work overtime-whether paid or unpaid- to volunteer or to take an unpaid internship.

The conclusion from these underlying similarities however should not necessarily be that biomedical cognitive enhancement does not pose a novel threat to equality. Rather I think that it highlights that currently common practices also pose a threat to equality and should probably be reconsidered alongside with the political, economic and social frameworks that allow them. Biomedical cognitive enhancement literature does not examine the legitimacy of current practices treating them either as just or as inalterable. Justifying a future practice because it shares certain key similarities with existing practices would be more acceptable if these existing practices used as a legitimating reference were not themselves potentially coercive, or indicating exploitative relations and inequality. By this I mean that biomedical cognitive enhancement is envisioned in a setting of financial and social coercion. However cognitive enhancers do not seem to mediate such manifestations of power inequality. Rather the continued vulnerability of individual people seems to be a primary prerequisite for the desirability of bioenhancement.

Exploitative professional settings though, are not the only site within which a person could be asked to undergo biomedical enhancement for someone else's benefit. Hauskeller (2014) articulates this point when discussing the example of biomedical cognitive enhancement and more specifically increased memory control. To elucidate he takes the example of memory enhancement for an eye- witness to a crime. If the relevant technology becomes safe and available, eyewitnesses in crimes could be asked or even be mandated to take memory enhancers in order to facilitate the juridical process and ensure the most unbiased and accurate account of relevant events. Ensuring fair trials through which justice can prevail is something that is arguably in everyone's best interests. Not only because it ensures that -in theory- someone innocent is not falsely imprisoned but also because it legitimates the juridical process itself.

However, as Hauskeller explains this is not a straightforward conclusion. There is a danger here of equating the interests of a particular group of people such as judges, police officers or prosecutors with those of the general population or even those of the eyewitnesses. This is problematic not because there cannot be any overlap but rather because it conflates how and between whom additional responsibility is distributed and how different values are weighted and balanced against each other. As Hauskeller shows there are many things that one could do to facilitate criminal investigation in theory, such as giving police officers the authority to detain suspects or enter people's houses without a warrant. However – regardless of whether such practices would actually be effective- the reason why states have ruled against them is because efficiency does not overweight the protection of individual liberties. An eyewitness that is asked or forced to undertake memory enhancement is carrying an extra burden that may well not reflect her best interests. There needs to be a consideration of the personal toll this could take on her for instance by asking her to relive a memory that may be traumatic or painful. What becomes clear, as Hauskeller points out is that in similar ways that biomedical cognitive enhancement advantages individuals some time at the expense of others or of a group, it can also advantage a group by placing undeserved or disproportional burdens on specific individuals.

Lavazza (2015) explores some similar concerns in terms of memory enhancing drugs or better yet drugs that enhance one's control over their memories. Whilst engaging with the case of weighing the interests of specific people or groups against the broader interest of the public Lavazza looks into the case of abused women. Savulescu (Earp et al., 2014) when discussing the case of enhancement as diminishment, points out that a domestic violence victim might enjoy an increase in welfare through a decrease of her memory capacities. Lavazza describes how this may be complicated as it encompasses the conflict of multiple interests. She explains that victims of domestic abuse may indeed benefit temporarily from having the memories of their abuse diminished. However overall if this becomes a norm it may impede or dissuade them from pressing charges. More so, it can prevent the creation and sustainment of collective knowledge that can shape how domestic violence is understood, described and dealt with.

This can be made evident if one takes the example of the Holocaust. Lavazza explains that survivors of the Holocaust would have had more reason than any to access a process that would allow them to control and modify their memories. If most survivors though did this that our collective knowledge of the Holocaust would be compromised. This begs the question of how cognitive liberty and autonomy can be respected in compared to social goods. Apart from the preservation of collective knowledge and understanding this can be also applied in the case of gender -based fetus selection as an example of how parental autonomy can potentially uphold discriminatory structures. Lavazza concludes that there needs to be a certain limit to individual cognitive freedom in order to accommodate that social relations and external situations are not always chosen.[5]

1.1.7 Authenticity

A final commonly mentioned concern is that of authenticity (de Sio, 2016; Sandberg, 2011). Biomedical cognitive enhancement as I have already mentioned, can include an increased capacity of processing and storing information as well as behavioral and psychological changes such as increased impulse control. This conceptualization of biomedical cognitive enhancement has generated concerns over whether it could undermine a person's authentic self. If one undergoes biomedical cognitive

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[5] I will further elaborate on this point when I discuss procreative beneficence.

enhancement, to what extent does her future behavior reflect her true self? For the purpose of this chapter, I will only examine how the literature of biomedical cognitive enhancement specifically has engaged with the issue.

Advocates of biomedical cognitive enhancement suggest that it would not change a person's authentic self any more or any differently than other traditional means of cognitive enhancement. Altering elements of one's identity through traditional means of cognitive enhancement is neither new nor necessarily problematic. At least as Dees (2008) explains, to the extent that controversial means such as conversion therapies are not applied. He points out that there are numerous practices which aim precisely in changing identity traits, for example psychotherapy, that are in fact widely acceptable.

Overall, the biggest perceived difference between psychotherapy and neuroenhancement is that the former can better reflect a person's ongoing commitment and effort to this change. Through more traditional means such as psychotherapy one has ample opportunity to reconfirm their commitment throughout the process as well as to show other praiseworthy traits such as hard work and self - discipline. Biomedical cognitive enhancement, for instance via drug administration, could make the process too easy to test a person's commitment to change which would make the authenticity of these changes seem questionable. Not only that but it could impede the person's ability of evaluating how she feels about these changes.

Nonetheless Dees seems to conclude that arguments against neuroenhancements could maybe succeed in claiming that biomedical means are incapable of recreating authentic experiences and traits- perhaps falling short in similar ways as Nozick's experience machine would. However, this is not the same as claiming that it would be morally problematic for them to do so.

On the other hand, as Sandberg (2011) explains, biomedical cognitive enhancement could even allow our authentic self to flourish by sparing us from having to dedicate our cognitive capacities to tasks that are too time consuming or that we do not find interesting enough. He also echoes Dees in explaining that biomedical cognitive enhancement would not necessarily influence our authentic self any more than the social, cultural economic background in which our views, thoughts, relations and interests are shaped.

Elliott (2011) explains that neuroenhancements could be understood as a way in which people return to their authentic self. For Elliott the relation between biomedical cognitive enhancement and authenticity should be understood within the broader context of people attempting to find their own unique way of being. Like cosmetic surgery, drugs or self-amputation, undertaking biomedical cognitive enhancement can be thought of in itself as a manifestation of originality and self- determination. Elliott concludes however that this could be problematic to the extent that our desire for biomedical cognitive enhancement could be driven by harmful or unjust social norms such as the stigmatization and prejudice against people with cognitive disabilities.

Having explored these concerns around biomedical cognitive enhancement there seems to be a common thread running through the discourse. Biomedical cognitive enhancement relies on its similarity to other established practices such as traditional cognitive enhancement or other technologies in terms of impact and risk to establish its legitimacy. This I have claimed is unconvincing because the bioenhancement literature does not attempt to justify or assert the desirability of these existing practices upon which it relies. Nor does it adequately reflect on how the benefits of biomedical cognitive enhancement would be distributed and who will bear the associated costs and risks. Advocates of biomedical cognitive enhancement try to show that it is not intrinsically bad by divorcing it from the social, political and financial environment in which it would take place. However, as I have attempted to argue this cannot address the negative consequences or problematic relations bioenhancement can perpetuate. Moreover, the way current literature on biomedical enhancements envisions potential risks and dangers, does not enable us to use the prospect of bioenhancement as an opportunity to reflect on how other established practices may themselves have negative impacts.

1.2: Why is biomedical cognitive enhancement desirable?

In the previous section I discussed the legitimacy and acceptability of biomedical cognitive enhancement compared to other practices, traditionally applied to enhance cognitive performance. Starting from the standpoint that there is nothing inherently problematic with the use of biomedical means as such, I examined the most commonly raised objections against the prospect of biomedical cognitive enhancement. My aim was not necessarily to weigh in regarding each concern raised. Rather it was to explore how the bulk of the literature conceptualizes potential risks and dangers that biomedical cognitive enhancement can bring. Through this I tried to identify ways in which these accounts lack tools necessary to address issues of inequality and discrimination. In doing so, I showcased how discussions over permissibility point to biomedical cognitive enhancement as a way of enabling individuals to compete against each other over desirable goods, improve their professional performance and comply to demands set by their social environment and working relations. I will now set aside the discussion about whether biomedical cognitive enhancement is permittable to turn to why it is desirable**.** That is to say, I will examine reasons why individuals should pursue biomedical cognitive enhancement for either it is inherent or instrumental value to achieve both individual and social goods.

Surprisingly, this question has not enjoyed quite as much attention as one would think. Indicatively, Menuz (2015) explains how he analyzed around 109 articles between 2006 and 2011 focusing on ethical and social concerns regarding biomedical enhancement. Out of these only three focused on an individual’s motivation to undergo bioenhancement and from them only one by Lamkin (2011), which I mentioned in the previous chapter, investigated the social influence of these individual desires. This lack of investigation I think indicates precisely that for most advocates of biomedical cognitive enhancement its desirability is self-evident.

In this literature, cognitive capacities are imagined not only as being inherently valuable but predominantly as instrumental as they can facilitate the conceptualization and actualization of a plethora of life plans. By enabling the storage and process of information, or the identification of relevant parameters in decision making, an increase to our cognitive capacities could help us actualize our goals (Hughes, 2004; Harris, 2007; Savulescu, 2005; Hauskeller, 2014).

When described in such terms it is easy to see why biomedical cognitive enhancement can sound appealing, gaining supporters of various degrees of enthusiasm. Bostrom and other transhumanists have expectations that are high to say at least. As one of the main figures of transhumanism and a main figure behind Humanity+, a nonprofit international educational organization for the advancement of transhumanism, Bostrom (2008) hopes that biomedical and other scientific innovations would eventually enable humans to read the contents of an entire library effortlessly or to achieve unprecedented longevity and even immortality. Consequentially there seems to be no good reason to put restrictions in any new technologies that could deliver on such goods (Hall, 2016)

Harris, another firm advocate of biomedical cognitive enhancement as I have already discussed, asserts that there can be no reasonable argument against enhancement because enhancement is by definition something positive. “Wouldn’t it be wonderful if we humans could live longer healthier lives with immunity to many of the diseases like cancer and HIV/AIDS that currently beset us? Even more wonderful might be the possibility of increased mental powers, powers of memory, reasoning, and concentration, or the possibility of increased physical powers, strength, stamina, endurance, speed of reaction, and the like. Wouldn’t it be wonderful?” (Harris, 2007, p.8). For him, the answer clearly seems to be yes. This is unsurprising as he seems to understand an implied connection between increasing certain capacities through biomedical means and increasing overall welfare both at an individual and a social level. More than that though, Harris explains that biomedical cognitive enhancement might be necessary not only to increase, but to sustain current levels of wellbeing. Undertaking the task of leading the course of our own evolution might be the best way for humans to adapt to an ever-changing environment.[6]

For Hughes (2004), biomedical cognitive enhancement can come as the counterpart of ‘the liberal democratic revolution’. Democratic reforms have managed over the last couple of centuries to diffuse control and authority. The driving idea is that people, being capable of reason, experience increased wellbeing as they become progressively more in control of their own lives. Biomedical cognitive enhancement can precisely increase this control and the scope for autonomous actions not only over our environment and our political institutions but also over ourselves.

Similarly to Harris (2007), for Savulescu, Sandberg, and Kahane (2011) biomedical cognitive enhancement is an enhancement precisely because it can contribute to a

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[6] Similar arguments have been voiced by Persson and Savulescu (2014) regarding the need for biomedical moral enhancement as a way to deal with climate change or acts of global terrorism.

person's wellbeing. Savulescu makes a distinction between a functional enhancement which is the enhancement of a specific capacity and human enhancement which is the enhancement of a person's life.[7]The authors explain how our understanding and definition of biomedical cognitive enhancement is influenced by multiple different factors including where biomedical enhancement stands within the broader role of medicine and the cultural and historical shaping of concepts of health, disease or normalcy. However, for them the idea of increasing welfare- whether it is in terms of opportunity, well- being, equality, quality of life or anything else remains an inherent part of the biomedical cognitive enhancement enterprise.

The above indicates that for its advocates, the biomedical enhancement project is made intelligible insofar as it contributes to wellbeing. Sandberg and Savulescu make this connection explicit by embedding biomedical cognitive enhancement in what they call a welfarist account. For them within this framework biomedical cognitive enhancement is understood as "any change in the biology or psychology of a person which increases the chance of leading a good life in the relevant set of circumstances" (2011). For such a welfarist account, the distinction between treatment and therapy does not hold the same importance as it does in other accounts since treatment, is simply a part of what constitutes enhancement (Hildt, 2013)

One of the ways in which Sandberg and Savulescu expect biomedical cognitive enhancement to increase individual and social benefits is in economic terms. They explain how cognitive functions such as those relating to memory or impulse control can improve someone's budgeting abilities on a day-to-day basis. They claim that for example, the UK public spends about £500 million annually in replacing lost keys. Similar amounts are lost from households who do not keep on top of what they pay on direct debit. Biomedical cognitive enhancement could increase control and improve one's individual budgeting. Moreover, apart from increased savings per household,

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[7] The discussion about the purpose of bioenhancement and how the term should be understood is long. It includes questions about whether enhancement targets a capacity or a more broadly -the human condition- or if the distinction between disease and enhancement should have any normative value. Most scholars of enhancement engage in these questions such as Buchanan et al. 2001; Harris, 2007; Sandel 2007; Fukuyama, 2003; Kass ,2004. For a brief overview of the literature see Bateman and Gayon 2015; Goffette, 2015.

these economic benefits, according to the authors, can trickle down to have a broader impact on a broader social whole with an overall productivity growth, or an increase in human capital **(**Sandberg & Savulsecu, 2011, p.95-96)

This though assumes that the additional cognitive capacities will be available for such uses. Biomedical enhancement advocates have heavily focused on the positional goods that such increased capacities will bring. As such the assumption that these newly increased capacities would be available for such activities becomes less plausible.

The merits of biomedical cognitive enhancement as described above, therefore encompass two types of benefits. Firstly, cognitive bioenhancement could increase a person's capacity to perform day to day tasks and secondly it can increase a persons' capacity of reflective choice and autonomy. Enhanced cognitive capacities could enable people not only to revise and achieve their goals but would also broaden the scope of available options. People would gain a better access to material and non - material goods, necessary to carry out their plans by gaining a competitive advantage in the labour market. Such benefits, Sandberg and Savulescu (2011) argue, can help someone recognise and avoid exploitation as well as unwanted dependency on others. In this way one can increase control over one's environment and gain a greater scope for autonomous action. By this I mean that bioenhancement focuses on cognitive capacities because they can function as an all-purpose good that enables conceptualising and acting on a life plan**.**

However not all scholars are equally convinced about the merits of biomedical cognitive enhancement. Elliott (2011) suggests that biomedical cognitive enhancement can be understood as an additional way for self- expression, identity and recognition.[8] As both he and Meulen (2015) observe, this new prospect can be a double- edged sword. Types of bioenhancement could indeed offer opportunities for

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[8] He explains that in pre 18th strict social hierarchies, social identities and the recognition that stemmed from them were comparatively much more fixed. As we move further away from that, people become burdened with the responsibility of cultivating an identity of their own which will serve as a basis for dignity in a democratic context. The risk of identities not been met with the appropriate social recognition and dignity not respected increases. Biomedical enhancement can give a person additional tool to adhere to social norms enabling this social recognition

self -expression. They could also foster though pressure for people to change traits in order to comply to socially dominant norms many of which are shaped though prejudice and discrimination. As such biomedical cognitive enhancement can perpetuate such biases (Nagel, 2010).

To explain how that could work, Elliott (2011, p.366-367) turns to the example of cosmetic surgery and how members of ethnic and racial minorities choose to have certain features changed following Eurocentric standards of beauty. Arguably this is problematic to the extent that it is motivated by pressure to confirm to norms based on prejudices and underlining racism and to the extent that concepts of beauty are shaped by Eurocentric standards. Such cosmetic surgeries could increase personal wellbeing by allowing individuals to confirm to dominant norms and therefore alleviating for them the impact of social exclusion and stigma. However, this would be done at the cost of upholding and perpetuating these harmful social structures exemplifying a case where individual and social goods can clash.[9]

Not only that, but as Elliott suggests when motivated by social pressure or discrimination such procedures may also be rather ineffective in increasing individual welfare. As Elliott (2011) and Menuz (2015) explain, a person belonging to an ethnic minority who undergoes cosmetic surgery to confirm to more European beauty standards apart from perpetuating harmful racist norms could simultaneously be engaging in a futile enterprise if such changes are not prompted by a sincere desire to change their appearance per se but rather stem from a desire to avoid stigmatization and exclusion. For Elliott that is to say, such modifications that do not stem from a genuine desire cannot actually increase wellbeing even if minimize the negative impact of discrimination.

I claim that there is a significant parallel that can be drawn between such practices and biomedical cognitive enhancement. Elliott seems to be echoing concerns of biomedical cognitive enhancement being a quick fix. In the same way that cosmetic

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[9] This is something that Savulescu also recognizes. However, he seems to think that when this occurs individual freedom to self-determination trumps any concerns about broader social impact (Savulescu 2001)

surgery can indeed ameliorate someone’s position by allowing them to conform to social expectations, biomedical cognitive enhancement could do the same. Biomedical cognitive enhancement, as I will show later in this chapter, often stems from ableist presumptions about the value, quality of life and even moral status of cognitively disabled people. Not only that but as I extensively explain in the next chapter, biomedical cognitive enhancement advocates often link limited cognitive capacities to poverty and criminality. Enabling individual cognitive enhancement can perpetuate such stigma in a similar way that Elliott claims cosmetic surgery does, especially when bioenhancement is presented as a quick fix divorced from an analysis of relevant social factors and justice.

Another reason to be sceptical towards biomedical enhancement is that acknowledging cognitive capacities as useful for most conceptions of a meaningful life is not tantamount to claiming that more of such capacities would be inherently better in terms of a person’s wellbeing. For example, let us take an increase of instrumental reason. A person with increased instrumental reason could be more capable of understanding and processing information that would allow her to explore available options as well as how to best actualize them. This means that she would have broader choice both in terms of goals and of means to achieving them (Velleman, 2007)

Although this seems to be precisely the attraction of cognitive bioenhancement not everyone is convinced that such a development would necessarily improve a person’s life. As the number of choices available to us increase so could anxiety, the pressure to choose correctly or even to make a choice in the first place. We can therefore see how an increase in a person’s capacity might entail a decrease in their welfare.

For example, certain life goals and choices are simply incompatible regardless the cognitive abilities one has. I might be fully aware that large amounts of sugar are not good for my health. If I still keep consuming them it is because I have measured how much I value the pleasure of eating sugary treats against the respective health cost. Biomedical cognitive enhancement would not necessarily resolve this dilemma because the issue is not a lack of instrumental reason, rather it is the case of comparing the value each good holds. Hauskeller explains that people feeling unfulfilled is often caused not by lack of instrumental reason but rather by an inability to find and commit to goals one thinks are worthwhile. Hauskeller (2014) does not deny the role of instrumental reason in helping us form and pursue satisfying life plans. Rather he seems to be warning against overestimating its significance and the respective benefits biomedical cognitive enhancement could bring at the expense of other contributing factors.

Similar concerns have been articulated by Nagel (2010). He explains that biomedical cognitive enhancement allows us to conceptualize and reflect on life goals and means of attaining them. In doing so, it increases the choices available allowing a greater freedom for people to exercise their autonomy and be who they want to be. In the majority of the biomedical cognitive enhancement literature, increased choice and autonomy are tantamount to increased wellbeing (Bostrom, 2008; Sandberg, 2013; Hall, 2020; Savulescu & Kahane, 2011). Any additional options made possible by biomedical cognitive enhancement could be explored by those who choose to do so whilst anyone not interested can simply ignore them. The key underlying assumption is therefore that increased options would either benefit those who would like to pursue them or would simply have no impact on others.

However, Nagel (2010) explains that the above analysis relies on the depiction of people as having well- ordered preferences within a rational choice theory framework. This though is not necessarily the case as people often are not capable of identifying their desires and preferences- as Hauskeller has also suggested. Moreover, Nagel argues that increased choice might in fact be harmful. People can be made worse off through more choices as they can become debilitated and unable to act, or increasingly more dissatisfied with the choices they make. Given the plethora of choice and information that biomedical cognitive enhancement could offer one would be responsible not only for the choice they make but also for the choices not made. Nagel explains that some people make a choice they see as the best possible available option. Others do not necessarily look for the best option but rather for options that satisfy a certain set of criteria. In either case, he argues an increase of available options could increase the risk of them regretting the outcome of their choices. Nagel (2010) concludes that before any final assessment is made, further research is needed on whether this increased control would actually increase human wellbeing particularly given indications from other fields such as psychology studies or consumer behaviour research.

The complex relation between enhancing a trait and a person's wellbeing can also be examined through the example of increased memory. Memory enhancement represents a large part of the biomedical cognitive enhancement debate partially because multiple advances in biomedical cognitive enhancement seem to stem from Alzheimer's and Dementia related research. Regarding memory enhancement, the conversation and arguments are organized within two distinct areas, short-term memory and long -term memory. Short-term memory is understood as the part of memory relating to task completion performance. Long-term memory corresponds to elements shaping our identity, the way we make sense of past events and how they are connected.

Whether biomedically enhancing long -term memory would benefit someone significantly depends on other variables given that not all memories are desirable. The capacity to forget can be equally important for a person's wellbeing. The most obvious example are people suffering from the memory of a traumatic event. Arguably for sufferers of PTSD, it is better control of their memory rather than increased memory per se which might contribute to their welfare. Even that assessment though is not as straightforward. There is a broad spectrum of how people deal with trauma. Some may wish to forget the memory altogether whilst other consider it a part of themselves and place value on how these experiences have shaped them or how they have come to be an integral part of themselves. They recognize that the spontaneity within which memories operate are part of what makes them valuable.

Individual biomedical cognitive enhancement could also have social implications. Lavazza (2015) explains how, for example, people in a particular social environment could gravitate towards augmenting a specific cognitive ability such as good memory. They can be influenced by social norms understanding good memory as inherently valuable but also through pressure created if good memory is also seen as a positional good. The result could be a societal shift towards the cultivation of the selected traits at the detriment of others such as reflexivity or inventiveness (Lavazza, 2015). Even if an individual increases their own wellbeing by enhancing a particular cognitive trait, there is no reason to assume that this would translate well in a larger scale as there are too many other factors that could shape the end result.

In addition, the idea behind biomedical cognitive enhancement seems to be that increased cognitive capacities would work by enhancing processing capacities as a whole in any social environment. This is not necessarily the case though. As Campbell and Wasserman (2020) explain, cognitive functions require the contribution and cooperation of a plethora of individual capacities, an increase of each requiring potentially different biomedical interventions and social conditions. These biomedical interventions or social environments might not always be compatible. Therefore, enhancing a particular component of cognitive function might come at the expense of another component. To explain they turn towards research on the impact deep brain stimulation has on a person's mathematical abilities.[10] The research suggested that depending on which part of the brain was stimulated, the subjects would show an increase in certain mathematical abilities such as learning new content and a decrease in other aspects such as the command of already known material. This seems to imply that there is no guarantee that a compound function will improve as such through the enhancement of its constitutive parts. (Campbell & Wasserman, 2020, p.570).

Similar concerns have been raised by Drayson and Clark (2020), who suggest that forms of knowledge and understanding relating to task completion might not be merely a case of cognitive capacities but rather an embodied process. Cognitive science has focused heavily on the brain. This has come as the expense of attention to the way the body and other sensory capacities contribute to the development and actualization of cognitive capacities. The authors explain how both sensory systems and the environment can shape cognitive processes challenging traditional ideas stipulating that reasoning in itself can account for intelligent action. Drayson and Clark claim that a better understanding of the embodied approach to cognitive processes can be seen in the advancement of robotics, where “Traditional approaches to cognitive science focused largely on the complex information processing that took place between sensory inputs and motor outputs, so roboticists often tried to program their robots with complex computational systems that mediated between the sensory inputs and motor outputs.” (Drayson & Clark, 2020, p.582). The impact broader sensory or motor capacities can have on the development and expression of cognitive capacities,

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[10] The material cited is Iuculano and Kadosh, 2013 p. 4482

suggests that bioenhancement might be an even more complicated process than assumed. As the focus expands from the brain to other bodily capacities, the number of constitutive parts to cognitive function increases**.**

Setting aside issues regarding the feasibility of enhancing instrumental reasons, concerns like those raised by Hauskeller (2014) and Nagel (2010) seem to be questioning the link between biomedical cognitive enhancement as increased instrumental reason and choice on the one hand and increased welfare on the other. For Hauskeller, talking of human biomedical enhancement is in itself non sensical as it would imply that it enhances humans as such. As this has little meaning, he claims, biomedical cognitive enhancements are better understood as improving a very specific capacity and nothing else. Meulen (2015) also explains that whether an enhanced capacity increases welfare is uncertain as there is no clear agreement on what is a benefit or a harm. For Buchanan (2001, 2011) as well, a process can be considered as biological cognitive enhancement if it successfully increases the capacity in question. This comes to recognize that there is no guarantee that enhancing cognitive capacities will necessarily lead to increased welfare. There are too many personal and environmental circumstances which would factor in. Therefore, it is better to understand biomedical cognitive enhancement simply in terms of capacities. By extension, whether any particular process ends up increasing or decreasing a person's welfare or opportunities is irrelevant to whether the process is classified as an enhancement. A capacity can be successfully enhanced even if an increase of welfare does not follow. This would presumably fall under what Savulescu and Kahane have called functioning enhancement.

These claims, I argue, indicate precisely the conceptual perils that defining a framework of enhancement entails. I agree that there is no inherent link between increasing a certain capacity and increasing a person's wellbeing. However, I claim that we have reasons to be skeptical of approaches that argue for a framework of biomedical enhancement based on a clean conceptual distinction between enhancing a capacity and enhancing wellbeing. Let us assume biomedical enhancement is understood strictly in terms of increasing a capacity- for instance cognitive capacities- beyond what is typical for the species or the specific person in question as per other accounts. This understanding means that a process would be an enhancement regardless of whether it would increase, decrease or have no impact on a person's well- being. If biomedical enhancement is simply understood as a departure to typical species functioning, then what distinguishes it from disability?[11]

A useful way of appreciating the conceptual limitations of understanding biomedical enhancement strictly as enhancing a capacity is to consider the medical model of disability. As I will discuss in detail later on, under the medical model, disability is understood precisely as the absence of a capacity typically found in the species. Amongst the reasons that this model of disability has been criticized, there are two pertaining to bioenhancement; these are (1) the neglect of social factors in constructing and understanding disability, and (2) an inability to explain which departures from typical species functioning are a disability and why**.**[12]

Firstly, the medical model has been criticized for not considering the role of the social environment in rendering a certain physiological trait a disability. Philosophers of disability along with disability justice activists have argued extensively that the medical model does not address how lack of social accommodations, prejudice and socially influenced accounts of wellbeing translate individual physiological traits into disadvantages. Rather than taking such factors into consideration, the medical model of disability seems to rely on species typical functioning being normative.

I understand that the attempt to conceptually distinguish between enhancing a particular capacity and enhancing wellbeing comes precisely as a way of acknowledging that there is not a direct link between a certain trait and wellbeing that

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[11] I take a similar problem to manifest when discussing the relation between humans and posthumans in terms of understanding and comparing their capacities. In particular this is highlighted in McMahan's (2002) discussion of a Superchimp who is born with the capacity of developing an intellect comparable to that of an 11-year-old human child. McMahan refers to this as enhancement and to the possibility of Superchimp reverting to her typical species functioning as a tragedy compared to humans becoming disabled. However, it is not clear what would make this increased capacity an enhancement in the first place and why loosing this capacity would be akin to becoming disabled.

[12] In the next chapter I will discuss at more length the medical, the social and the welfare model of disability. Although they are not an exhaustive list of ways in which disability is understood, they represent the most influential and most relevant in terms of understanding conceptual limitations within bioenhancement.

is independent of other external factors relating to the social environment. This link exists not only in terms of the broader social environment but also in terms of individual situations. For example, enhanced eyesight might contribute to my wellbeing both because social arrangements are catered towards those who have the capacity to see but it also might be an enhancement because I happen to be a pilot. For my specific situation eyesight is more valuable than it would be if I were for instance a signer.

Nonetheless, even though this distinction between enhancing capacities and enhancement comes as a recognition of social contingencies, such an approach cannot be meaningful. As I mentioned the medical model of disability is based on the idea that the way bodies typically operate is the way they should operate and that this contributes to wellbeing. Any traits deviating from this description are therefore medicalized. Biomedical cognitive enhancement and biomedical enhancement in general, by definition, reject any normative claims based on typical species functioning. Biomedical enhancement of a capacity entails precisely departure from typical species functioning. If bioenhancement then is also detached from wellbeing it is unclear what conceptual grounding remains available.

To elaborate, I will turn to the second criticism of the medical model of disability. An understanding of disability strictly as a departure from typical species functioning is conceptually limited because it does not explain why all departures from typical species functioning are not considered disabilities. For example, some people cannot do the Vulcan salute as they lack the necessary control to separate their ring finger from their middle finger on command without help from their other hand. No one considers this a disability. This is because there is not social significance or value ascribed to the ability to perform the Vulcan salute. As such, an inability to do so bears no consequence in a person's wellbeing. If traits are only examined in terms of whether they depart from typical species functioning and not in terms of whether they diminish or decrease a person's wellbeing, then what would the difference be between enhancement and disability?

An example elucidating this issue I would argue can be found in Hauskeller' and his analysis of Funes the Memorious

> "In his story "Funes the Memorious", the Argentinian writer Jorge Luis Borges describes a man who, as a result of an accident that left him paralyzed, found himself

equipped with perfect memory and perfect sensuous perception. Funes, as the man is called meets the definition of a transhuman defined by Bostrom as “a being that has at least one… general central capacity greatly exceeding the maximum attainable by any current human being without recourse to a new technological means (2008: 108), one of these central capacities being memory. As it happens, the story‘s narrator refers to Funes as a predecessor to Nietzsche’s overman. In spite of this, Funes appears to be severely disabled not because of his physical impairment but rather because of his vastly improved memory and perception. Both present and past are to him “almost unbearably rich and clear” (Borges, 1962, p.112). We ordinary humans can see the sun raise and perhaps spot some details that are unique to this specific sunrise, but the post human Funes “knows exactly the forms of the clouds during the sunrise of 30 April 1882” and in fact any detail of anything he has ever perceived in his life. He is said to have” more memories than all other human beings together”. But this means that his memory is in his own estimate, “like a garbage bin”. It is anything but a blessing” (2014, p.22-23)

Although Funes the Memorius might have been a fictional character, his condition is not. As Hauskeller mentions, a patient referred to as S. treated by Alexander Romanovich Luria in 1960 experienced the same symptoms as Funes. As medical knowledge advanced this condition became known as Hypethymestic Syndrome and since 2006 when it was officially named, more people have been diagnosed with it (2014, p.25) What this example indicates is that the relation between certain capacities, such as the ability to walk or have superhuman memory, and wellbeing is not as straightforward as bioenhancement advocates seem to assert.

Again, I agree that linking certain traits to wellbeing is indeed problematic. Not only is wellbeing dependent on multiple interconnected factors making it difficult to understand or predict the impact an enhanced trait might have on someone’s wellbeing, but such thinking also carries ableist prejudice. If the enhancement of certain capacities is thought to have a positive impact on wellbeing, then the lack of such capacities could be considered as a marker of diminished wellbeing. Such assumptions, as I will argue in following sections, have detrimental effect on disabled people contributing to their marginalization and exclusion and even undermining their right to equal respect and care.

In spite of that, I claim that distinguishing between biomedical cognitive enhancement as increasing a capacity and as enhancing human wellbeing is not intelligible because wellbeing is precisely the principal reason behind advocating for biomedical cognitive enhancement at the first place (de Melo Martin, 2010; Kipke, 2013). Proponents of biomedical cognitive enhancement do not advocate for enhancing a particular capacity for its own sake. Rather it seems to be because they presume this capacity plays a positive role in increasing a person's overall wellbeing. Discussing biomedical cognitive enhancement in terms of increasing a capacity as separate from increasing wellbeing detaches biomedical cognitive enhancement from the primary reason for its development. Problematic assumptions over what constitutes a good life seem to be at the very center of the biomedical enhancement project.

This centrality is reflected in which traits are considered by the literature as suitable candidates for bioenhancement. There are- for the most part- no advocates of biomedical enhancement arguing in favor of cognitive diminishment, shorter life span or a greater chance of having cancer. Rather it seems to be a list of traits that are understood by their proponents as unquestionably 'positive', compatible with a broad range of life plans and contributing to individuals leading an autonomous life, upon which they can exercise control. This understanding indicates that whether openly acknowledged or not, for advocates of biomedical enhancement there are certain abilities that, by default, are better to have than others and that the point of enhancement is to make life 'better' based on this framework.

On the contrary, cases in biomedical enhancement which consider enhancing traits rarely viewed as unconditionally desirable are subjected to different degrees of scrutiny. This includes, for example, couples who are deaf or have dwarfism wanting to select fetuses through IVF which would share these traits. For advocates of biomedical enhancement there is no need to further argue one's desire to make themselves smarter or to have smarter off-springs. However, in the case of selecting a child with dwarfism and deafness- as I will elucidate further on- the burden relies on the parents to prove that there are enough added benefits in doing so to counterbalance what is taken as a clearly negative trait, so that the overall welfare of the child is enhanced (Kafer, 2013; Sandel, 2007; Hughes, 2004). This attitude is again indicative of the conceptual link between certain traits and wellbeing that underlies the biomedical enhancement literature.

If therefore, as I have tried to show, biomedical enhancement cannot properly be understood simply in terms of enhancing capacities, then what could an alternative framework look like? Savulescu and Kahane attempt to provide an answer by taking a different approach and conceptualizing bioenhancement directly in terms of wellbeing. Under their proposed enhancement as wellbeing framework, an increase in cognitive capacities would be recognized as an enhancement to the extent that it contributes to a person's welfare. This analysis of enhancement mirrors their understanding of disability as a disadvantage. (Savulescu et all, 2011; Kahane & Savulescu, 2016; Savulescu & Kahane, 2011)

As the authors explain, the prospect of bioenhancement is something that is in everyone's interest. To elucidate, they turn to disability understood as being symmetrically opposite to enhancement. Disability is described as "any state of a person's biology or psychology which decreases the chance of leading a good life in the relevant set of circumstances" (Savulescu et al, 2011, p.12). In such a sense, everyone is disabled in at least some way since everyone has traits which impede their wellbeing. Bioenhancement therefore can be beneficial to everyone exactly because everyone could enjoy an advantage by enhancing certain physiological traits.

This model of enhancement as welfare seems to reflect the underlying assumption that runs through the enhancement enterprise, namely that bioenhancement can enable human wellbeing. It also seems to be sensitive to cases like Funes the Memorious, in which an increased capacity leads to diminished wellbeing and therefore cannot meaningfully be understood as enhancement. Nonetheless, I would argue this model also presents certain limitations. One issue is that it can be quite revisionary with what is considered as an advantage or a disadvantage and therefore an enhancement or a disability. To an extent that, as Wasserman and Campbell (2020) observe, it might not be able to accommodate paradigmatic cases of disability. Traits such as timidness or lack of impulse control can greatly impact on a persons' life shaping their relations, professional development, and interests. Given the appropriate social environment it might be the case that such traits impact on a person's wellbeing more than if they were a wheelchair user for example. Savulescu and Kahane's model would allow for timidness to be consider a disability but being paraplegic not. Disability in this account seems to become detached from the body (Campbell & Wasserman, 2020)

Another issue is that the wellbeing account of disability seems disconnected from accounts of justice that would stipulate what social accommodations people would be owed. Not all disadvantages or advantages fall under the scope of justice in the same way. What someone is owed because their stubborn personality impacts their life and what someone is owed because they have achondroplasia might need a distinct set of conceptual tools to be addressed. There are further implications of this model that merit our attention, with which I will engage further on. For the moment, the aspect I would like to focus is how understanding enhancement as increased wellbeing shapes how we evaluate particular capacities.

As I have tried to show the biomedical enhancement project presupposes an account of human wellbeing. This is the case whether arguments explicitly embrace this connection as the welfarist model does or whether they attempt to severe such links and focus on the increase of specific capacities. Either account recognizes, even if they respond differently, that there is no definite link between physiological traits and wellbeing. On what basis then do advocates of enhancement suggest specific traits such as cognitive capacities, as good candidates for the enhancement enterprise?

One reason why bioenhancement proponents suggest cognitive capacities to be well suited for enhancement is because cognitive capacities such as instrumental reason are viewed as an all- purpose good. People have different accounts of what life plans are worth having. For the most part western liberal political theories aim to accommodate this pluralism and to avoid endorsing any particular life goals. Such a variety of life plans would require respectively a diversity of skillsets. It would not be an easy task for biomedical enhancement advocates to assess which traits should be enhanced given how much individuals' goals can vary. An artist may require different abilities to excel in her field than what a mechanic, a lecturer, a doctor or a stay-at-home parent might need. This is even more the case as people can reassess their life's plans.

Bioenhancement literature, following Rawls, seems to be oriented greatly around the idea that certain traits are integral for a good life and are compatible with a wide range of valuable life plans people adopt (Savulescu & Kahane ,2011; Buchanan et all 2001). Certain capacities such as cognitive capacities are presumed to be central in accomplishing any kinds of valuable life goal. Consequentially, regardless of any specific plans, having enhanced cognitive capacities is more likely to increase a person's wellbeing than not having them. Not only because they can be applied to actualise life goals but because they are necessary for their formation and revision.**[13]**

At first glance, this seems like a reasonable approach seeking to uphold state neutrality towards what lives should people lead. However, I argue that biomedical cognitive enhancement cannot work within such a pluralism. Rather, it puts forward a specific criterion of wellbeing and endorses a view of which life goals are worthwhile. Accounts advocating for biomedical enhancement, and biomedical cognitive enhancement in particular, are advancing wellbeing and a valuable life understood specifically through commitment to kind of *autonomy*. Specifically, autonomy which, within this literature, is conceived as increased control over oneself and one's environment and as increased options.

Biomedical enhancement is, in itself, depicted consistently as a choice. By utilizing such means people are enabled to choose traits that would further their options and control, such as cognitive capacities are imagined doing and avoid traits that could limit their options and control as cognitive disabilities are imagined doing. Through this the body is imagined as a locus of intervention and improvement. Traits are placed under a hierarchical order depending on their compatibility to an extension of control and choice. Savulescu and Kahane's account linking enhancement to wellbeing, which as I have shown runs through the very concept of bioenhancement, stipulates precisely that everyone could benefit from such technologies because everyone is in

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[13] Rawls' work can be often seen in discussions of biomedical cognitive enhancement and particularly in terms of distributive justice. This is partially because of concerns that biomedical enhancement is a colonization of nature by categories of justice which would invoke changes on how the natural lottery is understood and what implications would that hold. There has been some discussion about whether Rawls' work can be interpreted in a way that could include biomedical cognitive enhancement in a category of primary goods. Primary goods are distributed as a matter of justice and are material and non-material goods which are instrumental in pursuing different accounts of a good life understood within a reasonable pluralism. **(**See Buchanan et all 2001). My aim is not to weigh in which interpretation of Rawls's view seems more persuasive. Rather it is to point out that proponents of biomedical cognitive enhancement often look at Rawls's primary goods as an example of how biomedical cognitive enhancement would function in scope of its utility and compatibility with a variety of life goals.

some aspect disadvantaged and therefore disabled. We are all, to an extent, constrained by our bodies.

This seems to echo a more subtle version of Bostrom's transhumanism whose object seems to be to subjugate the body to the will and control of the mind and eventually even to challenge our own mortality. Traits like cognitive disabilities, which are perceived as a threat to such an extension of choice and control, are denounced as undesirable and as a site of risk. As such, the abled and enhanced body is depicted as a manifestation of opportunity, choice and wellbeing whilst the disabled body is feared as a sign of limitation as Hall (2016; 2020) points out.

This view can, be seen in cases where proposed traits challenge the boundaries between enhancement and disability. For example, as I previously mentioned, deaf parents or parents with achondroplasia are met with objections when wanting a child that shares their disability (Sandel, 2007; Kafer, 2013). Parents claim that a child who would also be deaf would have just as many opportunities to lead a good life and most importantly their child would have the opportunity of membership in the deaf community. These are valid reasons but still parents wanting deaf children are challenged in a way that parents wanting a child with increased cognitive capacities are not. The reason behind this discrepancy is that cognitive enhancement is deemed compatible with the above-described account of autonomy as choice and consequentially with a good life whilst deafness and achondroplasia are not. Such suspicions towards traits like deafness seem to be based on the assumption that such traits would restrict available options. A person born deaf would not have access to all goods and choices a hearing person will have. Their future will not be as open ended as it would if they could hear, other things equal. What though seems to be the problem is that such presumptions that run through the entire discourse of biomedical enhancement do not seem to encompass the way disabled people or more specifically in this case deaf people think about themselves and evaluate their wellbeing. Rather, as I will be arguing later on, these presumptions are often based on ableist prejudice.

The point I am trying to make here is that firstly biomedical cognitive enhancement, whether explicitly stated or not, is inherently linked to human wellbeing understood as an extension of choice and control. Specifically, my concern is that although choice and control[14] influence heavily the way that biomedical enhancement literature has been shaped, they are not openly acknowledged and the way they operate is insufficiently scrutinized.

This narrative that is oriented around increased control and limiting vulnerability and dependence which are seen as inherently negative and as a threat to wellbeing fails to conceptualize autonomy in a social setting. As I described in the first section of this chapter, biomedical cognitive enhancement is imagined as a way of increasing participation in the labor market, facilitating competition within the professional sphere or adapting to demands within professional setting. This reflects how, autonomy is understood precisely within a liberal tradition as the capacity to participate in the labour market (Hall, 2016; 2020)

The drive towards biomedical enhancement under conditions like those I described in the first section, I would argue though, hardly seems to expand someone's choices and control as has been made clear in the objections over biomedical enhancement enabling coercion. Biomedical enhancement does nothing to protect from vulnerability originating from power inequalities and exploitative working relations. The enhancement enterprise is obsessively oriented around individuals and their capacity of reason whilst systematically ignoring the constraint on choices and the limitation of control imposed though social and economic inequalities. The result is the unjust demonization of vulnerability and dependence and the devaluation of the disabled bodies that bear their mark. This indicates not only the dominance of some values over others within the bioenhancement literature but also depicts a literature that is unreflective over the histories that shaped the values it holds as universalizable.

Biomedical cognitive enhancement as I have discussed emphasizes the value of intellectual abilities for human wellbeing. However, as I have also explained even ardent supporters of biomedical cognitive enhancement like Savulescu who have imagined biomedical cognitive enhancement as integrally linked to increased welfare

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[14] Interestingly the right to an open future has been given as a reason against enhancement (Sandel, 2007). The idea behind being that parents biomedically enhancing their offspring is in itself denying them an open future as it allows parents to intervene on aspects of their children that otherwise would have been untampered with. Biomedical enhancement advocates claim that such practices are not only compatible but rather they can enhance a child's opportunity for self -determination.

recognize that there is no direct link between increased cognitive capacities and wellbeing. Savulescu, Bostrom, and Sandberg seem to agree that “While super-intelligence might seem to be an enviable trait or disposition, being ‘too smart for one’s own good’ is not always a mere teasing admonition: for many intellectually gifted individuals, very high intelligence can come at a direct cost to their overall well-being (Harrison and Van Haneghan, 2011).” **(**Earp et all, 2014 p4; Cakic, 2009; Bostrom & Roach, 2011; de Melo Martin 2010; Brukamp, 2013; Krutzinna, 2016)

This lack of reflexivity about the role of cognitive capacities in a person’s wellbeing has relates to why these traits are considered integral to wellbeing. As advocates of biomedical cognitive enhancement explain, cognitive capacities are instrumental because they enable access to material and non-material goods from housing and a prestigious professional position to social recognition. It is these goods that increase welfare within an existing distribution pattern. This is clearly echoed by Bostrom and Roach. They explain that there are a number of conditions either natural or man -made that undermine human wellbeing. Unfortunately, it is often the case that the barriers preventing human wellbeing demand strenuous effort on behalf of people or deep - rooted social changes that happen through slow progress and whose outcome is uncertain. Biomedical cognitive enhancement could provide an alternative to this situation. Bostrom and Roach invite us to imagine the numerous benefits for individuals and also the broader social whole from cheap, convenient, fast acting biomedical cognitive enhancers that could bring forth the same effect with much less effort, time, and even resources (Bostrom & Roach, 2011).

I certainly agree that necessary changes in social norms or political goals are slow to take place. What I take it to be the problem, as I mentioned in the previous section, is that the current biomedical cognitive enhancement literature, lacks the tools to differentiate between cases where justice demands social change and cases in which responsibility lies with individuals. This distinction can be overlooked for the sake of efficiency along with considerations over how the costs and benefits will be distributed and amongst whom. By failing to make this distinction and discuss such considerations the current biomedical cognitive enhancement literature could perpetuate inequalities by affirming unjust social structures instead of questioning their legitimacy. In turn, such consequences indicate that biomedical cognitive enhancement may not always be compatible with demands for social change as its advocates claim.

Chapter two: Disability

In the previous chapter I discussed biomedical cognitive enhancement focusing on why it would be objectionable and what makes it desirable. I argued that the literature on bioenhancement rightly identifies issues pertaining to coercion, distributive justice and quick fixes to social problems. However, it has neglected challenging ableist premises that make bioenhancement desirable in the first place. I argued that what makes bioenhancement desirable is the idea that increased capacities lead to increased wellbeing. As such bioenhancement is presented as occupying the opposite end of the spectrum to disability, the former imagined increasing wellbeing while the former limiting it.

In this chapter I turn to disability to further examine this claim and to challenge this main premise of the bioenhancement enterprise, namely that increased cognitive capacities lead to increased autonomy and as such increased wellbeing. In particular, I will turn to examine how disability is understood, if the lives of disabled people are inherently worse and if so, on what grounds would this be. In the first and second section I focus on competing accounts of disability. I explain how a working framework of disability needs to be able to give a persuasive account of who is disabled and why. I then turn to examine three major models of disability, namely the medical, the social and the model of disability as welfare. My aim is to show how although within disability studies the dominance of the medical model which understands disability as an individual departure form typical species functioning has been challenged by the social model, the same has not occurred yet within the bioenhancement literature. The social model of disability has focused on how social conditions translated certain physiological traits into disabilities. Biomedical enhancement advocates have not yet extended similar attention to the social conditions that would render certain physiological traits an enhancement. Although bioenhancement advocates argue against the tyranny of the “normal” that dictates bodies should function within typical species functioning, there has been no extensive examination of the legitimacy of the social conditions within which bioenhancement will emerged and which will contribute to how it is understood.

In section three, after having discussed competing accounts of how disability is understood, I turn to ask if disability is inherently bad. This is a key point as it addresses the underlying premise in the bioenhancement discourse, that certain capacities are directly linked to welfare. I discuss the intuition that disability is inherently bad as well as the Impermissibility argument that seeks to prove disability is bad and following Barnes (2016), I try to flesh out its conceptual limitations.

I then turn to section four where I explore how we can know if disability is bad by discussing the epistemic limitations of positive testimonies of disability and the issue of adaptive preferences. In section five, I continue with the issue of epistemic limitations and focus on the types of epistemic injustice I take disabled people experience to discuss how they shape our collective knowledge of disabled lives.

The purpose of these sections is to understand and challenge the limits of the latent idea about how welfare and capacities are connected, which underlies the intuition that disability is inherently bad, and that enhancement is inherently good.

I finally turn to discuss the issue of procreative beneficence as a form of bioenhancement. Procreative beneficence claims that parents have a moral obligation to produce the best possible offspring. Best, in this context, is understood as having the greatest chance for increased welfare. This is often articulated in terms of avoiding the risk of disability but has also been extended to encompass the possibility of enhancement. In this final section I will address the moral issues of selecting children with disability traits such as deafness. I will discuss how this challenges the dominant presumptions that increased capacities can contribute to increased autonomy and control which bioenhancement advocates understand as integral to a good life. I will then conclude that bioenhancement advocates rejecting the use of technological means to select children with disability traits indicates that they envision a future in which disabled people have no place.

2.1 Understanding disability

The relationship between disability and biomedical enhancement- cognitive or other- has been theorized by scholars both in favor and against enhancement. Some are convinced that biomedical enhancement can be used to improve the vulnerable position of disabled people by giving them the opportunity for a more autonomous existence and even eventually by eliminating disability altogether. Others argue that biomedical enhancement and disability rights are inherently incompatible as enhancement will simply perpetuate the discrimination and marginalization people with disabilities already experience.

Within the previous sections, I have discussed frameworks of biomedical cognitive enhancement. But although I have mentioned disability, I have not provided its definition. In this section, I will address this issue. Coming up with any single all -encompassing model of disability would be a daunting prospect given the sheer heterogeneity of experiences and conditions disabled people have. Disability can be physical or mental, congenital or acquired, fixed or fluctuating. It can severely influence a persons' life or have minimal impact and it can be seen through its relation to the body as well as the material and social environment.

There have been various models and concepts attempting to understand disability and offer a framework that would describe who is disabled and offer an explanatory and normative framework as to why they are disabled and how should one act towards that disability (Silvers, 2020). In doing so, as philosophers of disability observe, there are certain conceptual mistakes that proposed models of disability should be mindful of avoiding.

For example, according to Tremain (2020), the mere approach of philosophic discourses towards disability as a problem that needs a solution is presumptuous, especially when such approaches often rely on universalizable categories and are divorced from a culturally and historically situated analysis. As Barnes (2016) also explains, to provide an accurate account, models of disability should start from a neutral standpoint. A model based on pre-existing assumptions of disability being inherently good or bad would be ill equipped to provide an unbiased explanatory and normative framework. Furthermore, a successful model of disability must be mindful about straying too far from commonly accepted understandings of disability. A model of disability needs to accommodate cases that are paradigmatically understood as examples of disability. Finally, a model of disability should not be based on tautologies such as understanding disabilities in relation to ableism where ableism is understood in relation to disabilities (Barnes, 2016)

Although not to the same degree, many of the most influential models of disability have failed to meet some of these criteria. On the one hand, we can have what Beaudry (2020) calls determinist models in the sense that they are constructed around identifying fixed criteria of disability. This could include models in which disability is understood through a species typical functioning lens or through a social lens or even an amalgam of both. Regardless though of what the relevant criterion is, this type of analysis risks the danger of overlooking other relevant perspectives and creating categories that cannot express or reflect the lived experiences of disabled people.

This problem became clear when the United Kingdom’s Work Capability Assessment (WCA) adopted the biopsychological model of disability used by the WHO (Beaudry, 2020). Silvers, (2020) who refers to it as an example of a bad model, explains precisely how this model that emerged originally form research on musculo-skeletal pain was then expanded as a framework for cardiovascular disease and mental illness. In its original context, this model when applied by WCA had positive results by emphasizing and addressing the psychological aspects of experiencing musculo-skeletal pain and encouraging the resuming of work. However, once extended as a model for other disabilities, it led the WCA to encourage people with cardiovascular disease, mental illness and a plethora of other conditions to return to the workplace. Unsurprisingly perhaps, the biopsychological model failed to yield as successful results on these occasions.

For Silvers (2020) and Beaudry (2020) this is an indication precisely of a model relying on fixed markers of disability often representing paradigmatic cases, which are unable to accommodate different experiences of those for whom it aimed to provide a framework. Fixed traits gatekeeping who is eligible for specific accommodations can also be particularly harmful to those whose disabilities are not visible or not conforming to commonly held beliefs of what disability looks like. In particular, the biopsychological model not only failed to differentiate between the impact of chronic or temporary pain for instance but also failed to adequately appreciate the role of physical impairment by unjustifiably amplifying the importance of the disabled person’s psychology. The implication was that a failure to return to the workplace could largely be attributed to individual psychological factors. This had tangible effects on what policies were put in place from sick leave to perpetuating stigma.

On the other hand, one could adopt non-determined accounts of disability based around criteria for disability that are more fluid or more inclusive. Beaudry (2020) refers to such models as open- ended either in terms of referents or values. An open -ended account of disability would be disability as welfare which Kahane and Savulescu have advocated, or disability understood in terms of stigma or as solidarity as Wasserman (2000) and Barnes (2016) have respectively proposed. Such models can be considerably more flexible in terms of who is recognized as having a disability. By shifting the focus on potential harm that someone can suffer, this type of framework can include people that would otherwise slip through the cracks. For example, a framework of disability oriented around the detrimental impact of stigma would be able to cater to those disfigured by a congenital condition, an accident, as well as to those who are disfigured through self- infliction or to those who undergo extreme body modification voluntarily and do not consider it negatively. Stigma for Wasserman can be the common denominator allowing for a disability framework to encompass for all such cased regardless of other biological or social factors (Beaudry, 2020, p.12; Wasserman, 2000, p.158).

If that is the case then, why not abandon determined criteria for disability altogether and look towards the most convincing account of open-ended frameworks? As is the case with disability as welfare, the main problem is that accounts that gain points for being inclusive, face two distinct challenges. Firstly, an understanding of disability as a disadvantage is in itself too broad. There are a variety of traits composed both biologically and environmentally which can be disadvantageous. Not all of them merit the same response though. As I also discussed in the previous chapter, there is a need for a supplementary account to such a framework that would differentiate what actions should be undertaken and by whom to mediate this disadvantage.

Secondly, as Beaudry (2020) points out, broad inclusive frameworks make for great critical tools but for impractical policy design. Policymaking, laws, and institutional frameworks need to operate within a specific system, and this does not always allow for such flexible notions to be reflected. This is particularly important as disability movements have often been organized around demanding rights or demanding the reshaping of policies. Understanding disability as a specific determinant trait, connected to the body has been pivotal for such purposes. The danger of an over inclusive framework is therefore that it cannot function as a focus point for legal and policy related claims.

2.2 Models of disability

Having briefly sketched the above principles within which models of disability aim to operate I will now turn to examine some of the most impactful ones. The first one, which has been rather influential in the biomedical enhancement literature as I discussed in previous sections, is the medical model of disability. Disability, in this context is understood as a departure from species typical functioning in biological terms. Under this model blindness or deafness, for example, are disabilities because it is typical for members of our species to see and hear. The underlying assumption is that a description of how the body typically functions within the species is also *normative*, providing reasons to restore via medical treatment any deviating capacity. Disability is therefore understood as an impairment bound to individual bodies (Hall, 2016; Riddle, 2020)

At first glance, this seems an intuitive way to understand disability, as precisely the absence of an ability typically found in one’s species. However, there are grounds for several concerns with the medical model. The first issue is that similarly when typical body functioning is applied as a criterion of enhancement, this model does not account for the fact that departing from species typical functioning is not always considered a disability. People with ankyloglossia cannot stick their tongue out as an unusual amount of tissue connects the bottom side of their tongue to the floor of their mouths (Savulescu & Kahane, 2011). This condition can be fixed through surgery. It may be a departure from typical species functioning as our species can typically stick its tongue out. However, this is not thought of as a disability. In the same way, most people cannot lick their elbow. Nonetheless licking one's elbow is not thought of as an enhancement. Not only that but departing from species typical functioning is often celebrated. Many of the most renowned athletes are revered precisely because they show an athletic prowess unattainable by most of us. Olympic swimmer Michael Phelps's atypical body proportions and his atypically low production of lactic acid are not considered disabilities even though again they depart from typical species functioning.

As Barnes (2016) explains, typical species functioning does not refer to a merely statistical category (Buchannan et all 2001). Rather, it is meant to be understood in relation to how our species was designed to function in terms of our survival. However, as she points out, nothing in Phelps' physiology which departs from typical species functioning and makes him an elite athlete gives him an advantage in survival or reproduction. If anything, she points out, individuals with his body proportions have a higher propensity to cardiovascular diseases. [15]

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[15] Not only that but if the species survival and continuation is a relevant parameter then arguably being in a same sex relationship hinders one's possibility to reproduce compared to someone in a heterosexual relationship. To the extent therefore that sexual orientation can be biologically influenced and to the extent that LGBTQ are a minority in terms of the population, Barnes warns, an understanding of disability as departing from species typical functioning in relation to the species reproduction and survival could be stretched to include LGBTQ. (Barnes, 2016, p.15).

Moreover one can argue, as Boorse (1975, 1977) does that disease is a departure *below* typical species functioning which can be identified solely by empirical observations about the body as a way to distinguish it from enhancement. He distinguishes between a theoretical and practical concept of health, with their difference being reflected in the distinction between disease and illness. Disease relating to a theoretical concept of health is value free and “applies indifferently to organisms of all species. That is because, as we shall see, it is to be analyzed in biological rather than ethical terms.” (1975, p.56). On the other hand, illness which corelates to a practical concept is a disease with “certain normative features reflected in the institutions of medical practice. An illness must be, first, a reasonably serious disease with incapacitating effects that make it undesirable” (1975, p.56)

Therefore, the departure from typical species functioning is insufficient in itself to distinguish between enhancements and disabilities to the extent that the former is considered desirable and the latter is not. Rather as I have previously discussed the medical model operates alongside presumptions about which departures are positive and which are negative for a person's wellbeing. As such, the former are viewed precisely as enhancements whereas the later are understood as disabilities. By understanding disability, however, as a negative departure from typical species functioning the medical model can further the oppression and marginalization of disabled people.

An additional relating issue is that the medical model identifies the body as the locus of disability. Ignoring the social conditions under which physiological traits become disabilities perpetuates this idea that disability is bound to specific people. This means that interventions to the body are also considered as the best way to remedy any such problems. The cause of disability is individualized and so are the best practices of mediating it. The implications of this are numerous. Firstly, individualization of disability contributes to the marginalization and stigmatization of the disabled. Disability has a history of being thought of as divine punishment or manifestation of poor moral character or poor intellectual and psychological capacities (Carlson, 2013; Rose, 2017). Current representations of people with disability -from pop culture references to associating mental disabilities to gun violence- the image of disabled people as

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Whether or not Boorse is correct in maintaining that a theoretical concept of health is value free is not something that I will engage with, as I do not think it is necessary for the conversation. The criticism of the medical model of disability that I am examining is predominantly focused against what he calls the practical concept, which is normative. Therefore, what I mean when I say that the distinction between enhancement and disability cannot be meaningful solely on typical species functioning is that it alone cannot account for the different normative responses disability and enhancement elicit. Both enhancement and disability depart from typical species functioning. However, the normative responses -that disability is to be avoided and enhancement is desirable- are not merely a reflection of something being below or above typical functioning. Rather as I have argued in the previous section, they are a response to whether disability or enhancement are good or bad- for the individual or a social whole.

dangerous and a threat to the rest of the population and therefore of disability as an individual shortcoming is continued.

What is also important to acknowledge, is that the individualization and moralization of disability does not have to be in negative terms to be problematic. This can be seen through the damaging narrative of the “super-crip”. If disability is inherently bad and presents an obstacle to people living with it then, whenever disabled people perform any tasks- from the simplest mundane ones like going to the supermarket, to the more unique like winning athletic competitions or excelling in their profession, this is interpreted as them *overcoming* their physiological or mental disadvantages. Although this seemingly paints a picture of disabled people showing praiseworthy moral traits, it can be particularly patronizing and harmful. It mediates the relation disabled people have with their body and their self -understanding and it can prevent them from acknowledging their limits and demanding support (Taylor, 2017p, 12-13). This is especially common amongst disabled women who according to Hall (2016, p42-56) come to internalize these expectations and view any need for help as a sign of weak character. The similarity between this narrative and one that stipulates poverty as a matter or poor intellect and moral character is easy to spot. Both poverty and disabilities are portrayed as an unfortunate disadvantage that can be though overcome with the appropriate mental and moral attitude. Any failure to do so, is a personal failure. Unsurprisingly as Taylor point out, this attitude, which echoes the neoliberal framework that encompasses the bioenhancement project, serves less the interests of disabled people and more as a way of disciplining non-disabled people by encouraging them to be grateful and work harder (2017, p.15-16).[16]

Secondly, the dominance of the medical model is largely responsible for a continued failure to recognize the impact that social conditions can have on creating and understanding disability. As disability activists and scholars claim a physiological or mental impairment is not in itself necessarily a disability. Rather it becomes a disability under particular social conditions. For example, being a mobility aid user is not inherently a problem and is not in itself limiting. What makes it limiting is, for instance,

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[16] See also Leah Lakshmi Pierzna- Samarasinha (2018)

urban planning and building designs which lack provisions for ramps making buildings, transportation and services inaccessible. If such provisions where at place, then a mobility aid would be an alternative way of being mobile but would not necessarily be worse. Therefore, the issue does not necessarily lie with the body of the mobility aid user. Rather it is a matter of social change and social justice. Such types of concerns have generated the Social Model of Disability as a response to the Medical Model.

Social arrangements on how the material and non- material environment is shaped are not neutral and do not naturally appear. Rather they are the result of a decision - making process made by groups of people based on their own experiences, needs, bodies and assumptions. Disabled people have been underrepresented in the processes of this decision making and their experiences have not always been included. As Taylor (2017, p.7-21) explains, there is nothing natural about things like traffic lights. Yet they are inaccessible to those with a vision impairment. This can make navigating roads challenging. However, such obstacles can be overcome with other technologies such as using sounds for traffic light signaling. This technology is not less natural than conventional traffic lights. There is no reason for defaulting to any particular option.

Although the social model succeeds better than the medical one in bringing into focus environmental factors, there are still challenges that are left unanswered. A first concern is that this distinction between disability and impairment treats the latter as a natural category undertheorizing how impairments themselves are governed by social circumstances. As I discussed in the first part, external conditions such as access to adequate nutrition, access to medical health, or having a stable and sanitary environment have a direct impact at someone’s physiological development. Such factors can influence the development of one’s abilities or disabilities. However, access to these factors is a matter of distributive policies. From health and safety regulations mandating the use seatbelts and helmets to stipulations about led used in water pipes or paint, social environment not only shapes how disability is understood but also how impairments themselves are caused. As Hall (2016) explains, the social model focuses on how impairments become disabilities but has neglected the social influence on impairments themselves.

Moreover as I described before, models such as the medical face the issue of providing an account that can accommodate traits varying in terms of cause, impact, manifestation, and stability. The social model of disability might focus its attention to environmental factors however physiological traits, namely impairments continue to exist. The fact that the social model distinguishes between impairments and disability does not mean that it can escape that same challenge as it would still need an account of what are the physiological traits which under specific environmental conditions can become a disability (Barnes, 2016). That is to say, one can acknowledge the significance of social conditions in understanding disability by acknowledging, for example, the social barriers that prevent full participation of blind people in all aspects of social life. This view does not, however, respond to the question of whether blindness is an impairment and, if so, what makes it one.

Most importantly though, the social model invites one to ask, if the discrimination and stigmatization of people with disabilities stopped and if appropriate accommodations were made to ensure access to services, buildings and transportations, would disability disappear? This indicates that the social model of disability potentially under theorizes the impact of the actual physiological impairments. Critics of the social model of disability point out that this framework seems to equate disability primarily to oppression which raises a question of whether it can accommodate the notion of non-oppressed or disadvantaged disabled people. Most importantly though, there is also a significant difference between other oppressive norms such as racism or sexism and disability. Being a person of color or being a woman is not inherently limiting. However, having an physiological impairment might still be in itself limiting regardless of any social arrangement (M. Oliver, 2013)

Even if all necessary social accommodations take place, impairments will not cease to exist. A mobility aid user might be made very welcome to participate in all spheres of public and social life with both material and attitudinal changes. This though does not mean that they will stop having an impairment and that they would stop being excluded from certain activities. Some disabled people face chronic pain, have conditions which deteriorate with time, have disabilities that are also linked to illness and need medical support. Their effects will still be experienced regardless of any environmental factors and the social model does not always address this adequately.[17]

In particular, as Berube (2010, p.102-103) points out, it is much easier to imagine social changes accommodating mobility aid users, blind or deaf people than people with cognitive disabilities, particularly more extended ones. The social model of disability has largely been oriented around demands for independency and autonomy which, again, is both understandable and expected given the history of forced institutionalization of disabled people.[18] However, this has allowed the social model to

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[17] The question over erasing disability often emerges in the bioenhancement literature, particularly in relation to cognitive disabilities. Restoring cognitive capacities seems like an obvious starting point for the cognitive bioenhancement project. This would allegedly ameliorate the position of those with cognitive disabilities by allowing them to perform at the same level as anyone else and potentially lead an independent, autonomous life. It would also entail reconsidering the distinction between therapy and enhancement and embracing the later not only in moderate form but also in terms of radical enhancement by abandoning the limitations of typical species functioning (Minerva & Giublini, 2017)

Certain disabled activists such as Hugh Herr or Gregor Wolbring who aim towards the eradication of disability also explain that biomedical enhancement-cognitive and other-could significantly decrease the exclusion of people with disabilities. That is because in relation to biomedically enhanced persons, or even transhumans, everyone is disabled. For transhumanist like Bostrom (2005), typical human capacities found regularly amongst members of the species will pale in comparison to what transhumanists could be. Extending our human capacities beyond species typical norms can give us unprecedented control over ourselves. A similar reasoning can be seen in Savulescu's and Kahane's disability as welfare model which they have argued would precisely be more inclusive because it allows disability to be understood in a way that everyone is on its spectrum. The difference between typical species functioning and disability would become less significant when compared to the abilities that post humans may have (Wasserman 2012b). Not everyone though is convinced. McMahan (2009) for example seems to conclude that biomedical cognitive enhancement would not necessarily be an effective recourse in improving the lives of people with severe cognitive disability as it would entail such a change to their cognitive and psychological properties that there is a risk of lacking continuity in terms of identity and self -understanding. I will return to this point in my following chapter on moral status.

[18] This is something that Pierzna- Samarasinha (2018) puts forward as well. In her investigation of alternative modes of care and community she explains the role of disability rights movement being oriented towards demands for more autonomous living. Although claims for such policies are not themselves wrong, are often exclusive.

neglect that for some cognitively disabled people surrogacy or guardianship might be the best options.

This emphasis on the social character of disability sometimes at the expense of impairments is understandable. Particularly if one takes into consideration how the social model came as response to the overmedicalization of disability as well as to the need for disabled people and disability activists to organize, protest for their rights and demand social changes. The idea that impairments do not simply represent a different embodiment but rather are all inherently worse has been harmful and has been used as a way to devalue the lives disabled people lead and negate their equal moral status, as I will show further below. However, this does not mean that a model of disability should undertheorize the role and impact of impairments especially given the heterogeneity in which they appear. We must rather find tools that can accommodate the existence of disability and impairment whilst asserting that they do not diminish the value of the people who have them.

A third model of disability, aspects of which I have previously discussed, is the welfarist account of disability. Advocated by Kahane and Savulescu (2016; Savulescu & Kahane, 2011) this account views disability and enhancement symmetrically with them representing respectively a condition of disadvantage and advantage (Wasserman & Campbell, 2020). More specifically, Kahane and Savulescu stipulate that “according to the welfarist account of disability, ‘disability’ should refer to any stable physical or psychological property of subject S that leads to a significant reduction of S’s level of wellbeing in circumstances C, excluding the effect that this condition has on wellbeing that is due to prejudice against S by members of S’s society.” (Savulescu & Kahane, 2011, p.45).

She explains how for example the demand for de-institutionalization and independent living which flourished in the USA around 1960-1970 was largely dominated by white male polio survivors. Being disabled and inspired by other movements demanding equality they organized around putting forward single-issue demands. These often left behind disabled people based on what healthcare they have access to or who faced multiple kinds of marginalization (2018, p.34)

Their model of disability places welfare at its centre. Disability is viewed as a harm to the extent it causes a diminishment to a person’s welfare and as such it should be removed. Unlike the medical model, this welfarist account does not define disabilities as a departure from typical species functioning. Rather it upholds that typical species functioning cannot be normative. That is to say, it is a particular environment that makes a trait a disadvantage and by extension a disability. In this sense, the welfarist model shares a similarity with the social model.

The most significant difference between disability as welfare and the social model of disability is that former does not include decreased welfare due to direct prejudice. Kahane and Savulescu (2015, p22-23) explain that disabled people state that prejudice and discrimination negatively impact their wellbeing rather than their impairments. Similarly they explain that when a person’s wellbeing is impacted by racism, it is discrimination and not their physiological traits negatively impact on them. Although they acknowledge the problem of discrimination their proposed model does not focus on that. The disability as welfare model would not see racism even though it diminishes wellbeing as a disability because precisely it does not address situations where harms stem from direct prejudice.

Kahane and Savulescu understand the social model to equate disability to discrimination (2015, p.20-21) and that seems to be problematic for three reasons. Firstly, although they recognize why disability activists have rallied around an understanding of disability as discrimination for political reasons, they find that an account that equates the two might be conceptually obscuring, as they claim “revising the everyday concept to refer to an entirely different normative phenomenon is likely to elicit unnecessary misunderstanding and resistance” (2015, p.23-24). Secondly, they seem to share the above-mentioned concern that the social model undertheorizes the impact of impairments as such, regardless of any additional harm caused by unfavorable social conditions. Unlike the social model, disability as welfare stipulates that even if there were no prejudice against disabled people and even if all social arrangements necessary were made, disability can still decrease welfare.

Thirdly, and more interestingly Savulescu and Kahane claim that although it may be that social conditions render a certain trait a disability this is not necessarily unjust.

They explain that for example if “Gulliver becomes a citizen of Lilliput, justice would require the Lilliputians to make some allowance to make Gulliver’s life go well, even if he radically diverges from the normal. But it would be absurd to claim that justice requires them to ensure that Gulliver’s life would be in no way constrained by his different dimensions. Of course, if they could somehow achieve that at no expense, then they should. But if they could achieve that at immense cost, it seems unjust to invest so much to improve Gulliver’s prospects by greatly reducing those of everyone else.” (2015, p.42). The implication with this stipulation is that in any case of disability as disadvantage which is created by a specific social environment, there is the option of altering the environment or altering the particular individual physiological trait. In cases of discrimination such as racism or other direct prejudice, which they recognise as a moral evil then there is a priority to change the problematic environment. However this does not automatically extend to cases where “the harm is natural” (2015, p.35)[19]

Even if ableism in terms of individual attitudes or behaviours were eliminated, there could still be structural barriers towards inclusion. Disabled people require social rearrangements and accommodations which would make various goods and practices accessible. These could involve material changes such as ramps to buildings and buses, extra parking spaces, restaurant menus in braille, cheaper modified vehicles as well as broader policy changes such as disabled people choosing their caregivers or choosing to remain in their homes. In itself, Savulescu and Kahane explain, the understanding that such changes are necessary to ensure inclusion does not automatically mean that justice demands them. To make such claims, one would need a broader account of distributive justice stipulating what people deserve and on what grounds.

A final aspect of the disability as welfare model is its inclusivity. Unlike a model based on typical species functioning, disability as disadvantage allows for a much greater scope of what can be understood as a disability. Most people if not all, the authors

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[19] I would like to explicitly note that this is a very problematic analogy. It assumes not only that there is a ‘normal’ from which disabled people diverge and it also presumes that disabled people are less entitled to services, access and to participate. Rather accessibility is a matter of benevolence and is limited to the extend that it does not pose an inconvenience.

claim, will experience some sort of disadvantage stemming from our physiological traits. As I have previously mentioned, a mobility aid user might face a disadvantage because many services or physical spaces are inaccessible to her. A person whose natural disposition is to be shy might face a disadvantage in a professional setting that requires social networking or public speaking. Disability as disadvantage can encompass both these traits so the extend that they are a disadvantage and as such impede a person's wellbeing. Disability in this sense could be extended as a category that can potentially include everyone in its spectrum at any point in their lives. In doing so having disability traits would become less stigmatising.

There are a couple of issues in the model of disability as welfare that deserve attention. Firstly, it is not entirely clear why their revised concept of disability as disadvantage will not entail the same conceptual obscurities or resistance that they attribute to the social model's understanding of disability as discrimination. Disability as disadvantage can leave room for interpretations of disability that can sharply depart from the commonly understood usage of the term. Not being able to account for conditions that are usually thought of as disabilities such as blindness, deafness or mobility restrains whilst including traits like timidness, or lack of confidence does not seem up to the task of providing a successful explanatory framework. A shy and timid person might be disadvantaged in a highly competitive and aggressive working environment, in which case these traits would fall under the definition of disability. Another person who is a mobility aid user might live in a social environment that makes all necessary accommodations for her to access services, goods and opportunities. Therefore, as her physical impairments do not disadvantage her, they are not considered disabilities under the disability as welfare framework.

This can also be conceptually obscuring. As Wasserman and Campbell (2020) have explained, Savulescu's and Kahane's revisionary account of disability as disadvantage requires that we reconsider our descriptions of disability to accommodate that, cases typically understood as disabilities might not be classified as such because they do not bring a disadvantage. Wasserman and Campbell explain that this might be too high of a demand. For them, people revising so drastically their descriptive understanding of disability does not seem plausible. Rather than accepting a normative account of disability as disadvantage and reflecting their descriptive accounts of disability accordingly, it is more likely that people would maintain a description of disability and adapt their normative assumptions accordingly.

Secondly, Savulescu and Kahane argue that their broad account of disability can extend solidarity and mediate stigma. This is different to accounts of disability arguing for solidarity on the grounds that everyone could become disabled. Whether form disease, injury, accident or age everyone is vulnerable. Recognizing this shared vulnerability and how it can help us understand our interdependence to each other could function as a basis for solidarity. However, that is not the claim that Savulescu and Kahane put forward. Rather they claim that we are all disabled throughout our lives just in different degrees and ways as we all face disadvantage which is why everyone according to them could benefit from bioenhancement. Wasserman and Campbell (2020) claim that this does not leave a sufficiently strong basis for such a bond to develop.

I agree that such a flexible definition of disability can undermine how disability can function as a basis for solidarity, activism and identity. In particular, I am concerned that a description of disability as disadvantage distinguished from discrimination severs disability as a category from the roots from which it emerged. Combating discrimination whether in policies, social norms, or institutions has been a constitutive part of disability activism and disability justice as well as an object of inquiry in critical disability theory. This is not to say that disabled activist and advocates where always in agreement on which practices are problematic and what is the best way to resolve them. However, it seems as there was enough common ground to be able to organize around particular demands or even a particular identity. It is not clear how a drastic revision of disability that is conceptually detached from disability as a political category, from discrimination and from injustice can offer a similar ground for solidarity.

In particular, my concern is that such an extended and inclusive understanding of disability in order to protect disabled people who put these ideas forward would require a more robust account of what is owed to each person as a matter of justice than what this model seems to offer.[20] What seems to be ambiguous is Savulescu and Kahan's understanding of harm as natural versus as a moral evil. The difference as I explained is significant as it has different normative consequences. A harm that is a moral evil would demand that the wrongdoer changes their behaviour. A harm that is natural does not entail any such stipulation. Disability as disadvantage suggests that 'natural' disadvantages such as Gulliver's size do not necessarily entitle Gulliver to make any claims for social change or support. However, this does not provide an adequate account of where different disabilities would fall.

Savulescu and Kahane stipulate that if, for example, someone attacked me with an axe and cut of my arm then this is demonstrably a case of a moral evil. Most cases though tend to be more ambiguous than that. Taylor makes this point when she describes her own disability. She explains that her condition-arthrogryposis multiple congenital – was the result of military pollution at the town her family was. The very origins of her disability were man made and arguably stemmed from an injustice. The body she has known has been the subject of intervention not only through the pollution that caused her disability but through surgeries during her infancy that increased her range of motion in her legs and arms. She uses this to wonder if she has ever had a natural body (Taylor, 2017, p.119-121) and what would that mean. This recalls a similar criticism that I outlined against the social module of disability, namely how it undertheorizes the social nature of impairments and treats them as a natural category. My point is that disability as disadvantage does not, in itself, offer any clear protection towards disabled people as the distinction between a natural and a moral evil are

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[20] This is a particularly interesting point in which I will come back to at the next chapter where I discuss the significance of being a member of the human species in terms of being a subject of justice. I will discuss how efforts to expand moral consideration across species to include non- human animals need to address the fact that many disabled humans- especially cognitively disabled people would be left in a vulnerable position. If moral consideration were to be extended on the basis of individual capacities to include animals instead of species membership this could harm disabled people who have relied on being human in order to be recognised as moral subjects. Undermining the importance of species membership disregards their lived experiences, history of abuse and minimises protection. Similarly extending solidarity based on such an idea of disability as disadvantage that is all encompassing can have similar issues especially when in this case one might need to deal with conflicting interests.

blurred. Rather it would have to rely on a separate discussion of distributive justice to determine what people are entitled to which again is missing from the discourse.

Moreover, Savulescu explains that “The sizes of many doors, beds, and cars are too small for extremely tall people. It hardly follows that the prevalence of these sizes amounts to a prejudice against such people. Here the statistically normal does matter. It matters not directly, in evaluations of well-being, but in the context of considerations of distributive justice, broadly understood. It is through such considerations that people’s well-being might be reduced because, due to social causes, they deviate from the statistically normal. But, by definition, this reduction would not be *unjust*. Trivially, by being determined by considerations of distributive justice, it would be not just neutral but *just*.” (2015, p41)

The implications of this understanding are problematic. For instance, it is statistically normal that people walk. This seems to imply that the burden of making buildings accessible to mobility aid users should fall primarily on them. The fact that there is no specific moral agent blocking the entrance to disabled people which would be an indication of a moral evil, does not make the evil of them not being able to access the building through stairs natural. This is because stairs did not naturally appear. Rather they were made by specific people with specific bodies who did not always include disabled people or other marginal groups. It is therefore not clear how a model of disability as disadvantage which encompass such a variety of traits that diminish one’s wellbeing but also reinforces the importance of species typical in relation to accessibility can enforce solidarity to those who the disability justice movement aimed at protecting.

Moreover, disabilities linked to impairments will often deviate from species typical functioning. If anything for the medical model, disability was defined precisely as a departure from typical species functioning. The welfare model of disability understands various traits- such as for example excessive timidness- as disabilities because they provide a disadvantage and decrease wellbeing. It is not clear if it would prioritize accommodations of such traits if more people had them, placing them closer to typical species functioning or if the cost of accommodating them was lower than that of accommodating paradigmatic cases of disability. I am not saying that such problems are unique in Savulescu and Kahane's model. There might always be a scarcity of resources or there might be demands for accommodating different disabilities that are incompatible. Nonetheless it seems that the disability as welfare model by extending the notion of disability as a disadvantage might exacerbate this even more at the expense of the most vulnerable.

Disability as welfare is not the only model against which concerns relating to identity and solidarity can be articulated. Similar challenges can be raised against the social model to the extent that it also dissociates disability from the body. This challenge as I have mentioned, raises the question of whether disability would exist as a category without discrimination. It also urges us to ask if one needs to have an actual impairment to be considered disabled.

Being perceived as having a disability regardless of whether one has an impairment can impact one's self-understanding and most importantly how one is treated by others. Barnes (2016) explains that we can see how this distinction would operate by examining discussions of gender as found in Haslanger's (2000) work. Haslanger suggests that being a woman entails being imagined having certain physiological characteristics which signal which social roles are designated for her to occupy and which are hierarchically subordinated to others. These two factors both describe and explain women's continued participation under these subordinating frameworks. Whether one actually has such biological traits is not a decisive factor.

Barnes does not take a stance in terms of how successfully this operates in terms of gender but explains that this analysis does not hold for disability. Firstly, she observes that not all disabilities are visible, and many disabled people are not perceived as such and therefore are not treated as such. Furthermore, due exactly to the stigmatization and marginalization that comes with disability traits, not everyone with disabilities chooses to identify as such. On the other hand, people without an actual impairment could be perceived as having a disability. Aside from the odd case of benefit fraud, an example can be people with factitious disorders or people with body identification disorder also known as "transabled." For Barnes, people identifying as transabled, however strongly, are not actually disabled until they take medical action to acquire a disability trait. This is precisely because disability is – to an extent at least- dependent on impairments. Regardless of any social stigma and of any lack of accommodation, people with disabilities would still have bodies that navigate the world differently. A model of disability should of course address the concerns relating to demands for social justice. What Barnes stresses is the danger of overcorrecting the medicalization of disability to the point that the body disappears. Her proposed model of disability focusing on solidarity, aims to walk the line between social construction and impairment. Although which traits are considered to be a mark of disability is socially influenced, the actual way that these traits shape functioning and a persons' life is embedded in the body.

Barnes (2016, p.44-53) proposes a model of disability oriented around solidarity and belonging. Disability rights movements that organise around protesting and protecting the interests of disabled people create the very category of disability. It is these forms of solidarity that create disability and one is considered to have a disability if they partake in such groups or if they have bodies who can benefit by the claims disability advocates put forward. Whilst for Barnes this can apply retroactively to people temporally and spatially distant there are nonetheless certain ambiguities. As Barnes herself points out, disability rights advocates, people with disability or even philosophers of disability are not always in unison regarding what does and does not count as a disability in a similar way that feminism is not always in unison about what constitutes gender. Rather they seem to employ “cluster concept reasoning” (Barnes, 2016, p.64) stipulating that people have a disability if they fall under one or more categories such as having non typical physiological traits, being stigmatised and marginalised, requiring particular assistance relating to how their body functions. There are still of course ambiguities in terms of how that would work as is to be expected with an account that requires a degree of identification. For example, there are many disabled people who are unable to benefit from particular claims or policies. Or there are people who actively do not want to identify as disabled given the stigma associated to disability. Or whose experience of identifying as disabled is mediated by other parts of their identity such as race or gender. Nonetheless, I think that this understanding of disability moves towards a better direction in terms of acknowledging the physiological impact of disability whilst maintaining the socially constructed dimension. Moreover, what this account does, is that it separates disability from disadvantage. In doing so, it leaves open ended the question of whether disability is inherently bad, complying with what Barnes has identified as an important criterion for any disability model; being unbiased.

2.3 Disability as mere difference

In the previous sections I discussed different models of disability, the medical, the social and the welfare model. I explained how the medical model which has been greatly influential in how bioenhancement is understood within the relevant literature, does not adequately account for the role the social environment has in translating a physiological trait into a disability or an enhancement. Moreover I examined how the welfare model understands enhancement and disability as advantages and disadvantages respectively. As such it relies on specific accounts on which lives are valuable and which capacities are necessary for a desired existence. In this section I will challenge the presumption that disability is inherently bad and that by extension enhancement is inherently good by exploring an understanding of disability as a mere difference.

Models of disability such as the medical model or disability as welfare operate under the presumption that disabilities not only mark a difference between disabled and non-disabled people but also that this difference is a bad one. In other words, as Barnes (2016) explains they presuppose that disability is bad. Such an approach however is methodologically problematic precisely because it operates by already presuming what should be part of its enquiry. She proposes an alternative framework which understands disability as mere- difference. Having a disability under this understanding is a different way of experiencing the world and it means inhabiting a body that exists as a minority. However, is not inherently worse. Unlike previous models, an account of disability as mere difference is value neutral as it understands disability to be neither inherently good nor bad.

Barnes (2016) explicitly states that a mere difference view does not deny that disability can be negative. Some people do not value being disabled and would prefer to be non-disabled. Also, even people that value their disability do not necessarily value all parts of what being disabled entails. Barnes uses the terms local bad and global bad to describe how disability, like most things, can have specific aspects that can be bad without this entailing that it is bad overall.

For instance, I greatly enjoy training as a circus aerialist. I greatly value the new ways in which I am able to move in space, belonging to the aerialist community, being introduced to new apparatus, the feeling of accomplishment after mastering a new sequence, and how the strength and flexibility gained through this practice makes my body feel throughout the day. However, I do not always like the bruises, burns and other injuries, how much it costs, how far I need to walk to get to the training studio and how frustratingly slow sometimes progress can be. Nonetheless, I have decided that as a whole, despite some local bads, being an aerialist is something I enjoy and value and therefore is a global good. People with disabilities do not need to enjoy every single aspect of their disability or enjoy them all the time to value their disabilities overall.

The model of disability as mere difference does not deny that disability entails local bads. Being blind, Barnes explains for example, is accompanied by drawbacks. Even under the best of circumstances people who are blind will not be able to appreciate famous pieces of art, watch a sunset or movies. However, Barnes (2016, p.96) cites Kim Kilpatrick, a blind activist who explains that equally she cannot see her loved ones age, she is not self -conscious about her appearance and she does not judge others by theirs. All of these are things she values as part of being blind.

What seems to be important here is that disabilities in many models, and especially within the bioenhancement literature, are bad because they are understood as a diminishment of wellbeing and opportunity. Other things equal, having disabilities is limiting and people would be better off without them. There are many competing accounts of what makes life worthwhile. However, whether it is values like autonomy and independence or a particular set of capacities following Nussbaum (2007), disabilities are considered a hindrance because they diminish available options or impede flourishing.

This though is not necessarily the case (Barnes, 2016; Beaudry, 2020). Disability might hinder particular ways of experiencing goods deemed necessary for one's wellbeing, but this does not mean that it renders every way of achieving such goods completely unattainable. A blind person might not be able to appreciate a painting. This does not mean that they are not able to appreciate art in general. There is a plethora of other activities pertaining to music, literature, dance through which people with visual impairments can experience aesthetic and artistic value. Alternatively, as Barnes explains freedom is integral for many accounts of wellbeing including for Nussbaum (2007). A wheelchair user might not have access to the same freedom of movement as a non -wheelchair user. Even with extensive adaptation of the social environment there are places and activities to which she will not have access. This does not mean that she will not experience freedom of movement to any degree and it does not mean that she will not experience other forms of freedom such as freedom from certain social expectations and norms. There are multiple ways of achieving certain goods and no one way is necessarily better than others. Nor is there any strong reason to assume that having the most options about how to achieve a certain good is inherently better. The idea that increased options are tantamount to increased wellbeing seems to be very commonly advocated in discussions about disability as well as enhancement as is the case with Savulescu and Kahane and seems to be in the very heart of the bioenhancement project. However, as I have shown in the first section this need not be the case.

This is why the model of disability as mere difference understands disability as a neutral simpliciter which can be either good or bad depending on context. Partially this context relates to the broader account of one’s life plans. Infertility Barnes explains can have a significant impact to those who want to have a biological child. It might have no impact though to anyone who prefers to not have any biological children. Therefore being infertile although seeing as negative by some can also be neutral and for those who do not want biological children and also do not want the risk of an accidental pregnancy or do not have access to contraception it might be a positive simpliciter. Fertility can be a positive trait for those who want it, but infertility should not automatically be assumed as a signal of decreased wellbeing since a life without biological children can be just as fulfilling.

There are two interlocking major objections against the disability as mere difference framework. The first one stems from its incompatibility with the strongly held, popular intuition that disability is bad which underlies the previously mentioned models. This intuition is expressed though distinct ways. Firstly, one can argue that the mere difference model can potentially encompass some disabilities that for example only impact on certain motor capacities, do not involve chronic pain and do not deteriorate over time (Shepherd, 2020; Asch & Wasserman, 2010). The mere- difference model of disability is not as easily accepted in other cases such as Live in Syndrome or Minimally Conscious State as Shepherd (2020) elucidates. People with Locked in Syndrome (LiS) usually have typical cognitive capacities but have complete paralysis. In most cases the only movement possible is eye movement. Minimally Conscious State (MCS) on the other hand results from severe brain injury. People with MCS show very limited cognitive functioning and often minimal responsiveness to external stimuli. Shepherd understands control over one's environment to be a central aspect of wellbeing. Even if for most of us control over our environment is something that can be achieved only to a certain degree, it is safe to assume that people with such syndromes have less than most. An inability to communicate with the outside world effectively as well as an inability to understand and formulate life plans seems to be incompatible with most theories of wellbeing. However acknowledging that there are times and cases when disability is bad for someone is not incompatible to understanding disability as mere difference. The claim that this understanding of disability puts forward is that physiological traits of disability are inherently neither good nor bad. This does not preclude that on certain occasions they will be bad.

The second major objection to disability as mere difference, which is often referred to as the impermissible implications objection, relates to the impermissibility of causing disability. The argument goes as following: If disability is not bad, then intentionally causing or failing to prevent it is permissible. This is an unacceptable consequence. Therefore, disability is bad. (Aas, 2020; McMahan, 2005; Barnes, 2016; Kahane & Savulescu 2016; Stramondo & Campbell 2020; Mosquera, 2020; Harris, 2001; Signer, 2004).

This seems to be a very strongly held objection amongst the relevant literature. Barnes (2016, p.145-146) cites some passages that I think are quite indicative and sum up nicely the issue at hand:

“For example, John Harris (2001) writes:

Many people critical of my position talk as if the disabled are simply differently-abled and not harmed in any way. Deafness is often taken as a test case here. In so far as it is plausible to believe that deafness is simply a different way of experiencing the world, but by no means a harm or disadvantage, then of course the deaf are not suffering…But is it plausible to believe any such thing?…Would the following statement be plausible— would it be anything but a sick joke? ‘I have just accidentally deafened your child, it was quite painless and no harm was done so you needn’t be concerned or upset!’ Or suppose a hospital were to say to a pregnant mother: ‘Unless we give you a drug your fetus will become deaf. Since the drug costs £5 and there is no harm in being deaf we see no reason to fund this treatment.’ (p. 384)

And along similar lines Peter Singer (2004) remarks:

Consider what we would have to give up if we were unequivocally to reject the idea that it is a bad thing for a child to have a serious disability…If serious disability has no tendency to make one’s life worse, there would be no reason to fund research into preventing, or overcoming, disability. That would save governments all over the world significant sums of money. Doctors could forget about advising women who are considering pregnancy to take folic acid to prevent spina bifida and anencephaly, as these conditions would not, on this view, disadvantage their children… Pregnant women could feel entirely free to drink as much as they wished, secure in the knowledge that there was no reason to believe that any of the conditions that the Surgeon General calls ‘defects’ would be likely to make their children worse off…Pharmaceutical manufacturers would not have to test new drugs to see if they produced fetal abnormalities. Doctors could once again prescribe thalidomide as a useful sleeping aid, even for pregnant women. (p. 133)

And here is Guy Kahane (2009)

Now it seems that those who reject [that disabilities such as deafness are a harm] must also reject [that it is morally wrong to turn a hearing child into a Deaf one]. If deafness is not a harm, then either it makes no difference to well-being in comparison with hearing (one needn’t hold that it leads to identical well-being, just well-being on a par), in which case it wouldn’t matter if one becomes deaf, or it (p.146) tends to improve well-being, in which case there is positive reason to turn hearing people deaf. So it seems that those who reject [that deafness is a harm]…must hold that…[p]arents are morally permitted (or even ought to) turn a hearing child deaf. (pp. 211–12)”

The impermissible implication argument stipulates that there is a moral asymmetry between causing and preventing disabilities. As supporters of this argument claim, aside from the assumption that disability is inherently bad this moral asymmetry can be justified through some additional relating concerns.

Firstly, if one makes a choice for example to select an embryo with a disability trait this might prove to be a permanent condition. Whereas the possibility of becoming disabled is always present, that is not the case with treating and preventing disability. Therefore, one might have a moral responsibility to prevent disability in fetuses and then should they wish as adults they could choose to become disable. Causing disability entails an irreversibility that preventing disability does not.

At first glance this sounds like a plausible argument. However, there are no actual legal frameworks that would allow such a transition or there might not be a safe medical process to do so. This seems to be precisely the case with people who described themselves as trans -abled wishing to take medical action to become disabled. Moreover, irreversibility in itself should not be problem. There are many things that are irreversible such as having children or most relevantly biomedical enhancement. Harris or Savulescu as I discussed in the previous chapter advocate for bioenhancement. The impact of genome editing, or embryo selection can also be permanent. So could potentially the impact of drug administration. However, on these occasions the potential permanent effect does not seem to be problematic if anything it is desirable. What makes irreversibility an issue in relation to disability is the underlying assumption that disability is bad (Stramondo & Campbell 2020).

A second reason for moral asymmetry would be that disability raises questions about peoples’ individual motives to become disabled or motivation to cause disability to a third person. Becoming disabled is, as Stramondo and Campbell (2020) phrase it, an atypical wish. As such one might have reason to suspect the motives behind people wanting to become disabled or behind causing disability. Parents and doctors can cause or fail to prevent disabilities out of neglect or malpractice. People can even cause disability out of malicious intent. In addition, people wanting to become disabled themselves might not always be able to understand and express their own best interests. If a friend, starts taking drugs one can argue that they might not be completely capable of identifying and acting on their best interest and therefore might need support and an intervention. Or, as Barnes (2016) explains, someone could be in an abusive relationship and claim that they are happy. However, this would not mean that in good conscience one would take their word for it. This bears a resemblance to the concern over adaptive preferences, namely the idea that one adapts their preferences to existing circumstances and options in order to avoid the frustration of not being able to actualize their desires, which I will address later. However, it is clear that once again, what invites any suspicion towards the individual motives or capacities to make decisions in the case of disability is the presumption that disability is bad. One is suspicious over a friend taking drugs to the extent that one thinks taking drugs is bad. If a friend takes up jogging or knitting, there would be no reason to doubt their decision-making capacity even it was an atypical choice.

A third potential objection would be that failing to prevent disability would increase social cost across the population. Accommodating for the different needs that disabled people require additional resources. One could argue that these resources could be spent differently and that it is each person's responsibility to the social whole to make decisions that would not put extra burden to common resources (Stramondo & Campell, 2020; McMahan, 2009). This is something that has already come up in previous sections and will also appear in next sections. Savulescu and Kahane explained that similarly to how the Lilliputs do not have an obligation to accommodate Gulliver if the cost is deemed too high, justice does not require us to accommodate people who are excluded by departing from typical species functioning unless a particular moral evil is being committed. In the next chapter, I will discuss how Buchannan raises the same point in what humans would be owed in a posthuman society. In any such case though, what I take to be the problem is that this concern can only be meaningfully addressed within a broader examination of distributive justice. When Savulescu, Kahane or McMahan articulate such objections, what they seem to be claiming is that spending such recourses on accommodating disabled people might be unjust in relations to what they take to be a just distribution. They neither explain nor justify the principles which would render such a resource allocation unjust.

Barnes (2016) having advocated for the disability as a mere-difference model is well aware of the impermissible implications objection. She offers two other possible explanations that could justify this moral asymmetry between causing and preventing disability and accommodate this intuitive objection without though relying on assumptions that disability is inherently bad: transitional costs and a principle of non-interference.

Transitional costs refer to the financial, psychological, emotional and other costs that a non -disabled person would have to bear to adapt to a disability. These could involve a variety of different things. Let me take the case of a person becoming blind. This person would have to learn new ways of navigating spaces. She would have to learn how to use different aids or apply for a guide dog. If her profession were based on her capacity to see – for instance if she were a photographer, a bus driver or a painter- she would have to make alternative arrangements. She might have to learn braille. She might not be able to do the same hobbies or at least not in the same way. Her day to day life would be different and presumably it would take time and effort for her to adjust. One can argue that being blind does not entail that one’s life would have less wellbeing and also acknowledge that the transition period could be very taxing.

Non-interference is the commonly held intuition that one cannot simply inflict drastic changes on another person’s life, regardless of what these changes are. Although there are some limits to its scope, as Barnes claims there is still interference that is deemed impermissible. If it were possible for a parent to change the sexual orientation of their baby from gay to straight, for Barnes that would be a case of inappropriate interfering. Not only because it would communicate a homophobic sentiment, but most importantly it would interfere with a definitive trait of their child’s identity**.** Changing a child’s traits from disability to non-disability would similarly communicate an ableist prejudice and also interfere in constitutive parts of their identity. Not all parental interventions are unacceptable though as not all alter a significant part of the child’s identity. This is why for example vaccinating is a permissible intervention but changing a child’s sexuality is not.

An insightful example of the non -intervention principle in terms of wrongfully preventing disability which Barnes discusses is intersex people. It is common practice to perform sex reassignment surgeries to babies born intersex. Usually there is no medical reason for such procedures, which can in fact lead to medical complications. This practice stems from parents wanting to avoid the stigmatization of their child not conforming to typical sex binaries and from being advised by medical personnel that such an intervention is in their child’s best interests. However, as she explains, intersex people do not always grow up to appreciate such interference . Rather many claim that being intersex should be a valued part of their identity and that these practices should be abandoned in favor of demanding social acceptance.

I agree with Barnes that transitional costs and non-interference can be relevant to disability being a mere or bad difference. Nonetheless, I do not think that in themselves they can sufficiently address all concerns against the mere difference model. Transition costs would not apply in all cases. Mosquera (2020, p.161-162) invites us to imagine The Functionality Updating Pill. A Disability Inflictor randomly inflicts disabilities on bystanders on the road. This is a painless process. He also administers a functionality upgrading pill. This pill ensures that they are immediately able to navigate the world with their disability without needing to adapt. It also ensures that people’s tastes and life plans seamlessly adapt as well. The absence of transitional costs is not enough in itself to answer if causing disability is permissible. Alternatively, to this hypothetical scenario one could take the case avoiding or selecting disability traits through embryo selection or failing to prevent disability in babies.

Moreover, the non-interference principle, although it often limits the scope of legitimate interference, is frequently overruled. We are happy to accept interventions even in cases where consent cannot be given. Parents do not ask their children if they would like medical treatment or vaccines or which school they attend. Even amongst adults intervention is often accepted without explicit permission, for instance in terms of medical aid, to the extent that we can agree that such an intervention is reasonable. For Barnes the scope of non- intervention relates to whether a trait is constitutive of one’s identity. Although this can be a useful distinction, I claim that the decisive factor deciding the scope of the non- intervention principle is how desirable or undesirable the potential outcome of the intervention might be and how it is weighted against other goods.

Moreover the non -intervention principle signals a preference to what Mosquera (2020) refers to a “natural path bias”, similar to a status quo bias. As she explains, this idea seems counter intuitive. I agree with Mosquera that there seems to be no inherent reason to prefer a particular set of traits simply because they would unfold naturally especially when they could be harmful compared to alternatives. It is also not always clear which traits are constitutive of one’s identity. Even if we accept this Barnes understanding of non-intervention, her argument assumes that disability is a constitutive feature of someone’s identity. In cases of interventions to embryos or babies, however they do not have an already established identity around their disability that would be altered. Even in cases of adults, the extent to which they consider their disability an integral part of their identity varies and can potentially depend on how their disabilities mediate their lives, if they affect only certain aspects or all, how they interplay with other parts of their identity such as gender or race or any other factor (Mosquera, 2020).

That being said, it is important to recognize that part of why people disassociate themselves form their disabilities relates to precisely the stigma that disability has (Barnes, 2016). Disability is commonly depicted as an obstacle that needs to be overcome, an inherently negative trait or a cause for pity. As disabled people do not see themselves in such terms, they understandably might not want to identify as disabled given the negative connotations. It was not long ago that gay people did not embrace their sexuality as a significant part of their identity. Being gay was seen as an illness or a sign of moral depravity. Gay people who of course were neither ill nor morally depraved were understandably not keen on identifying as such.

So far, I have described disability as mere difference, disability as bad difference and the impermissible implications objections against the disability as a mere difference framework. The impermissible implications objections -or, in other words, the permissibility of causing or failing to prevent disability- raises interesting questions and at first glance can be convincing (Sepherd, 2020; Kahane & Savulescu, 2016; Mosquera, 2020). Although Barnes offered two arguments that could accommodate the impermissible implications objection without relying to the idea that disability is inherently bad, namely the transitional costs and non-interference principle, she also suggests that a person inclined to support the mere difference view but hesitant to commit to the above, could turn to the potential risk of disability. Given the current material and social environment, it would be plausible to argue that having disabilities entails a greater risk to one's wellbeing than not having disabilities.

Overall, I would argue that although illuminating and helpful, these alternatives might not be widely enough applicable to put the impermissible implications argument to rest. Barnes ultimately addresses the impermissible implications objection by accepting the often-counterintuitive implication of the mere- difference view that causing and preventing disabilities are in fact morally symmetrical.

One thing I take to be unsatisfactory with the impermissible implications argument is its circularity. As I have previously explained, the impermissible implications argument stipulates that: if disability is a mere difference, then causing disability should be as permittable as preventing it. Causing disability is impermissible, therefore disability is bad. However, the idea that causing disability is impermissible is only intelligible if one assumes that disability is bad. The problem therefore is twofold. Firstly, the main principle that disability is inherently bad, is contested. Secondly, the impermissibility argument only makes sense if we accept the starting premise of disability being bad**.**

A second issue I have with the impermissible implications argument is its scope. By being based on an assertion that disability is inherently bad and therefore causing disability is inherently bad, the impermissible implications argument sets the basis for normative claims that can cover a vast area of cases. As per the prior examples that we saw, scholars such as Harris, Singer and Kahane explain that a doctor not performing a 5 dollar procedure to restore hearing to a baby, a pregnant women abusing alcohol or doctors prescribing thalidomide for morning sickness are but a few of the cases that indicate the impermissibility of causing disability. Additional examples could also include deaf parents selecting deaf fetuses, transabled people wanting to amputate their limbs or causing disabilities with the purpose of enhancing someone's lived experiences such as the case of Asley X which I will discuss in further detail later on.

These cases though are vastly different from each other and relate to a plethora of other concerns such as parental choices, patient autonomy or medical negligence. The Impermissible Implications Argument puts them all under the same umbrella by proclaiming that what renders them problematic is that disability is bad. As such it obscures the potentially different normative responses that each case elicits.

I think this becomes particularly clear if one considers the example Singer makes regarding pregnant women and substance abuse. This is something that McMahan has also put forward when discussing the permissibility of abortion. Form McMahan the impermissible implications argument, or the Impairment argument as he refers to it, demonstrates that if abortion is to be justified this has to be in terms of the fetus having a lower moral status based on lower cognitive capacities and a lack of future interests.

McMahan invites us to “Imagine a case in which a pregnant woman has an interest that is frustrated by the fetus’s presence in her body and that is sufficiently important that, according to Thomson’s argument, she would be justified in having an abortion to satisfy the interest. Yet suppose she could also satisfy the interest in a way that would merely injure the fetus, causing it to suffer moderate pain intermittently throughout its life, but allowing it to have a life that, despite the pain, would be well worth living. In these circumstances, in which the woman’s interest could be satisfied either by having an abortion or by doing what would injure her fetus, and in which it is better for the fetus to be injured than killed, she ought to do what will injure the fetus rather than kill it. In injuring it, she would not, according to Thomson’s argument, be wronging it. Since she has no duty to allow the fetus to remain in her body, the fetus may continue to live only on her sufferance. An injury may simply be the cost it must bear for the sake of the benefit of using her body for life support. This is unacceptable” (McMahan, 2010, p349).

This line of argumentation which McMahan uses, and Singer refers to, has often been used against pregnant women who are suspected of drugs or alcohol abuse. As such, this is a philosophical discourse that can have some deeply problematic political and legal implications against pregnant women. In 2004, Theresa Lee Hernandez was charged with first degree murder after having a stillborn as she had tested positive for methamphetamine (Flavin, 2009, p95). From 2016 to 2020 and the Alabama's chemical endangerment status allowed 479 pregnant women to be arrested for allegedly endangering their fetuses through drug use. Another case was that of Alicia Beltran who was arrested in 2013 during her pregnancy even though she was using neither drugs nor alcohol. Rather she had overcome an addiction on prescription painkillers and as she was no longer experiencing cravings, she did not want to use Suboxone, prescribed to help opioid addicts as she was concerned about potential side effects to her pregnancy. After expressing her hesitation to take Suboxone she was visited by a social worker and the police. Even though both she and her fetus were healthy, she was held two months against her will in a women's drug treatment center in Wisconsin. In 2014, Tennessee enacted Bill 1391 enabling the prosecution of pregnant women if their baby was born facing health issues associated to drug use. Such fetal protection laws indicate a legal shift from frameworks that recognized a fetus as inseparable from the pregnant person to frameworks that bestow upon it individual protections. (Cosgrove & Vaswani, 2020, p46)

My point here is that the claim that causing disability is bad because all disability is inherently bad cannot articulate the differences between the above cases nor can it provide a persuasive account of the different normative approach medical malpractice, substance abuse or body self-modifications might require.

Not only that but it is important to understand the claims that the impermissibility argument makes on cases such as deaf couples preferring to have deaf babies. Stating that causing disability is inherently bad and that disability is inherently bad implies that deaf parents in such cases are wrong about what life with disability entails, about how disability has shaped their lives and what is in their children's best interests.

Is this circularity and problematic scope of the impermissible implications argument reason enough to dismiss it? Kahane and Savulescu (2016) as well as Mosquera (2020) do not seem to think so. The intuition that disability is bad is so deeply ingrained and so widely held that basing one's argument on it is not begging the question. Rather they argue it is ground of evidence. I disagree with this. I understand that it might be impossible or even undesirable to avoid all presuppositions of such kind when considering ethical matters. The question is whether we have grounds for doubting our intuitions on this particular occasion. I agree with Barnes that we have. Firstly because of the long history of discrimination against people with disabilities. Intuitions are not born in vacuum. Rather in this case they originate from mutually affirming narratives that disabled people's lives are less valuable and can have deleterious political and legal implications. Secondly, our intuitions alone do not give any self-evident reason for why they should be given epistemic priority over the accounts of actual disabled people regarding their own welfare. This leads me to the next part of this chapter where I will consider how we can now if disability is bad.

2.4 How can we know if disability is bad for someone?

Arguably the most obvious way to answer this question would be to ask disabled people. Disabled people are not necessarily unable or unwilling to communicate a self -assessment of their own well- being. In fact, disability pride and disability activism could be understood precisely as such an attempt. However, non- disabled people whether in academia, in policy making or any other social environment often do not seem convinced. As I showed in the previous section, the belief that disability is inherently bad, or at least worse than non-disability is so deeply ingrained that often it is not even questioned. This mirrors precisely the assumption that I examined in the previous chapter that enhancement is inherently good. Both stipulate that wellbeing is directly related and influenced by individual capacities enabling us to exercise control over ourselves and our environment. Disability and enhancement, as bioenhancement advocates understand them, therefore occupy different ends of the same continuum. A lot of the literature on bioenhancement and its potential positive impact on one's wellbeing is speculative. However, there are accounts of how disabilities shape lived experiences that are largely disregarded by bioenhancement advocates.

Testimonies by disabled people about their own experiences are met with skepticism and are often discarded (Dohmen, 2016; Marsh, 2020; Goering, 2008) One reason behind dismissing accounts by disabled people is the assumption that they do not know what they are missing. Disabled people cannot appreciate precisely how their physiological traits limit them because they have no other point of reference. A blind person has no first -hand experience of what it is like to navigate the world in the same way as others who are not visually impaired. A deaf person does not know what she is missing by not being able to experience music or hear the voices of her loved ones. A wheelchair user does not know the intrinsic pleasures of salsa dancing or hiking and therefore cannot appreciate if their lives would overall be better if they had such capacities. Their testimonies that their lives are not diminished by not having the opportunities to have these experiences cannot be taken at face value.

There are reasons why I find this line of argument is unconvincing. Firstly, it does not necessarily capture the experience of disability as it is not always a static category. Not all disabilities are congenital. Many people become disabled in later stages in their lives for a plethora of reasons including injuries or illness. This means that they have firsthand experience of life without a disability. A mobility aid user for example might know precisely what it is to navigate the world as a non-disabled person. Moreover, not all disabilities are constant, fixed or permanent. Disabled people might experience changes on how disabilities affect them as they fluctuate, and the frequency or severity of symptoms can change as, for example, is often the case with MS or mental health conditions. Arguments denying that disabled people are in a position where they can assess the benefits of non-disability do not seem to accurately describe the fluidity that often accompanies disability.

Secondly, this is not a standard to which we would hold others. To use a similar example that Barnes (2016) and Marsh (2020) do, if a straight person is in a heterosexual relationship and declare that they are happy with their lives, that is not questioned. We do not ask them if they have been in a queer relationship and if not, tell them that cannot possibly know for certain that a heterosexual relationship is better for them since they have not tried any other kind. We do not insist that they merely do not know what they are missing, that the benefits of being in a same sex partnership are certainly greater and if they only had the opportunity to see for themselves, they would naturally come to this conclusion. Rather we accept their word for it, as is broadly the case whenever someone makes assertions about their own experiences.

Thirdly, as Scully (2020) explains if anything disabled people might have an epistemic advantage. Groups who experience marginalization like people with disabilities often develop epistemic tools that allow them a more extensive knowledge which stems precisely from the power discrepancy that enables their marginalization. Scully gives the example of servants in their master's house. Servants often accumulate an intimate kind of knowledge about the lives of the masters because they depend on them. The servants need to perform their jobs well and are motivated to obtain different kinds of knowledge that would allow them to do so. The masters on the other hand have no equivalent need or motivation. Non-disabled people might have no need to know how life with a disability is. Disabled people though need to know what life without disability is because they have to navigate a world that is built by and for non-disabled bodies. Disabled people have knowledge of what it is like to navigate the world as a non-disabled person because they will have had to make accommodations for their own accessibility. They will need to know what public transport is accessible, if a chosen restaurant has a ramp or wide enough doors or if their hotel will have fragrance free soap. This kind of knowledge is often something that nondisabled people do not have access to in order to appreciate exactly the particularities and needs of disabled people.

Finally, these concerns over the epistemic validity of such testimonies can be directly extended to accounts of non- disability. If we dismiss the accounts of people with disability about their own wellbeing on the grounds that they do not have a comparative experience of being non -disabled, then we should also dismiss the account of non -disabled people as they lack the respective experience of being disabled. Yet this is not the case. Non -disabled people are not questioned about their perceived wellbeing. When they claim that they are content with themselves and their lives their word is accepted. Their authority over their own wellbeing is accepted even if they explicitly acknowledge limits or drawbacks associate with their bodies and their lives**.** For most of us, our bodies limit the range and scope of activities that are easily available to us. Although I have trained for years, I am still unable to do the splits. Not everyone has a body type that would advance a career in their preferred sports and not everyone can become a professional singer. These limitations are not presumed though to indicate a decreased wellbeing. Moreover, if I claim that even though my body has certain limitations, I am overall content with my life, my testimony is not challenged.

When I worked in retail I often had to work long shifts on my feet. This often resulted to bad pain in my lower back and legs. If I was a wheelchair user, I might not have had such problems. Yet when I say that regardless of any drawbacks stemming from my body and social conditions, I am happy with the body I have and would not prefer to be a wheelchair user, my word is taken for granted. This is the basis of the bioenhancement enterprise. The assumption that having extended capacities would be obviously good and as such desirable reflects the idea that lives with decreased capacities are inherently worse. The self-evident desirability of enhancement is indicated by the assumption that all disabled people would enthusiastically endorse a pill that would make their disability disappear or cure them of it. This persists even when they explicitly confirm that they are happy with their lives. Skepticism about the epistemological limitations of our imagination can be valid but there is no reason to restrict it exclusively to disabled people (Marsh, 2020)

A second argument against positive testimonies by disabled people about their wellbeing has to do with defining what exactly is being valued. This criticism -that Barnes (2016) largely attributes to Harman (2009)- claims that disabled people might value certain aspects and experiences that are associated to disability but not disability itself in similar ways that people end up valuing experiences brought by illness or other tragedies. I experienced a car crash when I was younger. This made me more appreciative of my health. It also brought me closer to my friends and family who supported me throughout my recovery, and it helped me develop patience and resilience. These might be experiences and traits that I now value. However, I do not value the experience of the actual car crash. If I had the option, I would have preferred to not have the experience altogether even if that means also losing the positive traits I gained. An even better case would be to obtain these benefits but magically erase the experience of the car crash.

What this indicates for Harman (2009) is a confusion about what is being valued when disabled people claim they value their disability as a constitutive part of themselves. Disability has shaped who they are, and it is reasonable for them to value their own existence and even to prefer having their disability to not having it. It is also possible for everyone to acknowledge and value the unique experiences that disabled people have to offer. This does not mean though that what is valuable is the simpliciter of disability. The significance of this distinction between valuing disability and valuing experiences associated with disability, is that it allows for different normative conclusions regarding causing and preventing disability. Valuing people with disability and the experiences they offer whilst distinguishing it from valuing disability means that one can have reasons to remove or prevent disability to others.

Harman takes an example of a couple whose child has a hearing impairment and who are contemplating surgery to restore her ability to hear. She explains that if the couple chose not to do the surgery it will still be very reasonable that they will love and appreciate their child for who they are and for how their deafness has shaped them. They will not wish to have had a different child or for their child not to have been deaf as this would entail them being a completely different person. Although that is perfectly valid, she explains that arguments like this, which she refers to as “I will be glad I did it”, cannot always provide good grounds for action. This is mainly because, for Harman, although this preference is reasonable later-once the child is grown up- it is not reasonable to have this preference earlier. She explains that “Sometimes it is (or will be) reasonable to prefer an outcome even though the alternative would have been better (in all the ways one should care about). It is reasonable of parents to prefer that their adult deaf child have come to be who she is, even though it would have been better (in all the ways they should care about) if their child had been cured of deafness. A teenager who has chosen to conceive will later be reasonable in preferring that her child exists, even though it would be better (in all the ways she should care about at the time she chooses) if she waits to conceive later.” (2009, p.188.) Harman therefore concludes that it is very reasonable for disabled people to value their lives and be valued by others. She also notes that it is a failure to acknowledge these insights that leads to a conceptual confusion in which arguments to prevent disability are interpreted as devaluing existing disabled people. Ultimately, she claims parents should prevent their baby from being deaf, even if they would have unconditionally loved and appreciate a deaf child for who they would be, because being deaf is worse than not being deaf.

Arguably, one could extend her argument to bioenhancement. If I have the choice between choosing to have an enhanced or a typical child, and I opt for the typical child in the future it is reasonable that I prefer my existing child even though she is merely typical. I will be glad that my child is who she is, and I would not want to have had a different child. However, although it would be reasonable for me to have that preference in the future, it is not reasonable to have it now. Similarly to if I had to choose between a deaf and a non-deaf fetus, it is reasonable for me to select an enhanced child now because, if we extend the argument to encompass enhancement, selecting an enhanced child would be better in all the ways one should care about.

Overall I think her criticism about the use of “I will be glad I did it” arguments is illustrative, especially as she points out the difference between arguing against something on the basis that it is worse and on the basis that it is transformative (2019, p.192). However, what I find problematic is the presumption that deafness or disability more generally is bad aside of transformative of one’s identity. This is something that Harman only briefly addresses when she explains that being deaf is limiting and despite any potential benefits, such as belonging to the deaf community, overall worse. However, similarly to what I have been arguing throughout this chapter and to what Barnes has put forward, this presumption is precisely what is up for debate and is in need of grounding before it can persuasively serve as a basis for any such arguments.

Moreover, for Barnes (2016) this account does not accommodate adequately what disabled people seem to claim through expressions such as disability pride. Disability pride revolves precisely around the idea of valuing disability as such, not merely any positive experiences and traits that stem from it. This is, why unlike disability, there is no cancer pride, or car crashes pride. Rather there are support groups or survival groups.

The third and probably most significant argument against the credibility of testimonies made by disabled people is that they reflect adaptive preferences. Disabled people give accounts in which they appreciate or value their disabilities as well as positively describe their own subjective wellbeing. The adaptive preferences objection claims that they should be dismissed because they reflect what is merely a coping mechanism against having one’s preferences constantly frustrated by limited options.

There are different accounts of adaptive preferences. Elster (2016) explains adaptive preferences by referring to the fable of the fox and the grapes. The fable describes a fox looking at some grapes hanging from tree branches. The grapes look sweet and tempting but the branches are very high. The fox wants the grapes and attempts to jump and reach them. After failing a couple of attempts, the fox decides that she doesn't really care for the grapes after all because they are sour.

The problem for Elster is that the fox's decision is non-autonomous. It is dictated by a limitation of the available options. The fox claims that she no longer cares for grapes. Presumably though the fox continues to enjoy sweet fruit, and the grapes are still sweet. What has happened is that the fox has realized she cannot obtain the grapes. As a way to deal with her desires being denied and wanting to avoid frustration, she convinces herself that it is her preferences which have changed. This is not true though. If the fruit were accessible and she had the option, she would prefer them (Barnes, 2016)

Presumably, though, even if this were the case for the fox, not every instance in which someone changes their preferences indicates false preferences. If anything, there are numerous occasions in which changing our mind and adapting our preference based on restrictions or availability is both rational and desirable, or at least not suspicious, even if it is non-autonomous. For instance, I started training in gymnastics as an adult. My body cannot perform in comparable ways to others who started training as young children, however much I would like it to. Even though I continue to admire the impressive acrobatics, I have adapted my training program to better suit my capacities and I have learned to appreciate the beauty of less strenuous sequences. If I did not, not only would I constantly be frustrated by this rather unflattering comparison, but I would also potentially risk injury. However, my adaptive preferences- even if non-autonomous- are perceived as rational and I value them as they enable me to pursue an activity that gives me pleasure. Our bodies as well as our social environment often limit our choices and make us re-evaluate our life plans according to options available to us. Often such reassessments even if non-autonomous, are considered reasonable and if anything, are frequently encouraged.

Bovens (1992) introduced a different specification for adaptive preferences narrowing Elster's autonomy-based account (Barnes, 2016). In order to better accommodate commonly held intuitions about which adaptive preferences are problematic, he stipulated that preferences need to be rational. For example, I used to consume a lot of eggs and dairy. When I decided to go vegan I slowly adapted my preferences and tastes accordingly. Even though I used to enjoy cow's milk in my coffee, I now find the idea rather off-putting. The difference between me adapting my preferences in relation to dairy and the fox adapting her preferences in relation to grapes is that unlike the fox, my new preferences result from rational reflection and are not merely a response to external constrains. Rather they reflect me re-evaluating the broader framework within which I understand my relationship to food and other species. This means that my new preferences are compatible with my other beliefs and actions. The fox did not undergo a similar process. Presumably, if she could suddenly reach the grapes, she would still eat them. Her adaptive preference indicates therefore a procedural flaw (Begon, 2020) as she does not recognize the real reason behind her changed preferences. For the fox's preferences to be rational they would need to be consistent with her other beliefs, preferences and actions. If the fox, for instance, decided that she should stop eating as much sugar because it is bad for her health, then her adaptive preference would indicate reflective autonomous character building (Begon, 2020).

Is however, the demand that preferences ought to stem from rational examination a superior criterion? My mother used to spend numerous hours throughout my childhood reading fiction to me as she also enjoys fiction. My father is more interested in computers and science. For most of my childhood my mother was my primary caregiver whilst my father worked outside the house. Growing up I became myself vey partial to reading fiction whilst I never developed a respective interest in computers. My current love for reading fiction was neither completely reflective nor completely autonomous. I was directly influenced and potentially limited by my parents' interests and by environmental factors over which I had no control, or for certain parts, awareness. This though in itself is not enough to make my preferences problematic. Although I would say that being reflective over our preferences can be important and useful, it is not the only or most important criterion to determine their legitimacy. Most people carry on with such preferences which are considered legitimate without feeling obliged to reflect over or question them.

Moreover, as Nussbaum (2007) and Begon (2020) suggest, reflection and autonomous thinking seem to be a standard that we do not apply equally to all cases.

Women who do not want children are often asked to reflect and defend their choices in a way women who have children are never asked to. Before turning to a vegan diet no one had ever questioned any of my food choices even though they were not the result of any kind of reflection nor were they necessarily coherent with any other preferences or values I held. My childhood friend decided to quit law school to become a pole dancer. No one had questioned her original decision to enter law school even though she made this decision without ever having had a work placement in a law firm or any kind of experience in the demands and prospects of this profession. Nor was working for someone else consistent with her broader views about how she envisioned her professional development. Yet her decision to quit law to pursue a career as a pole dance performer and instructor in her own studio was met with intense suspicion. This is even though she made this decision after two years of training in a pole dancing studio gaining specific knowledge of the demands and benefits of this profession and even if being self- employed had always been her explicit preference.

Another part of preferences being rational and the result of reflection as Boven argued, is for them to be coherent with a person's broader belief system, values and actions. However, this does not always serve as a reliable criterion for adaptive preferences. For example, Nussbaum (2001; 2012) takes the case of women living in deeply patriarchal societies. Under such conditions, women will often experience a limitation in their options. This can be in material and non -material terms. There may be institutions and practices from which they are formally excluded, or they may be discouraged and prevented from reflecting and meaningfully considering a diverse set of options. Such limitations could, for example, manifest themselves, in a woman realizing that her career choices were deeply impacted by comments and views expressed by sexist science teachers as Begon (2020) who provides a similar example, explains. These examples show how preferences for following traditionally gendered professions or even developing submissive tendencies can be contrived.

However, these preferences are not necessarily incoherent in respect to their other preferences and beliefs. It is very plausible that for a woman who has internalized patriarchic narratives about gender roles, her choice to be a stay-at-home mother for example might be perfectly consistent with her broader views about gender roles. It also might not be any more constrained than my decision to go to university. The difference is that gender stereotypes are considered bad whereas university attendance is not. For Nussbaum (2012, p.111-166), this is the constitutive element of adaptive preferences; they need to be both contrived and also suboptimal.

Nussbaum (2007) makes this framework of adaptive preferences intelligible through her specific understanding of what constitutes suboptimal choices. She has advocated a capabilities approach of justice within which humans flourish by actualizing certain capacities that characterize the species. She proposes a list which includes capacities such as bodily autonomy, freedom, play, control over one's environment. The purpose of the state is to ensure that everyone has the opportunity to actualize these capacities and therefore achieve these goods which, for Nussbaum, are necessary for any conception of a good life (Nussbaum, 2011, p.33-34)

As Barnes explains, Nussbaum develops this framework of adaptive preferences to offer a potential explanation as to why someone would reject her proposed capabilities approach. Not everyone can access or have the opportunity to actualize these capacities. To avoid the significant emotional and psychological harm from them not being satisfied, one adapts their preferences towards the values and goods available. If someone though is thought to have adaptive preferences, this can serve as a basis to dismiss their preference as false.

Barnes (2016, p.129) rightly explains that an account of adaptive preferences oriented around autonomy and internal consistency would not exclude specific testimonials of disabled people any more than it would exclude anyone else's account. The issue with people claiming to value their disability is not that their preference is incompatible with their other expressed beliefs or that it might not reflect autonomous decision-making. Rather it is precisely what Nussbaum suggests. Their testimonies over their subjective wellbeing are dismissed as expressing adaptive preferences because their disabilities are considered a suboptimal choice.

This brings us back to the question of why disabilities are considered a suboptimal choice. The fact that disabled bodies limit a person's options is in itself an insufficient explanation. Much to Bostrom's (2008) and other transhumanists' dismay, all bodies have limits and adapting to what our bodies can and cannot do is neither new nor exclusive to disabled people. For example, gay people face bodily limitations due to being gay. Not only do they face prejudice and discrimination, but a gay couple for instance cannot have a biological child without external resources. Most of us though do not - any longer- doubt gay people's testimony when they explain that they value being gay (Barnes, 2016).

These potential limitations to, or objections against, the concept of adaptive preferences do not mean of course that it should be abandoned altogether. If anything, it is the fact that adaptive preferences can be very useful in identifying injustice which makes this a particularly difficult issue to address. For example, in "The Idea of Justice" Sen (1993) describes a discrepancy amongst the self -perception of morbidity and documented morbidity rates in some Indian states. In particular he explains how the state of Kerala shows morbidity rates which are particularly low compared to other Indian states and approaches rates typical in Europe. However, the self -perception of morbidity rates amongst its residents is disproportionately high. On the other hand, states such as Uttar Pradesh or Bihar have a particularly low life expectancy whilst their residents report very low morbidity rates (1993, p.169-170). If as Sen explains there is no inherent reason to doubt the testimonies, or the health sector data then there needs to be another explanation for this inconsistency. He suggests that this gap can be understood through the equivalent education discrepancy which contributes to the creation of adaptive preferences. Kerala has considerably higher literacy and health care provision. The possibility and danger of illness is much wider discussed and acknowledged. On the contrary Uttar Pradesh and Bihar have a low literacy rate and the available medical services are less extensive. Risks or prevention methods for illnesses are not as widely discussed.

My point therefore is not to argue against using adaptive preferences as one possible way to interpret positive testimonies of disability. Rather it is to question what precisely would make this account persuasive and what are its limits. For example, in the above-mentioned case of self- perceived health assessments, what makes these testimonies suspicious in the first place is that there are contradicting empirical data, namely documented deaths which we consider to be undisputable in a way that self-assessments are not. If, however, we would turn to the case of disability, what seems to give us ground to doubt them in the first place must be the intuition that disability is bad. The validity of such presuppositions is, as I have been arguing, still contestable particularly given the ableist prejudice that has historically shaped our understanding of disability.

One way of challenging the presumption running through the concern of adaptive preferences that disabilities are inherently bad, is to take positive testimonies of people with disability into consideration. By this suggestion, I do not mean that we should disregard negative testimonies of disability. Disability as mere difference does not assert that disability is inherently positive: it is compatible with acknowledging that many disabled people might not value their disabilities and would prefer to not have them. Disregarding their accounts would also be epistemically problematic. The reason why I focus on the exclusion of positive testimonies is because negative accounts of disability to the extent that they confirm dominant understandings of disability do not seem to be doubted in similar ways.

When Harris (2001) and Kahane (2009) argue that it is impermissible to cause or allow disability, as I previously discussed, they refer to the case of deafness to explain that it would be impermissible for parents to select deaf fetuses or for doctors to cause deafness. The undesirability of deafness is taken as self-evident as the desirability of enhancement seems to be. The authors do not justify what makes deafness undesirable and why because of how disability is understood as inherently negative. On the contrary positive accounts of disability are questioned for example as Harman (2009) does when she argues that positive testimonies on disability mistakenly attributed to disability as it is in fact other traits that are valuable.

In other words, when disabled people describe their disability in negative terms their accounts are not doubted. What is required therefore is an account of adaptive preferences which is potentially more sensitive to the influence of discrimination and a history of marginalization and devaluation of disability.

2.5 Epistemic injustice

One particular problem with adaptive preferences is that they seem to create a vicious cycle of epistemic injustice. Reports given by disabled people on their own wellbeing are often excluded from consideration on the basis of indicating an adaptive preference because it is presumed that having a disability is bad. This presumption that having a disability is bad is further proliferated precisely through excluding positive testimonies of disabled people on the grounds that they show adaptive preferences.

This exclusion of testimonies disabled people give, can be a type of epistemic injustice, namely testimonial injustice (Barnes, 2016; Marsh 2020). Testimonial injustice occurs when a person's capacity as a knower is put into question based on some aspect of their identity. This is enabled, as Fricker (2007), explains by the exertion of social power and in particular identity power. Social power for Fricker can be actively or passively exercised by an agent or can be structural -meaning independent of any specific agent- and relates to the "socially situated capacity to control other's actions" (Fricker, 2007, p.13). Social power entails invoking practical social coordination. Many interactions are rendered possible and meaningful because precisely they are based on recognizing a series of social positions and relations. For example, Fricker explains, a tutor marking essays exercises power over her students- without this necessarily undermining the students' interests. This is because of factors such as her being recognized as having the authority to do so and the broader understanding that grades will have an impact on a student's degree and potentially on their professional life, to a certain extent.

However, other types of social power rely on imaginative social coordination. This means that they rely on agents having a shared understanding of what having a particular social identity means. To illustrate, Fricker refers to "The Talented Mr Ripley." In the movie Marge's fiancé Dickie is murdered. She suspects that the murderer is Tom Ripley, a close friend of hers and Dickie's. She expresses her concerns to Dickie's father who holds Tom Ripley in high esteem. Marge as Dickie's fiancé and as the person who last saw him alive should have been a reliable source of knowledge and information about anything relating to Dickie's behaviour that could be a clue for his disappearance. Yet when she voices her suspicions about Tom Ripley she is promptly dismissed by her almost father in law because “there's female intuition, and then there are facts.” (Fricker, 2007, p.9).

Testimonial injustice entails the knower being perceived with undeservingly more or less credibility. Marge suffers from testimonial injustice that was enabled by the imaginative social cooperation that reflected the shared social understanding that women were incapable of rational thinking and that their judgement was clouded by an emotional response to situations which made them unreliable witnesses. Her testimony was disregarded due to her identity as a woman and the stereotype based dominant social understanding of what that meant.

This may be a fictional example from the 1950’s that Fricker gives. However there is a no shortage of real-life experiences that are governed by a similar exercise of identity power. Kamilah Brock is a black woman who in 2014 was placed in an institution against her will in New York for eight days (Dohmen, 2020). The incident happened when police officers questioned her about her BMW. Kamilah explained that she owned the vehicle in question, that she is a banker and even that Obama’s official Twitter account follows hers. She was, however, escorted to the hospital where she was involuntarily medicated and forced to admit that her career was a fabrication. Setting aside everything else, this is a case of testimonial injustice. This incident took place through practical social cooperation that recognizes police authority, stipulates theft as punishable and governs the protocols of action on such occasions[21]. However, it also indicated an exercise of identity power. Kamilah’s identity as a black woman and the shared social understanding -in this case based on unreliable stereotypes- of what that means, namely in relation to black women being financially wealthy operated throughout this incidence. Her testimony about her own financial and social status was deemed unreliable. This is not only indicated by her been forced to admit that her

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[21] Such incidents are not isolated phenomena. There is a long history of people of colour, women, LGBTQ people having their capacity as knowers being undermined with direct and tangible implications (E.Hill Jr, 2020). Dohmen (2020) indicatively mentions how since 1970 African Americans are much more likely to be diagnosed with psychotic disorders such as schizophrenia and less likely to be diagnosed with affective disorders.

account was fabricated. Rather it also became apparent by the epistemic arrogance that police officers showed by failing to do a simple background check at the beginning which could have verified Kamilah's claims.[22]

Barnes (2016), referring to Fricker's work claims that disabled people are subjugated to such types of epistemic injustice. In this case, disabled people experience testimonial injustice precisely because they are doubted in their capacity as knowers (Fricker, 2007) and because their testimonies over their own wellbeing are met with a suspicion that is not applied to other groups respectively. For many disabled people it is a common experience to have others operate under presumptions about how life with a disability is (Cureton, 2020). From assumptions about when and how they might require assistance, assumptions about their preferences and intrusive questions about their bodies to patronizing amazement that someone with a disability might enjoy or value her life, multiple social interactions and social relations are underpinned by this dynamic. Disabled people are often portrayed as subjects of pity and charity. For around 45 years, for instance, The Jerry Lewis MDA Labor Day Telethon would run a fundraiser for Americans with Muscular Dystrophy. In doing so, it perpetuated the stereotype that those with this disability are an object of pity and a locus for non-disabled people's benevolence, as did the charity model of disability (Barnes, 2016; Taylor, 2017).

Harriet McBryde Jonson, a lawyer and disability rights activists relates her own experiences as a disabled woman herself. She explains that other people have perceived notions about her own wellbeing. Even though she perceives her own wellbeing differently, her testimony is often not accepted as valid.

"*Strangers on the street are moved to comment:*

I admire you for being out; most people would give up.
God bless you! I'll pray for you.

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[22] For a detailed account of testimonial injustice and as well as how stereotypes feed in such instances see: Miranda Fricker (2007) Epistemic Injustice: Power and the Ethics of Knowing.

You don’t let the pain hold you back, do you?
If I had to live like you, I think I’d kill myself.
I used to try to explain that in fact I enjoy my life, that it’s a great sensual pleasure to zoom by power chair on these delicious muggy streets, that I have no more reason to kill myself than most people. But it gets tedious…

[T]hey don’t want to know. They think they know everything there is to know, just by looking at me. That’s how stereotypes work. They don’t know that they’re confused, that they’re really expressing the discombobulation that comes in my wake.” (Johnson 2003 in Barnes, 2016, p.137)

Disabled people - in this case a person like Harriet McBryde Johnson, can be well-known authors, lawyers and activists, who can verbally articulate an account of their own wellbeing and still be met with skepticism originating from bias and stereotypes surrounding disabilities which enforce and simultaneously are enforced by the idea that their preferences are adaptive.

This is problematic in itself as it falls within the vicious circle of testimonial injustice and adaptive preferences, which presumes and proliferates the idea that disability is inherently bad. However, I would argue that testimonial injustice adds an additional layer of harm. That is precisely because not only are lives of disabled people perceived as inherently worse but their authority over making assessments over their own subjective good is also undermined. Recognizing someone as capable of knowing and voicing their own interests is a significant way in which people are recognized as equal moral agents.

Moreover, as I have previously explained, testimonial injustice is the lack -or in cases excess- of credibility given to a person’s testimony because of her having a particular identity which in the social imagination is envisioned to have certain attributes. These attributes, informed by unreliable stereotypes, can serve as a basis to dismiss a person’s capacity as a knower. I think that it can be especially harmful for people who because of their particular disabilities are perceived as incapable of having and communicating preferences. Barnes (2016) in her discussion does not focus on cognitive disabilities. However, I take it that the social imagination of what it means to have cognitive disabilities -which is influenced by unreliable biases and stereotypes- contributes to profoundly cognitively disabled people being seen as incapable of forming or expressing preferences. I am not of course saying that this is always the case. I am happy to accept that there are indeed cases where a person simply lacks any such capacity. My concern is that identity power leads to overgeneralizing assumptions which, in turn, influence both what is perceived and acknowledged as a testimony and how much effort is required on behalf of others to hear.

Vorhaus (2020) cites an account of philosopher Eva Kittay (2005) in which she describes being with her daughter Sesha whose cognitive disabilities prevent her from verbally communicating and who is dependent on others for her day-to-day needs:

“to be with Sesha is to enter her orbit, to gain a glimpse of the world as she constructs it . . . A slight upturn of the lip in a profoundly and multiply disabled individual when a favourite caregiver comes along, or a look of joy in response to the scent of a perfume—all these establish personhood.
(Kittay, 2005, p.568)

When Kittay sees Sesha’s face as joyous she sees it in human terms: her facial movements are not regarded as a muscular spasm or something indecipherable, but as included in an expression of emotion, whereas a look in the eye is understood as indicating communicative intent in response to something that gives her pleasure.” (Vorhaus, 2020, p.404)

Even though Sesha does not communicate her preferences verbally, Kittay has learned how to understand and interpret other ways in which Sesha can express them. Presumably this was neither an easy nor immediate process. Potentially the time and effort that this kind of understanding requires, indicates a commitment that characterizes special relations usually reserved for kin or caregivers rather than strangers or acquaintances. Sesha was enabled to communicate because there were the necessary material and non -material conditions that allowed it.

Let us compare now Sesha’s case with that of Fred. Crary (2020) in her discussion of cognitive disability and moral status cites a short piece written in 1999 by Washington

Post reporter Katherine Boo on the appalling conditions of some care homes located in the Washington area. Crary cites a part of the article where Boo refers to Fred Brandenburg, a man with cognitive disabilities who died in one of the facilities in question. Amongst describing the conditions of neglect and abused in which Fred had lived, Boo refers to his habit of repetitively writing his own name.

“On the streets outside the city-funded group home where he had lived and died, kids sometimes called him Retard-O. Inside, he sweetened the hours by printing the name his mother gave him before she gave him up. Frederick Emory Brandenburg. He blanketed old telephone directories with that name, covered the TV Guides the home’s staffers tossed aside. He glutted the flyleaves of his large-print Living Bible. The immensity of the effort made his hands shake, but the habit seemed as requisite as breath. In this way Brandenburg, whose thick-tongued words were mysteries to many, impressed the fact of his existence on his world.” (Boo, 1999 in Crary, 2020, p.454)

The scope of how one interprets such behaviours is limited both by what potential capacities one acknowledges a person like Fred to have, as well as what can legitimately be understood as communication. I would interpret such behaviour as Fred expressing distress. He was and understood himself as a person and potentially resented being in a place where he received neither adequate care nor opportunities for emotional development, cognitive stimulation and social relations. For such an interpretation to be possible though, regardless of if in this case it would be correct, I would have to recognise this behaviour as a testimony and as an attempt to communicate. One cannot commit to testimonial justice, that is to say, give a testimony the appropriate credibility if one does not acknowledge it first as a testimony. Disregarding the content of the accounts of cognitively disabled people give relates to disregarding the various ways in which these accounts can be given.

For example, Taylor (2017) explained that as sign language became established amongst the deaf community, so did its stigmatization. As a language founded on gestures, it was falsely considered less refined and complex than oral languages Moreover, when primates were successfully taught to communicate through sign language that was understood as further evidence of its simplicity. Deaf language could not be a valid language if even primates can learn it. Devaluation of the means of testimony seems directly linked to the devaluation of the people giving the testimony. Such injustices mutually construct one another, and both are enabled through an exercise of identity power and the social imagination of what having a disability entails. Allowing room for Fred's obsessive behaviour to write his own name despite the difficulty and effort that this required from him as a credible testimony of his wellbeing requires room to acknowledge it as a testimony in the first place[23].

The other reason of course for which one would be inclined to understand Fred's behaviour as indicating his distress is the grim environment in which he lived. Understanding Fred's actions as indicating his distress is influenced by the belief that no one would choose to live in conditions of such abuse and neglect. In a way that showcases precisely the usefulness of a concept of adaptive preferences. Even if Fred seemed content with his living arrangements, we would have reasons to think that the abusive conditions in which he lived are inherently bad regardless of how he seems to perceive them. This is exactly what complicates this discourse even further. Overgeneralisation of an adaptive preferences framework can lead to testimonial injustice but by disregarding this tool altogether one would risk losing a valuable way of identifying injustice. This of course again raises the question of when this concept should be employed and what are the limits of its scope which does not seem to have an easy answer or has an answer partially philosophical and partially political.

Testimonial injustice is not the only kind of epistemic injustice that that disabled people face. A second kind that deserves attention is hermeneutical injustice (Barnes, 2016; Scully, 2020). Hermeneutical injustice is, for Fricker, the "injustice of having some significant area of one's social experience obscured from collective understanding owing to a structural identity prejudice in the collective hermeneutical resource" (Fricker, 2017, p.155). Not all groups are allowed to equally contribute to collective knowledge. This can lead to numerous aspects of existence being obscured,

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[23] Fricker (2007) makes a relevant remark when she explains that there are certain ways of communication that enjoy a greater epistemic legitimacy over others. For example, women's accounts are perceived as intuitive or emotional and as such their rationality is questioned.

especially for socially marginalised groups. Conceptual tools necessary to name, understand and interpret these aspects of existence are left underdeveloped.

To elaborate on her concept Fricker cites Susan Brownmiller who in her memoir "In our time: Memoir of a revolution" writes:

"Wendy Sanford, born into an upper-class Republican family, was battling depression after the birth of her son. Her friend Esther Rome, a follower of Jewish Orthodox traditions, dragged her to the second MIT session. Wendy had kept her distance from political groups. 'I walked into the lounge,' she recalls, 'and they were talking about masturbation. I didn't say a word. I was shocked, I was fascinated. At a later session someone gave a breast-feeding demonstration. (p.149) That didn't shock me, but then we broke down into small groups. I had never 'broken down into a small group' in my life. In my group people started talking about postpartum depression. In that one forty-five-minute period I realized that what I'd been blaming myself for, and what my husband had blamed me for, wasn't my personal deficiency. It was a combination of physiological things and a real societal thing, isolation. That realization was one of those moments that makes you a feminist forever." (Brownmiller :1990, 182 in Fricker, 2017, p.149)

Fricker rightfully claims that this incidence is not merely an account of a personal epiphany but rather indicates a hermeneutic injustice. Up to that moment Wendy lacked necessary conceptual tools to understand and articulate her experience of post -partum depression because there were no such tools available in the pool of collective knowledge for her to use. A reason for that was that women did not had the opportunity to contribute to this collective knowledge as they occupied much fewer of those positions such as lawyers, politicians, academics and journalists – and in the case of disability doctors- which are integral in asserting frameworks of shared understanding (Fricker, 2007)

Unlike testimonial injustice, hermeneutic injustice is mainly structural. That is to say there are no particular instances where one can identify a specific agent committing it. Nonetheless testimonial injustice, hermeneutical injustice and socioeconomic injustice operate in a mutually reaffirming way. Social power is required to assert and influence collectively held meaning. Groups that are often denied this power and are placed lower in a hierarchy of social identity are those who suffer from testimonial injustice. Testimonial injustice perpetuates hermeneutical injustice by not allowing for new input of conceptual tools. Arguably, a hermeneutical gap in our collective understanding impacts on everyone. Wendy's husband also lacked the conceptual tools to understand Wendy's experience. However, for Fricker, Wendy was the subject of injustice and he was not, because Wendy suffered a harm on account of that hermeneutic gap while he did not.

The dominance of disability as bad- difference leaves a hermeneutical gap for those who do not understand themselves and their disability in such terms (Barnes, 2016). Disabled people, as I have discussed, have been stigmatised in various different forms. Depicted from morally degenerate to objects of pity and charity the distinction between disabled and non-disabled has been normatively laden, asserting a hierarchical order favouring the latter. Given therefore the overwhelmingly negative representation of disabled people it is no wonder that many who do not understand themselves in such problematic terms want to distance themselves from the concept of disability (Barnes, 2016, 35-36). They do not have adequate conceptual tools to articulate their disability in positive terms. Their capacity of self -understanding is obscured and by extension so is their capacity to challenge such norms. This is partially a task that disability pride seems to have undertaken. Not only that but disabled people are in a unique disadvantage. Apart from any broader social marginalisation, it is possible for a disacled person to have very little opportunity to socialise and interact with someone who has similar physiological traits and who navigates the world in the same way (Scully, 2020)

Furthermore, whether or not disabled people's testimonies are taken seriously also seems to be relying on what potential claims would they generate. Marsh (2020) differentiates between three distinct interpretations of statements given by disabled people about their wellbeing. A person can simply be stating that they value their life as it is, including their disability. For Marsh (2020), Barnes (2016), and even Harman (2009), as I previously discussed, this is a humble enough claim that generally should be taken at face value as the alternative would be to subject the disabled community to an injustice.

However, Marsh explains that when disabled people give positive accounts of their lives, such testimonies can also have the following meanings: Firstly, it can mean that they claim their disabilities do not present them with any disadvantages that cannot be attributed to prejudice or lack of appropriate social arrangements. Secondly, it can mean that people with such disabilities in general would not face any additional disadvantages that do not stem from discrimination and lack of social support. For Marsh, although that there is no inherent reason to doubt disabled people about their subjective wellbeing, it does not necessarily follow that such testimonies are a reliable basis for generalised claims such as that disability is a mere difference.

One reason for this, according to Marsh- as I briefly touched upon when discussing the moral asymmetry between causing and preventing disability- is that any individual testimony about one’s subjective wellbeing is an epistemically suspicious tool for extrapolating broader generalisable assessments. Most importantly though such suspicions are justifiable because of the different, antithetical and often incompatible accounts of subjective wellbeing that disabled people offer. Although it is obviously significant for those who value their disabilities to be acknowledged it is equally necessary for any account of disability to encompass those who do not value their disability and who would prefer to not have it. Testimonies like those by Harriet McBryde Johnson need to be taken into consideration. However, as Marsh argues, so should those from disabled people explaining that:

“Bones are not supposed to crack under the weight of a laptop computer. They are not supposed to snap when a little girl is simply dancing in her living room. A routine fall from a scooter should not land a child in the emergency room with multiple fractures. Forty-something-year-old knees should not be completely stripped of their cartilage. No matter how much good (wisdom, love, understanding, compassion) comes out of

living with this capricious disorder, the disorder itself is not good." (Ellen Painter Dollar 2012 found in Marsh: 2020, 315)[24]

What Marsh seems to be objecting therefore is not Barnes's mere difference account of disability per se. Rather he expresses doubts about the conditions under which any such epistemic claims are made. It is indeed not clear how any such testimonies can be translated into broader normative claims. It is important, however, to note that such epistemic limitations would apply on accounts from both disabled and non- disabled people, even though as I have already mentioned, this does not represent the standard to which non-disabled people are held.

Finally there are scholars like McMahan (2005), Savulescu (2010) and Signer (2004) that as I have discussed doubt all three premises. They seem adamant that disability- however differently they may conceive of it- is inherently bad. Nonetheless their claim is not that the lives of those currently living with disability are less valuable as such. It is rather that disabled lives cannot hold, ceteris paribus, the same amount of wellbeing as non-disabled lives. However, this claim becomes deeply problematic when the amount of potential wellbeing becomes a criterion for who gets to live. From proactive beneficence to people with Down syndrome being excluded from transplant lists and the uncritical endorsement of assisted suicide, it seems disabled people suffer the consequence of having to prove their capacity for wellbeing and even personhood to an audience not prepared to listen.

There is a lot to say about disability and welfare regarding how much wellbeing can disabled people experience, under what conditions and what they are owed. Nonetheless, it is important to ask why this is a relevant criterion at the first place, how it would be applied and by whom. As Aas (2020) points out, the implications following any framework of disability are not clear. And it is precisely the fact that these issues are not clear that is important and indicative.

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[24] Marsh (2020) Sepherd (2020) and Mosquera (2020) for instance all refer to the accounts offered by people with Locked in Syndrome.

For example, let us turn back to Harris (2001) and his concern about children being born deaf. Viewing deafness as a bad difference can be enough to justify research on possible causes for deafness as well as possible procedures that could restore hearing either after or before birth. The possibility of a deaf child, to the extent that it is identifiable –through pre -natal screening or In Vitro Fertilization- can also be something that doctors explain to prospective parents. However, it is a different question whether this perception of deafness as a bad difference is sufficient for doctors to recommend the termination of a pregnancy. And it is even less clear what doctors should do in relation to deaf parents that would actively prefer through for instance IVF to increase their chances of having a deaf baby.

Most decisions regarding children's wellbeing are commonly left to the parents. Nutrition, schooling, vaccines, early socialization, hobbies, and disciplining arguably have a significant impact on a child. Not only that but each such category acknowledges a plethora of distinct and sometimes even antithetical practices which parents follow to promote their children's wellbeing. These differences can stem from competing conceptions of wellbeing, prioritizing other values, and a variety of available means and social conditions. Parental freedom of course is not without limits (Stramondo, 2017; Aas, 2020). This is why there are laws and institutions protecting the interests of children and why the state can take them away from parents if they fail to identify and act in their children's best interest.

Giving parents the option to treat their future child's deafness can be seen as precisely deferring to them a decision relating to the child's wellbeing. Biomedical enhancement through procreative beneficence is envisioned exactly in these terms, as I will discuss later on. It may be the case that most parents would opt for their child not to be deaf. Such a decision can be based on preferences or other non -material and material conditions. However, it can also reflect prejudice and a problematic misunderstanding of what life with deafness entails or social pressure. Regardless, their decision to have a non- deaf child is not questioned irrespectively of the level of reasoning, if at all, behind it.

Nonetheless, and perhaps to Harris's or Kahane's surprise, similarly to how it is not obvious that all parents would prefer an enhanced child, there are parents that actively prefer a deaf child (Sandel, 2007). Parents who are deaf themselves could prefer to have a child that shares their disability. They have a firsthand understanding of what being deaf entails. They value their lives which have been shaped amongst other factors by their deafness. They appreciate the different ways they navigate the world, whether that is the different way they experience music through vibrations, using sign language and most importantly belonging in a community that shares a culture.

As I briefly discussed in relation to the Impermissibility Argument, disability as mere difference allows for someone to never consider themselves having a disabled child for whichever reasons even if they are deeply problematic. Disability as bad difference would however stipulate that people should not choose fetuses with disability traits whether they would have good reasons to or not. Such a framework therefore would also question the motives of parents who would have preferred a child with a disability trait implying that they are not acting in accordance to their children's wellbeing. Moreover as Aas (2020) observes, it would assert that the parents are mistaken about how they value and experience their own lives and about how this informs their understanding about what a good life is to such an extent that it does not even fit in with the reasonable pluralism liberal western democracies aim at upholding. Given the testimonies provided by disabled people about their own wellbeing, claims made by disability pride and the history of discrimination against people with disabilities, Aas (2020) like Barnes (2016) rightfully point out that the bad difference understanding of disability exhibits an epistemic confidence that is both undeserved and also potentially harmful.

Given the ambiguities in defining a framework of disability, the danger of prejudice influencing out understanding, the epistemic injustice that this can lead to and the potential problematic use of adaptive preferences, what can we say about understanding disability and how does it relate to biomedical enhancement?

If we circle back to what was discussed in chapter one about understanding enhancement and its purposes, one I would argue that we can notice both disability and bioenhancement operating in a conceptual continuum to reaffirm that the possession of certain capacities is an indicator of wellbeing. Such capacities are envisioned as having inherent, instrumental and positional value since they enable access to other goods. Advocates of bioenhancement seem to understand both bioenhancement and disability in relation to wellbeing framed as individual autonomy with the greatest amount of options, control over one's self and one's environment. For them, bioenhancement is desirable as it promotes or secures such possibilities and disability is undesirable as it hinders them.

This stems firstly from both disability and enhancement, in spite of occupying different ends of the spectrum, being identified through the use of the same dual lens: as a departure from typical species functioning and in relation to wellbeing as described above.[25]

On the one hand, both disability and enhancement, as I have discussed, have been defined in terms of departing from typical species functioning**.** The dominance of the medical model, for example, rendered departure from typical species functioning fundamental in identifying disability and was understood both normatively and descriptively. This medical model of disability binds disability to particular bodies, naturalizing it and as such undermines the need for social reform that would enable the full participation and inclusion of disabled people. Aside from the medical model though, the social model as well as disability as mere difference acknowledge typical species functioning to describe impairments. The difference is that these models challenge the normativity of typical species functioning and turn to question how social conditions contribute to disability.

Bioenhancement is also understood as a departure from typical species functioning. Radical enhancement, like the one advocated by transhumanists such as Hughes or Bostrom, which I discussed in the first chapter envisions people having kinds of capacities beyond what is typical to our species, from unprecedented cognitive capacities to prolonged life spans. Less radical depictions of bioenhancement would also have to rely on a notion of species typical to distinguish themselves from therapy.

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[25] It is important to note that my criticism here does not extend to philosophers of disability in general. As I try to make clear in my writing, I understand the problem to be that bioenhancement advocates understand disability in a similar lens through which they understand enhancement. This indicates a lack of engagement with competing ideas, conceptual tools, and models of disability which have emerged from within disability studies and philosophy of disability.

Moreover, bioenhancement, to the extent that it is understood as going beyond typical species functioning also undermines normative grounds for typical species functioning. That is to say, for the enhancement enthusiast there is no inherent reason that typical species functioning should limit our understanding of what is possible or even desirable. At first glance therefore, there seems to be the possibility for a common ground between biomedical enhancement and disability justice advocates in challenging the tyranny of the normal, as both disability justice and bioenhancement advocates seem to be arguing for greater "morphological freedom" (Sandberg, 2013) from typical species functioning.[26]

On the other hand, a link that is worth emphasizing is that both biomedical enhancement and disability, aside from departure from typical species functioning, rely on accounts of wellbeing. In the first chapter I examined how the project of biomedical enhancement is inherently understood as an attempt to increase both individual and social wellbeing. In Savulescu and Kahane's proposed framework, the link is direct. However, as I argued, even when not explicitly acknowledged, the alleged relation between enhancement and increased wellbeing is what makes the pursuit of enhancement intelligible. This contributes to deciding which traits are considered good candidates for enhancement due to their instrumental, inherent, or positional value and their adherence to the idea of wellbeing as choice and control.

This is mirrored in how disability is often understood especially by bioenhancement advocates. In this chapter, I discussed how disability is viewed as bad for someone as it can diminish their opportunities for wellbeing. Being blind, deaf, paraplegic or having Down syndrome is understood as precluding one from experiencing certain valuable goods and as such making their lives, other things equal, worse than if they did not have disabilities. Disabilities are understood as bad as they increase dependency and limit available options. What seems to be the case, is as I previously mentioned, that both enhancement and disability are constructed against a common view of what is necessary for a good life.

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[26] I will return to further pursue this point in my conclusions where I discuss the possibility of an allyship between disability justice and bioenhancement advocates.

The important role of increased or decreased wellbeing in defining and even distinguishing enhancement from disability can be seen in atypical cases. In the first chapter, I referred to the hypothetical case of Funes the Memorious and the case where an enhancement in terms of memory contributed to the decrease of Funes's wellbeing and as such blurred the boundaries between enhancement and disability. Further down this chapter, I will elaborate precisely on this point when I discuss firstly the case of Ashley X, a disabled girl whose parents opted to further diminish certain capacities to enhance her wellbeing and secondly the case of selecting a deaf sperm donor. These examples of diminishment as enhancement as Savulescu refers to them, both affirm this relation whilst also designate its limitations.

What these blurred distinctions indicate is that, similarly to what I have tried to show in this chapter, disability is not necessarily a negative simpliciter and enhancement is not necessarily a positive one. Disability justice advocates have challenged such problematic assumptions on two accounts. Firstly disability is not necessarily limiting. Or more accurately, when disability is limiting this is largely due to a lack of social arrangements and accommodations rather than impairments of individual bodies. Moreover, disability justice literature has also challenged the assumption that a good life should be understood in these narrow terms as control and increased choice. As I have shown in this chapter disabled people value their lives and can also value their disabilities. Disability justice therefore challenges what seems to be at the heart of biomedical enhancement literature. What bioenhancement advocates therefore would need to do is expand their understanding of how wellbeing can be achieved.

The second similarity between disability and enhancement is that both have emerged in relations to social problems, and both have identified individual bodies as appropriate sites for intervention in response to these problems. Although of course people with atypical physiologies have always existed, the category of disability as emerged back in the nineteenth century, was shaped and understood within a particular socioeconomic environment.

As Kerr and Shakespeare (2002) explain, both the UK and the USA were facing increasing social turmoil in the mid- to late nineteenth century. Urban poverty and slums started generating increasing concern over the “degeneration” of the population and increased births among the poor disproportionately to the middle class created the desire for a scientific method that through proper regulation could rectify such social problems. Part of this movement included the institutionalization of anyone considered not fit for society. Disabled people who could not contribute to production at the same pace and way that non-disabled people could, became the object of charity and where segregated from the social whole (Rose 2017, Hall 2016)

Although originally institutions designated for disabled people emerged as a charity reflecting concerns over their mistreatment in shared facilities this quickly changed. Separating and institutionalizing disabled people for their own protection transformed into separating them for the protection of the rest of the society whose flourishing they allegedly could threat. The Metropolitan Poor Act (1867) and the Idiots Act (1886) in the UK are indicative of the beginning of a process in which biological traits became a social problem demanding an institutionalized solution precisely such as the institutionalization and sterilization of disabled people. This also became a common practice across the USA in prisons and mental institutions. In other words, disability was treated as a moral, physical or cognitive individual shortcoming that prevented someone from full participation in the dominant scheme of social cooperation and most importantly in the labor market. [27]

I would argue that in contemporary discourses advocating biomedical cognitive enhancement one can see a similar pattern emerging. Firstly, as I discussed in the first chapter, a primary reason why biomedical cognitive enhancement is desirable is because of the positional advantage it can give within the labour market. Enhanced cognitive capacities would make one a better candidate for a job position to the extent that cognitive capacities are useful for most jobs.

As such bioenhancement, according to its advocates, could help each of us to better compete in the labour market and improve our individual positions. Not only that, but as Savulescu, Sandberg and Kahane (2011) have argued, biomedical cognitive

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[27] For a historical overview see Kerr and Shakespeare (2002), Carlson (2013), Hall (2016,) Russell and Rosenthal (2019), Rose (2017)

enhancement can allow for better budgeting, making more prudent financial decision and even decreasing someone's chances of criminality and incarceration. This, they have claimed, can be the case not only at an individual but also at a social level. Although they admit that the science behind IQ testing is dubious, the authors point out that there could be a correlation between "national IQ" and GDP (Savulescu et al., 2011). I find this account deeply problematic as it individualises social issues such as poverty and prescribes a medicalised individual solution. This strongly echoes narratives that poverty is an indicator of poor individual moral behaviour and a lacking intellect as it implies that people could get out of poverty if only they had higher cognitive capacities. This individualism of their analysis is further indicated by their omission of discussions about any structural or institutional factors that can impact wealth distribution.[28]

I would argue this goes hand in hand with the third similarity between disability and enhancement; that there has been a disregard of how the social environment dictates the degree and scope of the impact disabilities and enhancements can have. This can be seen within the disability discourse primarily through the dominance of the medical model I discussed earlier in this chapter. Disability, physical or cognitive was understood as part of individual bodies. As such it often rendered disabled people as objects of pity or charity on behalf of non-disabled people whilst reinforcing the view of disability as a personal tragedy. In this way disability becomes both private and natural and beyond the scope of justice. The solution to disability is direct medical intervention or institutionalization based on perceived medical grounds.

As I previously mentioned, the social model of disability sheds light to the environmental conditions that render certain physiological traits a disability. As such it challenged the assumption that disability should necessarily be treated through medical interventions. Disabled people are excluded not merely because their physiology may be atypical. The social conditions in which we all find ourselves in will

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[28] Another example I think can be found in Persson and Savulescu (2014) work on biomedical moral enhancement. In their account they explain how our evolutionary biology and moral psychology make humans unfit to deal with global challenges such as climate change and global terrorism.

play a pivotal role in which traits are considered valuable and which are not, what the dominant form of social cooperation looks like, which people it is catered do, what accommodations are available, and what accommodations are considered reasonable.

The biomedical enhancement literature mirrors problems that the medical model of disability exhibited. Let us assume that biomedical enhancement either via embryo selection or via drug administration becomes an established practice. In itself, this cannot guarantee that a modified physiological trait will become an enhancement. We saw earlier how bioenhancement does not represent an inherently novel issue because we already are aware and try to control numerous environmental factors that contribute to how a trait is developed and how we perform. The bioenhancement literature does not include, however, such concerns in its reasoning.

For example, scholars such as Savulescu and Harris have argued in favor of procreative enhancement. However, there is a contradiction in advocating that parents have a responsibility to have the children with the genetic predisposition to have the best possible lives without adequate attention to the social environment that would allow for these traits to flourish. A genetic predisposition against disease and disability or towards higher cognitive capacities cannot substitute access to appropriate nutrition or good schooling. Yet access to appropriate social conditions is omitted from any such discussion in favor of bioenhancement even though the effectiveness of bioenhancement largely would depend on it.

Favoring individual changes over social ones is also the case when biomedical enhancement is presented as an alternative to other already established practices. As I discussed in the first chapter, biomedical cognitive enhancement for its advocates is an additional option amongst others. Let us take the example of students requiring additional support. One potential solution would be, for example, to revise what are the reasons for this need for support and what changes could universities implement to satisfy it. It may be that there are too many students in tutorials and that they do not get the opportunity to share all the questions or concerns. It could be that the particular module would be better spread throughout a year instead of a single semester or that there is a need for longer, or more tutorials, to accompany the lectures. However, the university might not have the staff to support these additional hours. Two possible solutions for example would be for the university to hire additional teaching staff or to encourage students to take cognition enhancers.

For advocates of enhancement both options need to be weighed and then the more effective should be preferred. Savulescu explains this specifically in terms of intellectual disabilities: *“When it comes to questions of enhancement, we can enhance our biological and psychological capacities to suit our natural and social environment, or we can attempt to alter our environment to suit our unenhanced selves. Our own view is that all routes must be considered.”* (Savulescu et all, 2011, p.15)

What I take is problematic in this statement is firstly that it does not go as far as to describe how would the burdens and benefits of each option be distributed. For example, hiring additional teaching staff might be more expensive for the university but cheaper for the students. Alternatively, making public buildings accessible to mobility aid users will entail a -potentially high- cost that can be distributed to the social whole through taxation. The other option could be letting mobility aid users shoulder the cost themselves by for example switching form a wheelchair to a mobility scooter or bearing the cost of their exclusion. This might be a cheaper option overall, but one would need to also evaluate the how its cost is also differently distributed. The primary reason why this ambiguity is problematic is that it seems to take biomedical and social intervention as interchangeable alternatives. This not only is an ineffective way to encapsulate the interlinking relation of the biomedical and the social but also opens the body as a locus for intervention to resolve social issues.

Proponents of cognitive enhancement, as I have discussed, explain that demands for biomedical cognitive enhancement are not incompatible with demands for social changes. However, as Koch (2017) observes, proponents of cognitive bioenhancement do not go past “lip service” when referring to demands for structural changes. Unlike disabilities studies where structural changes have been advocated by alternatives to the medical model, this has yet to be seen within the biomedical enhancement literature. Therefore, despite claims in the literature that biomedical cognitive enhancement needs to be examined alongside other options that could achieve the same goal, any such actual engagement seems to always be omitted.

2.6 Procreative beneficence

A final issue I will be discussing is the case for procreative beneficence, namely the proposed moral obligations for parents to have the best children possible where best is understood as having the most prospects for wellbeing. Not only does this represent a possible manifestation of bioenhancement but it is intricately related to existing practices regarding reproductive technologies such as embryo selection and prenatal testing.

Arguments in favor of enhancing one's children echo the ones I discussed earlier, regarding the permissibility and desirability of biomedical enhancement in general. Why shouldn't parents have children which are smarter, healthier or live longer if that becomes possible? Arguably part of being a parent entails supporting one's children to have the best life they can. Health, or enhanced cognitive capacities are invaluable tools in helping children have a more open future. Moreover, parents are applauded for trying to give their children the best life possible through both social and physiological means currently available. By enrolling children to the best schools available, overseeing their early socialization, ensuring they get proper nutrition and making sure they are up to date with vaccinations, parents already have a plethora of tools they use to ensure their children will have the best chance to a good life.

For these same reasons, parents strive to provide their children with all possible advantages in life whilst they also try to safeguard them from anything that could be a disadvantage such as disease and injury. Advocates of bioenhancement claim that this can be extended to any traits of disability such as cognitive disabilities which parents should avoid through practices including In Vitro Fertilization (IVF), prenatal scanning and embryo selection. Although Savulescu (2001a, 2007) has been one of the most vocal proponents of procreative beneficence being a moral obligation, his view is reflected more broadly in public discourse.[29]

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[29] One recent example was Richard Dawkins posting a controversial tweet in which he advised women to "abort and try again" if their fetus is detected to have down syndrome https://www.theguardian.com/science/2014/aug/21/richard-dawkins-apologises-downs-syndrome-tweet

This call for procreative beneficence, I argue, showcases clearly the conceptual problems and ableist prejudice that, as I have shown, run through the biomedical enhancement discourse. Procreative beneficence does not merely extend the scope of parental action. Rather it reaffirms that there are particular traits and capacities which are desirable because they adhere to what biomedical enhancement literature defines as a good life, a life with the greatest scope of options to pursue and the greatest control over one’s self. That is to say, procreative beneficence requires a process for parents to identify which traits would contribute to their child’s future wellbeing and which traits would potentially undermine it.

What is important to note however is that, the scope of traits within which parents can choose is limited. Parents who are urged towards procreative beneficence are simultaneously urged to adopt the same understanding of wellbeing advocates of procreative beneficence and bioenhancement hold, which involves enhancing traits that would contribute to the future child’s autonomy.

This becomes clear in the case of Sharon Duchesnau and Candace McCullogh, a deaf lesbian couple in Maryland who wanted to have biological children and who in 2001 decided to opt for a deaf sperm donor. The couple had to approach a family friend as sperm banks exclude deaf donors. They already had one child who is also deaf, and this would be their second. They explained that any child would be “a blessing” but a deaf baby would be a special blessing” (Kafer, 2013, p.76). When this case entered the public eye, it generated a lot of controversy from a variety of different sources and political views condemning the parents’ decision.

This case highlights that not everyone is welcome to make use of such technologies. The promise of reproductive freedom through new technological innovations is limited to uses that support particular values by a particular socio-legal framework within which such technologies are created. For instance, disabled people, working class people, single parents, people of colour or same sex couples are disproportionately excluded or discouraged from making use of these practices. Barriers discouraging or excluding such demographics can take different forms. For example, insurance companies might only cover costs in case of infertility which does not always translate easily to queer couples. Fertility treatment might only be available for married couples, or it can be denied to disabled people as laws prohibiting direct discrimination are not always enforced. In other words, reproductive technologies do not encourage everyone to reproduce. Rather such examples like Sharon Duchesnau and Candace MCullogh or Kijuana Chambers, a black, blind lesbian who went to court for being denied fertility treatments in 1999 suggests that the future is not meant to be inherited by disabled people and that the appropriate use if these technologies is to eradicate disability (Kafer, 2013, p.69-85)[30]

A second particularly interesting case that has generated a lot of literature (Kafer, 2013, Liao et al, 2007; Berube, 2010; Singer, 2010) is the case of Ashley X. Savulescu refers to this case as an example of enhancement as diminishment (Earp B et all, 2014). Ashley was born in the USA with a condition called static encephalopathy. According to the medical professionals that were responsible for her case, Ashley's cognitive development would stop to the equivalent of what is usually seen in a 3-month-old. Her parents therefore had Ashley undertake a treatment "which included high dose estrogen therapy to stunt Ashley's growth, the removal of her uterus via hysterectomy to prevent menstrual discomfort, and the removal of her breast buds to limit the growth of her breasts "(Liao et al, 2007, p.6) The justification her parents gave was that this treatment would be in Ashely's best interests both in social and biological terms. For example, Ashley's small size facilitates her mobility in terms of what

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[30] An additional interesting aspect of this case is that it highlights how ableism intertwines with heteronormativity. This can clearly be seen in the reaction of the Family Research Group- a US organization that defends traditional family values. Its president labeled the actions of the couple being labeled as selfish as they place a double burden on the future child. Not only will it be burden by having same sex parents but it will also be burdened by being disabled. As Kafer (2013) points out, there are no comparable reactions- by the particular organization or the public- when heterosexual deaf couples reproduce. What was targeted was that the couple's choice moved away from naturalness in a dual sense. Firstly by having a baby in a same sex relationship and secondly by selecting a deaf sperm donor they attempt to control the outcome of the pregnancy negating what was considered to be a matter of chance. This is even though, as Kafer points out, there is nothing natural about removing deaf sperm donors form sperm banks. This is an illuminative example of how different modes of oppression can operate. It was not merely the fact that a deaf child would be brought into existence, nor was it the fact that a same sex couple would have a child. Individually these facts could have been easier to accept. Rather it was their combination which was "too abnormal, too disruptive, too queer, even for some gays and lesbians and people with disabilities" (Kafer, 2013, p. 79)

caregivers can offer her. The hysterectomy and the breast bud removal would not only alleviate physical discomfort and minimize the risks of certain cancers that ran in the family but would also discourage the sexualization of her body.

Ashley's case generated a lot of controversy and was discussed in terms of hospital policies and disability rights advocacy. It was questioned whether these processes were in Ashley's best interests or her parents' and caregivers' interests. Objections to this treatment included questions on how such medical procedures weight against other options, for instance providing extra caregivers, or financially supporting the renovation of Ashley's house to better accommodate her needs. Although concerns were also voiced about how these processes could undermine Ashley's dignity, a representative of the Institute of Ethics and Emerging Technologies explained "the estrogen treatment is not what is grotesque here. Rather it is the prospect of having a full grown and fertile woman endowed with the mind of a baby" "Liao et al, 2007, p.19)

There are different interlocking factors that make Ashley's treatment problematic, as Kafer (2013) also explains. Firstly, this Treatment was undertaken under the assumption we know precisely the extent and impact of Ashley's disabilities and that they are static. As I will further explain though in the following chapter, it is difficult to make such assessments for certain. Ashley's parents explain, for instance, that she likes music or gets bored. This in itself shows a capacity for feeling and potentially pleasure which could challenge assessments about whether she would benefit from this Treatment. It is not clear for example if removing her breasts would benefit her, or why they could be nothing more than a source of discomfort. It is also not clear if in the same way that she communicates boredom or musical appreciation to her parents, she might be able in the future to express additional sentiments.

Moreover, this Treatment is not merely an account of what medical procedures Ashley undertook. Rather it generated discussions which to an extent were encouraged by Ashley's parents about this Treatment being available to other people like Ashley. This though can be particularly problematic as it would require an assessment of what conditions and for which bodies such a medical intervention would be beneficial. By that I mean it is not clear what combination and extension of impairments would one need to have before been eligible for such surgery. As Kafer explains, the Ashley Treatment has only been considered appropriate for severe disabilities. However, the distinction between severe, or moderate disability are not always easy to assess. This is not only because disabilities are not always static categories but also of the ambiguity regarding what criteria should be applied and who is in the best position to make this decision.

Most importantly though, there are two issues highlighted in this example which are relevant to the concerns I would like to put forward. One has to do with how this treatment relates to other potential alternatives. As Kafer explains, many people who expressed support to Ashley's family did so in acknowledging the limits of not living in a 'utopia'. That is to say, it is important to consider the real financial and material constraints within which Ashley's parents have had to make decisions. The key issue is that the parents had expressed that they want to keep Ashley at home to be with her family and that they would do so regardless of whether she would end up undertaking medical intervention. If Ashley's body continued to grow her family might have had to turn to other solutions. For example, they might need to employ a caregiver or they might need to make modifications to their house which would make it more accessible to Ashley. Such solutions entail a cost which is often prohibiting.

What the family has stressed is that they do not want Ashley to be institutionalized. Given the history of institutionalization of disabled people, often followed by a history of abuse, their preference for Ashley to stay with her family is widely shared by disability right advocates. Medical intervention of this kind could be a third option which would facilitate disabled people staying with their families or receive the care they prefer.[31]

Deciding whether a disability requires a medical or a social response is an interesting issue which, as I have discussed, keeps appearing withing the bioenhancement literature. If such medical treatments are less costly or equally efficient, for Savulescu and Kahane, we might have reasons to view them as interchangeable alternatives. Or to go back to the example of Gulliver and the Lilliputs, if there was a possibility to reverse his size to what is Lilliput species typical, then this might be an alternative to

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[31] I will come back to this point in chapter three when I discuss how biomedical cognitive enhancement is proposed as an alternative way to support cognitively disabled people or people within the lower range of cognitively typical species functioning to enter and compete within the labour market.

Lilliput’s having to shoulder the cost of making social accommodations to include Gulliver. Therefore, once again these options are placed together and examined independently of other considerations of either distributive justice or disability justice. As Kafer points out, by proclaiming social support as utopian, medical interventions are perceived as the only available option (2013, p.61)

A second issue that needs attention has to do with who has the authority to make such decisions on medical treatments. In the case of Ashley X there were concerns raised about how the hospital authorised such medical interventions and about whether there should have been a judicial intervention. This was considered an issue, especially, in terms of the hysterectomy, given the history of forced sterilization of disabled people. Therefore, between the parents, the medical staff and the juridical system it is important to ask who should have the authority to make such decisions and on what grounds. As Kafer (2013) explains, there are different factors at work. On the one hand, the epistemic authority that Western medicine enjoys often results to other competing accounts of the welfare of disabled people being disregarded. The presumption here is that medical staff are better positioned to understand, and act based on neutral facts about disabled bodies. Furthermore, their view is seen as objective and unbiased from their own perceptions, experiences, or political values. Such objectivity is understood as a key difference between the knowledge offered by caregivers, parents, or disability justice advocates whose position is understood as reflecting ‘political agendas’ (Kafer, 2013, p.60)

On the other hand, there is the view, as Ashley’s parents explain, that parents and caregivers are better positioned compared to medical staff to understand what is best for disabled people as they have lived experience of each particular case. These care relations therefore become key in understanding the needs of disabled people. However, one can argue that limiting authority within family has not always been successful in protecting disabled people from abuse. Moreover, as Kafer explains, it reinforces the idea that disability is a family matter that needs to be resolved privately. This can further impede public discourse on how disabled people are excluded and what political action is necessary to ensure disability justice.

A final observation that is worth making is that, at first glance, the Ashley Treatment and enhancement as diminishment seem to broaden the scope of which traits can be legitimately modified within the proposed bioenhancement framework. However, it ultimately does nothing to challenge the presumption that Ashley's life is inherently worse and investigate why would that be. Her existence is viewed as a problem to be resolved and the relevant discussion consists of competing views about the best solution. Such approaches affirm disabled people as objects of pity or as a burden whilst also upholding the desirability of certain traits – like enhanced cognitive capacities- over others.

By desirable traits, I mean traits that are considered necessary for wellbeing. As I have previously discussed, within biomedical enhancement literature wellbeing is conceptualised as an unencumbered future in which a person has control over their environment and operates as an autonomous individual capable of conceiving and reflecting on their life goals. It is within such a context that enhanced cognitive capacities are deemed an advantage whereas cognitive disabilities are considered a disadvantage. As I have discussed this conception of wellbeing that understands disability as a disadvantage, a limitation and a bad- difference is based on intuitions so strongly held that many contrasting testimonies by disabled people in relation to their own wellbeing are met with suspicion and are often disregarded. In the case of procreative beneficence, the epistemic limitations are stricter as parents are called to speculate about the wellbeing of a future person.

An understanding of disability as a bad-difference however is necessary for procreative beneficence to have meaning. One of the main arguments in favor of disability as bad- difference was the impermissible implications argument. The idea that if disability is a mere- difference, then, causing disability would be permissible. Procreative beneficence, which is precisely the calling for enhancement is made intelligible though asserting a moral asymmetry between enhancement and disability. Causing disability is considered impermissible because disability is tantamount to harm whereas procreative beneficence is permissible because it bestows an advantage.

Enhanced cognitive capacities are precisely the type of traits that procreative beneficence would encourage parents to opt for whereas any trait of cognitive disability, for example Down syndrome detected in fetuses via prenatal screening, is a reason for the fetus in question to be eliminated. As I have shown this is not only because cognitive capacities are understood as having inherent, instrumental and positional value. Rather it is also because cognitive capacities are considered fundamental for a future child to live an autonomous life, with life plans of her own that she will be able to reflect upon**.** For advocates of procreative beneficence therefore**,** parents are not only permitted but have a moral duty to use techniques such as embryo selection and IVF to select embryos with desirable traits, such as increased cognitive abilities which would promote the future child’s autonomy. If not, then they risk bringing into existence embryos marked with undesirable traits, namely traits associated with disability which threaten autonomy and an unburdened existence.

As I discussed in the previous sections, this is an indication of biomedical cognitive enhancement advocates asserting that a degree of cognitive capacities is necessary to lead an autonomous and therefore meaningful life and failing to adequately recognize that cognitively disabled people can be in a position to understand their own good. This assertion, for Rohrer shows a “failure to imagine that people in some other group lead lives as rich and complex as our own” (2005, p.56).

However, as Hughes (2004) explains, if there are to be any formal limits to what genes or traits parents are allowed to choose, it is precisely to protect this autonomy. This encapsulates the antithetical and possibly incompatible relation between enhancement and disability. Enhancement is advocated as the promise of choice, control, autonomy and independence. As long as disability is thought as dependence, risk and vulnerability there where will be no room for it within the enhancement project because for the enhancement project such features prevent wellbeing. What seems to be happening according to Hall (2016) is the projection of the liberal individual to its logical extension, the techno- liberal individual. As Menuz (2015) explains for many advocates of biomedical cognitive enhancement like Savulescu, human bodies and psychology are an impediment towards a free existence.

This is something that runs through the entire biomedical enhancement discourse but becomes particularly apparent in the case of procreative beneficence because the latter operates in relation to fetuses and future people who do not have the same moral significance as existing people with or without disabilities. Procreative beneficence applies the authority of medical knowledge to look for biological markers of wellbeing and discard any fetus not carrying them, that is any fetus carrying markers of disability.

As such, wellbeing is conceived as measurable through an objective scientific method (Hall, 2016). This, I argue, has two significant implications.

Firstly, it encourages a determinist understanding of physiological traits. By framing the issue in terms procreative beneficence, this account, by default, prioritizes the influence that physiological traits have over considerations of the social environment and social relations in which the future person while exist. Not only that but it equates the entire life of a future person with a particular physiological trait which is portrayed as negative. What disability scholars such as Wasserman and Asch (2012) point out is that, referring to a fetus, there is no way of physically separating the undesirable trait from the entire future person leading to increased stigmatization of the future person. This impedes a reflective approach necessary to scrutinize medical authority and the underlying assumptions operating as well as ensuring meaningful reproductive rights as I will discuss later on.

Secondly, it marks both bodies of the fetuses and the pregnant bodies as sites of risk. Procreative beneficence links disability to specific physiological traits as a matter of objective scientific fact. This is done through a collective medicalized framework of disability propagated by discourses, policies, legal frameworks and social norms. These physiological traits of disability are understood as an indicator of risk. Parents who do not take appropriate action upon being informed of their fetus carrying such traits risk having a disabled child, which is itself in risk of experiencing a life of limited wellbeing. This is evident in procreative beneficence implying that parents, in order to produce the best possible children, might have the moral obligation to refrain from passing their biological traits to their offspring. To the extent that they themselves are associated with certain risks, parents feeling morally obliged to have children with the best sets of genes may have reasons to select donor gametes through embryo selection (Sparrow, 2016). I would argue that the case of a deaf lesbian couple selecting a deaf sperm donor generated such controversy precisely because it opposes this perceived obligation and challenges the dominant understanding of what best genes might mean.

A problem though is that this account proliferates an uneven and unfair distribution of this risk. Pregnant women and fetuses with potential disabilities which are already in a vulnerable position due to social injustice are further marginalized. They are excluded from contributing to the collective understanding of what is risk whilst they are called to individually assume the burden of risk (Hall, 2016). This is already evident in the ways pregnant bodies are disciplined by social norms and medical establishments. Procreative beneficence is an extension of an already problematic understanding of the fetuses' health and wellbeing as the result of pregnant people's individual health management.[32]

A final aspect that is clarified through procreative beneficence is a potential clash of interests. I have already mentioned in previous sections how there might be a discrepancy between those who undertake biomedical cognitive enhancement and those who benefit from it. Through procreative beneficence one can examine how the different interests of disabled people, parents and fetuses relate to each other.

Procreative beneficence is primarily thought in relation to a future child's best interest in leading an autonomous life with the maximum of choices available and the greatest amount of control. Interestingly the most significant objections against procreative beneficence seem to by that it would undermine the future child's autonomy and would rob her of the opportunity to have an unencumbered life. Scholars like Habermas (2003) or Sandel (2007) object to parents having this kind of control over their children as this could amongst others undermine the giftedness of life, assert an intergenerational power imbalance or distort parent- children relations.[33] Advocates, on the other hand, of such initiatives argue that this need not be the case as long as parents opt for certain desirable traits which not only are compatible with an open future but can in fact promote it. What is worth noting is that in either case the child's interests are equated to a specific account of autonomy. What seems to be contested is the best way of achieving it.

Proactive beneficence, however, even if suggested as a way to advance future children's interest could potentially undermine those of pregnant people and those of

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[32] This can be seen in the emerging academic and legal discussions that frames pregnant women as responsible for potentially impairing their fetuses, for example see (Flavin, 2009; Killian& Thomas 2020)

[33] Although both scholars use their own distinct vocabulary, parts of their respective objections seem to echo concerns similar to the non-intervention principle that Barnes (2016) explores.

existing disabled people. It proclaims a moral duty for parents to have the best children possible. The understanding of 'best' advocated for is again based on, and perpetuates, the ableist prejudice that life with disabilities is inherently worse and therefore less deserving. This directly contributes to the devaluation of existing disabled people as it supports harmful ways in which disability is understood.

What is perhaps comparatively less obvious is a potential clash between the interests of the future children and the interests of the parents. Specifically, I am referring to a potential clash between the interests of the future child and women's reproductive freedoms. What becomes apparent is what Oliver (K. Oliver, 2010) accurately describes as the "shocking" lack of engagement the biomedical cognitive enhancement literature shows with any kind of feminist discourse on reproductive rights.

This lack of engagement is indicated in the broad use of the terms "parents" or "procreators" within the literature of procreative beneficence even though the overwhelming majority of people who will actually be pregnant are women.[34] More so, there is very little engagement with literature on the experience of pregnancy. Oliver (K. Oliver, 2010), explicitly criticizing biomedical enhancement by engaging with Harris and Habermas, explains that the way they discuss the process of becoming pregnant misrecognizes the relation between chance and choice. She explains that the process is much more nuanced as there is no certainty in pregnancy. One can consciously decide to try to become pregnant, but the result cannot be guaranteed in the way that this juxtaposition between chance and choice in the literature implies. Not only that but even an achieved pregnancy is not always reflective of choice as not all pregnancies are chosen.

This perceived control over the outcome of a pregnancy relates to concerns I previously discussed about how procreative beneficence renders pregnant bodies as sites of risks. Procreative beneficence asserts that failure to manage one's health and one's pregnancy risks the future health and prospect of the fetus. However it simultaneously lacks the tools to articulate how the burdens of this risk-management

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[34] Whenever I use pregnant people or pregnant bodies it is to recognise that not everyone who can get pregnant identifies as a woman.

process disproportionately falls on women, despite the constant references on “procreators or parents” (Hall, 2016).

What the procreative beneficence literature seems to do is to co-opt the discourse of reproductive rights and instead of applying such tools to engage in depth with relevant concerns, it utilizes them to promote ableist accounts of which fetuses should be chosen. Such an example can be seen in Hughes (2004). He seems to be critical of feminist approaches dictating that women should be suspicious of using reproductive or germinal choice technology as such practices are inherently operating under a patriarchal framework inducing false consciousness. Hughes (2004) explains that such thinking can lead to an increasingly paternalistic undermining of reproductive rights. He suggests that in the same way that women are trusted to actualize any other of their reproductive rights from abortion and embryo selection to selecting an appropriate biological father for their offspring, they should also be trusted to utilize any new technological means in a way that promotes their decision- making capacities.[35]

For Hughes, although there may be some legitimate room for discussion regarding whether there should be any limits to what traits parents could elect for their children, it is important for any free state to protect parental autonomy (Hughes, 2004, p.141). He continues to explain that legal prohibition against selecting particular traits or fetuses should not be considered with the possible exception of parents wanted to limit their child’s abilities such as their intelligence or their hearing. In doing so, he clearly shows his endorsement of certain traits and lives over others. However, overall he claims that it might be better if other means are applied to encourage parents choosing the right kind of traits for their children: “Or since we permit women to smoke and drink during pregnancy, we may even decide to allow parents complete procreative liberty and germinal choice, and only try to dissuade them from bad choices with public shaming and education” (Hughes, 2004, p141).

Again, we see here how procreative beneficence and biomedical enhancement in general promote a particular understanding of what a good life is, a life unburdened by the limitations of disability. Hughes seems to espouse the ideals of autonomous

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[35] It is worth pointing out that in many cases women are in fact not trusted to actualise their reproductive rights as access to safe abortions or contraception is denied.

choice making and control as signals of a worthwhile lives. As such, he advocates for a procreative beneficence that would preclude selecting for deaf children, as the case I previously discussed, and that perpetuates ableist prejudice against disabled people. Moreover, Hughes clearly seems to recognize how dominant social norms are coercive and can "publicly shame" pregnant people into adopting a specific behavior. They can be applied instead of legal prohibitions to guide parents in promoting the traits that are considered worthy of preservation in future generations. This public shaming arguably could undermine their autonomy just as much the prohibitions that paternalistic feminists seek. However, in this case, Hughes seems willing to capitalize on social norms that discipline and coerce pregnant people in adopting certain behaviors to the extent that they are desirable.

An additional consideration would be if disability rights could clash with women's reproductive rights and particularly with their right to prenatal testing and abortion. As I briefly mentioned in a previous section, there are various reasons for which pregnant people decide to terminate their pregnancies. Even without explicitly endorsing a procreative beneficence principle, pregnant people often choose to terminate pregnancies based on medical information on their fetus. This could be motivated by social conditions, prejudice or medical advice. The question at hand is whether promoting disability rights would entail limiting such options altogether.[36]

As I have already argued, there is no need to advocate for restricting women's reproductive rights to protect disability rights. Rather what seems to be necessary is for the decision-making process to be more reflective (Hall, 2016).[37] The right to an abortion does not need to uphold notions that perpetuate discrimination against

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[36] Although I maintain that there is no reason that disability justice should be incompatible with reproductive rights it is important to note that women advocating for reproductive rights have often historically exploited disability to promote their own goals. Carlson (2013) offers an insightful account of how female reformist in the USA adopted a eugenics narrative to further rights for reproductive control.

[37] Another interesting observation that Hall makes is that this articulation of an alleged inherent clash between women's reproductive rights and disability rights ignores the experiences and thoughts of women with disabilities or women of colour who have historically been the subject of forced sterilization. This though is not to say that there are no feminist accounts of the right to an abortion which indeed undermine disability rights ignore the needs of disabled women (Rohrer, 2005).

disabled people. Reproductive choices are determined by multiple factors. A first familiar consideration would be the social conditions in which these choices are made. A person's choice to terminate a pregnancy to avoid having a disabled child cannot be understood without an examination of the level of social support and the social conditions in which disabled people and their caregivers live.

Secondly, the way in which this knowledge of a trait of disability is communicated to prospective parents is in itself a determining factor. Decision-making does not take place in a vacuum but rather it is mediated by social norms and expectations that as Hughes (2004) acknowledges can coerce and shame into a particular action. Not only that but such decision-making can also be severely influenced by how medical authority is expressed as I will discuss later on. As Rohrer (2005) explains, the choice to continue or terminate a pregnancy is not taken abstractly. Rather it is driven from social norms- many of them coercive or unjust about what is beneficial for the future child- as well as vast social and financial inequality. This, for her, significantly undermines claims that choices relating to procreative beneficence accurately reflect parental autonomy. Rather parents are influenced by an entire discourse often expressed through medical experts proclaiming an objective, scientific authority over the best way of existing.

That being said, what I claim is problematic is the very framing of disability rights and women's reproductive rights as conflicting. The tendency to describe the rights and interests of oppressed groups as incompatible to each other or as incompatible to the interests of the broader population runs throughout the biomedical enhancement literature. Concerns over disabled people been a burden to non- disabled people shape how the discourse is formed. Savulescu (2014), in particular, explains that through procreative beneficence which would diminish the number of future disabled people, the available funds would be distributed amongst a smaller number of existing disabled people which would therefore enjoy a greater amount of resources. This more efficient distribution, for him, is an additional way in which procreative beneficence can benefit disabled people. However, I find that this account shares similar problems with his analysis (Savulescu, 2001b) over medical resources and people with Down syndrome. In his "Resources, Down's syndrome, and cardiac surgery: Do we really want "equality of access"?" paper, Savulescu explains that if there are enough medical resources then, of course, denying people with Down syndrome access to them is both wrong and cruel. Nonetheless, if recourses are in scarcity as is usually the case, then criteria about how much potential wellbeing a life can hold becomes relevant again.

This sums up ideas that I have explored throughout this chapter. Bioenhancement is conceptualized as a way through which one can increase their welfare by adapting to dominant social norms which see competition in the labor market as the optimum way for distribution and autonomy through increased choice and control as the optimum way of existence. Bodies who do not comply with these narratives, disabled bodies, come to represent a danger. They take up the space and resources that are deemed necessary for others to live well. A division is created between “us” without disabilities who run the risk of being disproportionately burdened by “them”, people with disabilities that threaten our shared resources. Biomedical cognitive enhancement is envisioned as a way for them- individually or via procreative beneficence- to take responsibility by disciplining into a mode of existence that will enable them to compete- like the rest of us- for resources via the labor market spearing us the extra burden. [38]

In the last paragraph of the article, Savulescu mentions as an afterthought that there can be other better alternatives to deal with the practice of transplants, such as increasing the overall budget allocated to healthcare or cultivating a different approach to organ donation. The fact that this is not in the centre of the analysis is for me another indication of biomedical enhancement literature refusing to explore the structural basis of the problems it aims to solve. It is also indicative of the literature claiming that it considers social changes alongside biomedical enhancement but not actually following through. A proposal that suggests we need criteria such as how much wellbeing a life can hold to decide who gets to live in conditions of scarce resources should reflect what makes such resources scarce to start with.[39]

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[38] I will return to this point in my third chapter.

[39] A similar issue can be found in the minority model of disability as Hall (2016) or Rohrer (2005) describe it. This model entails disabled people being in direct charge of their welfare support. In doing so they are responsible for hiring their caregivers. This can have a significant advantage as it could give people with disability a greater control and power over their lives. However it could also place disabled people in a position in which their financial interests clash with the financial interests of their caregivers placing them on opposite camps. This alleged conflict however needs to be understood through a broader lens that examines overall the recourses allocated to

A final concern I have relates to the role of medical and other personnel in communicating the procedures and implications of procreative beneficence to potential parents, or the implications of biomedical cognitive enhancement to whoever would decide to undergo the process. The prospect of bioenhancement has generated a variety of responses regarding the role medical experts should assume within the enhancement enterprise as I briefly discussed in the case of Ashley X.

Chatterjee (2004) explains that given all the new possibilities that biomedical cognitive enhancement could offer, it may be unwise for people to be left alone with the burden of increased choice. People wishing to undergo cognitive bioenhancement might be unsure on how exactly to proceed, especially if they are unclear about their desired goals. One possible solution therefore would be to re-envision at least partially the role of relevant experts such as neurologists as life consultants. Nagel (2010) expresses a similar view when discussing this concern. He concludes that individuals will need assistance in actualizing their autonomy. The role of the medical expert therefore should be to share their opinion and collaborate with their clients-patients in order to reach together the solution that best serves the latter's interests. The medical expert should not simply lay out all possible options but needs to actively and clearly bring in their view. This is a concern often neglected amongst a literature which places an overwhelming significance to increasing available options for people, even if there is not clear indication that increased options also increase wellbeing.

Goffette (2015) talks about moving from an understanding of enhancement that is based on medicine to what he calls anthropotechnics. This would present a complete break from any reference to disease and rather focus on what would be perceived as a client's request. The role of the enhancement expert therefore would be to sit with the client and explain to them the possible risks and dangers and discuss the best way for them to achieve their desired outcome. This would also involve an in-depth conversation aiming to unveil the reasons behind someone wanting a particular procedure in the first place as well as time to reflect on their decision. The final decision in any case would belong to the clients.

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welfare support as such and in relation to other services and sectors. Part of this examination would include reflecting on how the de-evaluation of disabled bodies leads to the de- evaluation of caregivers work (Hall 2016)

On the one hand, I agree that biomedical cognitive enhancement would indeed place extra burden and responsibilities whilst increasing the possible goals one can pursuit. However, any increase in the responsibilities assumed by medical staff needs to be carefully considered. Nagel (2010) and Chatterjee (20004) admit that medical experts have no vantage viewpoint in asserting what constitutes wellbeing. However, as I have tried to show, the entire biomedical cognitive enhancement seems to be doing precisely that. By associating on the one hand increased cognitive abilities to increased wellbeing and disability with risk and diminished welfare on the other, the enhancement enterprise extends medical authority from the field of restoring health to what constitutes a good life.

As Hall (2013) explains, this shares similarities to the construction of the abnormal subject as Foucault explains in his work “Abnormal” (2003). In this volume, he explores how psychiatrists were called to testify in French courts between 1955-1974 explaining if defendants were capable of being responsible for the actions they were accused. Their testimony served in describing certain traits which, even if not illegal in themselves, deemed the defendant as capable or expected to be guilty of the alleged crime. These testimonies often served as a basis for the defendant to be released from custody, condemned, or even executed. Through this work Foucault shows how psychiatrists from experts in a very specific field were placed in a position of authority for which they were not qualified, with no specific process to challenge their authority and whose authority reached on life and death.

In the bioenhancement literature, enhanced cognitive abilities become a marker of wellbeing whereas, a trait of disability becomes a marker of limited wellbeing. Limited wellbeing is then treated as an expected and natural feature of life with disabilities. As the lives of disabled people are then bound to include less wellbeing, they are consequently understood as less worthwhile than non-disabled lives. Within procreative beneficence, the trait of disability which is marked by a medical authority based on a statistical analysis becomes a trait that can prevent a fetus from being born. This medical authority therefore has now assumed a role of deciding over life or death.

Chapter three: Posthumans

In the first chapter, I discussed the prospect of biomedical cognitive enhancement. I focused on its desirability as well as potential objections. I discribed potential threats identified within the biomedical enhancement literature such as concerns over cheating, altering the nature of activities, undermining the grounds of praiseworthiness, raising issues of distributive justice, allowing coercion, providing quick fixes, and undermining authenticity. I then proceeded to discuss the desirability of biomedical cognitive enhancement. Namely I explored how the biomedical enhancement project relies on a specific understanding of what constitutes a good life and is desirable to the extent that it increases wellbeing. My aim was to show that the current discussion on potential objections does not anticipate and address the issues regarding inequality and discrimination that are inherent in biomedical enhancement as is currently described. That is because what makes biomedical cognitive enhancement desirable is that it extends and facilitates a particular understanding of autonomy as control and unlimited choice. This ideal of autonomy becomes a criterion of a good life and by extension of which lives have value.

In the second chapter, I discussed how disability can illuminate the different ways in which a pursuit of autonomy as advocated for within bioenhancement literature, can be problematic. I focused firstly on how enhancement and disability can be understood in terms of both departure form typical species functioning and wellbeing. Secondly, I explained how disability questions the intuition that certain physiological traits are inherently bad and most importantly, how it challenges the idea that the desirability, limitations, and impact of such physiological individual traits can be assessed separately from their social environment. I argued that, although within disability studies there is an emergence of models that emphasize problems in medicalizing disability and portraying it as an individual matter, biomedical enhancement discourses currently lack these equivalent conceptual tools.

Having therefore fleshed out what I think are ways in which inequalities and discrimination can manifest themselves within the bioenhancement enterprise, I will dedicate this final chapter to a keyway through which bioenhancement advocates attempt to address inequality and discrimination, namely the question of moral status. Bioethicists have had a long interest in questions of moral status, which often is expresses through questions in relation to fetuses, gene therapy, cloning, or even human and animal chimeras. Within the biomedical enhancement literature, the issue is raised in relation to the possibility of posthumans. That is to say that within the bioenhancement literature, a big concern in terms of equality relates to the possibility of enhancing humans to an extent that they become something different to us, potentially a distinct species. This possibility of posthumans has raised two questions. Firstly, whether it is possible to have beings- posthumans- who have a higher moral status than us, mere humans. Secondly, what impact would this have on humans were such beings to exist.

Although I will critically engage with this literature, my main purpose is not to directly respond to either of these two questions. This is because the point I want to argue is that regardless of whether the possibility of posthumans with a higher moral status is conceptually coherent, the current discourse surrounding them is, in itself, harmful to disabled people. This can be seen in two ways. Firstly, the bioenhancement literature upholds the problematic and ableist notion that moral status needs to be justified through individual capacities. Secondly, the discourse on the possibility of posthumanism propagates problematic assumptions I have examined in the previous chapters about which lives matter and as such devalues disabled people and animals who deviate from what is considered to be a valuable existence.

To advocate for the above I will start with a discussion of moral status within animal ethics. This is for two reasons. Firstly, I aim to show how posthumanism and bioenhancement are presented as a cure for disability and animality that are seen as representing a less valuable existence. Secondly, it will allow me to offer a concluding analysis of how biomedical enhancement philosophically exploits disability in a comparable way to how animal rights advocacy has done and what space does this allow for future allyships.

3.1 Animal Ethics and Moral Status

Humans are thought of as having moral status. This is a way of explaining that human lives matter for their own sake and that consequentially harming a human is bad for the human herself. This idea of human moral status often positions us hierarchically higher than non-human animals. Animals, unlike inanimate objects are still broadly considered as worthy of moral consideration by virtue of being sentient. However, we consider them to have a lower moral status than us which is why we often feel entitled to disregard their interests especially when they clash with our own. We kill and eat animals, experiment on them, hunt them for sport and use them to promote our wellbeing in a way that it would be morally impermissible to do to other humans. What exactly grounds our moral superiority, if anything, over animals though has been a point of contestation. As has the scope of responsibilities we have towards animals or even whether animals are beings towards which one can have moral duties or obligations.

In this section, I will offer a brief account of three dominant ways in which moral status is discussed in animal ethics: species membership, a respect- based framework and an interest -based framework. My aim is not to provide a full literature review of animal ethics. Rather I focus on these three ways of understanding moral status, firstly because they are key in how moral status is discussed within the biomedical enhancement literature, and secondly, because the way moral status discussed in animal ethics in relation to disability can provide useful conceptual tools in how moral status in relation to disability is discussed in biomedical enhancement.

3.1.1 Speciesism

The first and perhaps most intuitive reason why we think all humans have equal moral status is because precisely we are all humans and members of the same species. As such there is a degree to which, we take it, it is natural to have extended obligations towards other humans that we do not necessarily have towards other animals or even to favor our own species and those who belong to it over other species. Although such beliefs can be traced back to religious roots, there are numerous arguments from a secular perspective advocating for preferential treatment to members of our own biological group.

Some maintain that favoring our own species and, in this process, often using other species to promote our own interests, is something that we naturally do. It is part of our human evolution and an important part of our survival. Favoring our own even at the expense of others is a typical species characteristic for us (Gruen, 2011).

Scholars like Williams (2009), whose account seems to be regarded as the most eloquent defense of speciesism, argue that asserting human priority is not tantamount to claiming that our species is more important from a neutral, cosmic standpoint which would be a much more contestable claim. Rather speciesism seems to indicate simply that there is no alternative viewpoint available for us to adopt than one which centres our own interests and understanding of the world (Savulescu 2010, Singer 2015). Moreover, even if we could adopt a cross species, neutral view of an Ideal Observer capable of taking into account any and all viewpoints and interests, it is doubtful whether it would be beneficial to us. At best, it would most likely make it impossible for humans to maintain our sanity as there needs to be a limit to the scope of our moral consideration and responsibilities (Savulescu 2010) given that each of us has a finite amount of time and resources in our disposal. The scope of our moral responsibilities has to allow us to focus on our "ground projects", that is to say on relations and goals we value.

At worst, Williams invites us to imagine that we are visited by a race of benevolent aliens whose cognitive and moral attributes far supersede our own. Whilst they treat us fairly and compassionately, they eventually reach the conclusion that our species is too far gone. We are incorrigible and cannot be trusted to refrain from injustice and cruelty both towards other species and towards our own. It would be better for everyone if our species were to become extinct. For Williams, the question we need to answer is which side would we be on.

Even without the threat of aliens, there is something attractive about an account that we owe other humans unique moral considerations, especially about an account that can support moral equality without any additional prerequisites, and, as such, can offer protection to groups who have previously been marginalized and excluded. Nonetheless, there have been various objections against speciesism. Some cast doubts on speciesism being an accurate description of human evolution and relations. Not only because the very concept of species is ambiguous but also due to preferential treatment often being extended on the basis of kinship or group rather than species as a whole or even being extended across species (Gruen, 2011; Rachels, 2012). Moreover, as Gruen (2011) explains, even if speciesism was an accurate description of human history and evolution this does not entail that it should serve as a normative basis for ethical behaviour. There are many things that can give groups an evolutionary advantage such as killing members of other groups and there is no shortage of historical examples of violence, death and even genocides. The fact that such practices are part of human history or even part of species behaviour cannot ground, however, moral reasons for continuing such practices.

The objection though that I want to focus on as the most relevant for animal ethics, disability studies and biomedical enhancement, is that speciesism constitutes a form of arbitrary discrimination against non-human animals. Peter Singer (2001) is one of the scholars that brought the term speciesism in the spotlight whilst advocating for animal welfare by relating it to other forms of discrimination such as racism or sexism. The claim is that we use species membership as a criterion to differentiate who is in our group and therefore deserving of moral consideration and who is out of our group and therefore does not deserve such protection extended to them. For Singer (2001, 2010, 2015) as well as McMahan (2002, 2009), DeGrazia (2011) and Savulescu (2010), this is problematic because similarly to race and gender, species membership is simply arbitrary. As such, it cannot be a relevant criterion for moral consideration and by extension constitutes a form of discrimination.

These authors have claimed that a bias towards our species merely indicates a conceptual confusion on our behalf. What we in fact value and deem worthy of moral protection is not biological species membership but rather personhood. That is to say, what we actually value are traits such as self- awareness, complex cognitive processes, mutual accountability, the capacity to formulate goals, future interests, and engagement in social relations. Such traits indicate that someone is a person and that by extension they deserve a high degree of moral consideration or moral status. However, it is wrong to claim that the categories of person and human completely overlap. From intelligent Aliens to Great Apes and the cognitively disabled, scholars claim we have reasons to extend or restrict personhood independently of membership in the human species. I will come back to this point in more depth later on.

3.1.2 A respect view of moral status

A second account of why humans matter more, which heavily relies on Kantian ethics, stipulates that what justifies higher moral consideration to humans is not necessarily that we belong in the same species but rather that our species has unique capacities that no other species shows (Gruen, 2011; Korsgaard, 2018). Advocates of this framework do not of course necessarily deny that non-human animals or anyone lacking such capacities does not have moral value. Animals may still be entitled of certain protections against wanton cruelty. However, humans possessing these relevant capacities are placed over a threshold and as such are more important, valuable and most importantly inviolable. Unlike animals that we can use in ways that promote our own interests or even kill, humans are owed a respect that prohibits similar treatment, and our interests outweigh those of animals.

There have been competing accounts of what precisely is an indication of such unique properties. The use of tools was one possible account until a plethora of animals- chimps, crows, dolphins- were observed to use tools to access food. The use of tools was then replaced by the use of tool kits. This also did not hold up to scrutiny as animal species were documented using toolkits- usually a combination of different sticks and rocks to reach food or even hunt in the case of Chimps. Toolkit use in animals has not only been observed but can also delineate cultural variations for example amongst chimpanzees, whilst crows will carry tools for a long period of time anticipating their future use.

Another capacity invoked as a sing of human uniqueness is our use of language. Humans were thought unique in our use and command of language and any attempt to teach other species such skills was deemed non-sensical. However, this assumption was also challenged with the first successful attempts of teaching human languages to Great Apes as I have previously mentioned. These efforts were not successful from the start. Although the chimpanzees in respective research were showing an understanding of human languages, they were unable to produce but very few spoken words themselves. Eventually it became clear that chimpanzees, due to their anatomical differences, are unable to produce sounds in the same way we do. This generated research in teaching chimpanzees American Sign Language (ASL) as chimpanzees are a gestural species. During such research it became clear that chimpanzees could learn to successfully communicate in ASL and to teach each other without human intervention. As chimpanzees seem to achieve communication via sign language their achievements were discredited and the new threshold for language speaking and understanding became grammar comprehension. Eventually specific tests were designed indicating that chimpanzees can understand grammar structure in terms of subject-object-verbs and that they have not simply learned to react in the appropriate ways to get food rewards.[40]

A third potential candidate for human uniqueness is our capacity of a theory of mind. That is to say, we are unique in our capacity to understand oneself as being separate to others whilst also understanding others as having their own distinct thoughts, motives and behaviors. Again though, research showed that chimps showed such capacities in identifying humans attempting to resolve a problem, figuring out a way of resolving the problem themselves and then deciding to help the humans depending on whether they liked them. That seems to suggest that chimps were able to understand humans as distinct beings who have a goal of resolving an issue and who do not have the adequate tools to solve it. The conclusion seemed to be that although to a much lesser in degree, chimps seem to possess some traits to indicate a theory of mind.[41]

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[40] Such tests for example were performed by researchers Ann and David Premack to a chimp named Sara. Sara would use magnetic symbols to communicate for example by selecting the “symbols” for apple and “want” to indicate she would like one. When researcher would change the symbols to say Sarah should give an apple to another chimp, Sara would rearrange them to indicate that *she wants* the apple, she does not want to give the apple to someone else. (Premack & Premack 1984, p.123- 26; Savage-Rumbaugh et al., 1998 in Gruen 2011, p. 12). There has of course been extensive doubting as to such whether chimpanzees can actually grasp a language or if they simply indicate an automatic response to specific cues.

[41] One well cited example is that of Kuni, a female bonobo who found an unconscious bird in her enclosure. She picked it up and climbed to the highest tree. She held on the tree with her legs so that she could use both arms. She then unfolded its wings and attempted to through the bird as high as possible in what would be appropriate for

It is also well-established that multiple animals- elephants, rats, fruit bats, dogs- act in a way that could indicate ethical behavior. This is to say that various species consistently show behaviors of protecting more vulnerable members of their community, such as the elderly or disabled, helping animals of a different species, or sharing resources (Bekoff 2013). One well -known study case has shown capuchin monkeys reacting negatively when they receive different rewards for performing the same tasks (de Waal 2010). Capuchin monkeys were handed a token which they were asked to return. In doing so, they received a reward consisting of either a highly prized grape or a less desirable cucumber. Capuchins would react negatively if they were presented with a lesser reward- the cucumber- than another capuchin for completing the same task. They would stop participating or even through the token away. Their reaction was even stronger if another capuchin received a reward without being asked to perform any task at all. This behaviour persisted even with a Food Control Test in which a grape was visible but not given as a higher reward to another monkey. This was to eliminate the possibly that the capuchin's negative reactions where related to the presence or visibility of grapes. The conclusion was that a capuchin would only react negatively if a grape was actually given to a different capuchin as a reward for a task for which she was given a cucumber. There is of course no indication that this should be interpreted as the capuchin's having a broader expectation as to how one-

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a bird (De Waal, 2010, p.66-67). This could plausibly indicate that she recognized the bird needed help, recognized it was different to her and different to her own species and attempted to help it in what she had observed was the appropriate way for a bird.

Another interesting behaviour that Great Apes exhibit is that of consolation. Unlike reconciliation after a fight between group members, consolation is offered by bystanders through putting an arm around the distressed chimp. What is different is that this behaviour does not seem linked to a broader attempt to restore balance in the group as it can be witnessed irrespectively of how disruptive the fight was. It also seems that the bystander chimps would receive no negative consequences by not engaging in this behaviour. This behaviour as de Waal explains so far has only been observed in Great Apes. One possible explanation is that it requires a higher degree of self -awareness to understand someone else as having a distinct emotional state and what caused it. However reasons for this behavior are still unclear (de Waal, 2010, p.68-70) any capuchin- should be treated in general. It could plausibly indicate though that they have expectations about how they should be treated in the specific occasions.

My aim here is not to deny that there is a vast difference in capacities typically found in humans and those found in other animals. Rather, much more modestly I claim that there is still a lot that we do not know about animal minds that would allow us to make confident assessments about whether such differences are of degree or of kind. Moreover, it is interesting to note some issues with the way discussions on animal capacities take place.

Firstly, studies on human exceptionalism come with a certain bias that needs to be corrected. One way in which this bias is embedded in the idea of human exceptionalism is precisely the constant moving of the goalpost from tools to toolsets and from language to a grasp of complex grammar. This indicates that human exceptionalism instead of being treated as a thesis one is tasked to prove is assumed as the starting premise. This means that instead of asserting a relevant criterion and then assessing how species fare, the validity and relevance of the criterion is determined by whether it can successfully support human exceptionalism.

When tool use become widely observed in a variety of animal species and in chimps in particular already back in 1960 the realization seem to come that as anthropologist Luis Leaky explained “Now we will have to redefine tool, redefine man or accept the chimpanzee as man” (Taylor, 2017, p.75). As the literature suggests, we tried the first option by defining tool as toolkit and then we tried the second option by moving away from homo faber to humans as autonomous rational beings.

The other thing that we must be mindful of is the epistemic limitations we have in assessing animal minds. One example of such epistemic issues is the mirror test, originally designed for human children, which has been used to determine if an animal can recognize itself. An animal is put in front of a mirror and a colorful spot is placed on a location on her body only visible though the mirror. The test is to see if the animals would try to remove the spot indicating that they recognize themselves. However, we now know that the reliability of this test is limited and that even if an animal is not trying to rid herself of the colorful spot, this does not necessarily indicate that she does not recognize herself. For example, it was observed that gorillas will refrain from removing the spot in public as they are shy and dislike eye contact. Some animals simply do not favor eyesight and others do not react by attempting to remove the mark. As the head of the Golden Triangle Asian Elephant Foundation in Thailand, Joshua Plotkin explains "the mark test can be difficult to apply across species because it assumes a particular animal would be interested in something weird on their body. Primates are interesting in such things-we're groomers. But elephants are different. They are huge and they are used to putting things on, not taking things of their bodies like mud or dirt" (Taylor, 2017, p.78).

Aside from any potential limitations in our understanding of animal minds, an additional issue concerns the way our empirical observations are interpreted**.** One way in which this problem manifests itself is through the question of anthropomorphizing animal behaviors and traits. For example, if a fish is thrashing in a net, I understand this to indicate pain as the fish is asphyxiating. Or when I hear about cows that jumped out from the moving truck taking them to the slaughter- house or running behind a truck carrying their calves away I interpret this is a clear sign of distress, anxiety and a desire to stay alive. That is to say, when animals exhibit certain behaviors, one can interpret them through their similarities to our own behaviors.

This however is often accused of being unscientific. The claim is that if I interpret the cow running behind the truck that is taking her calf away as a sign of distress over her losing her child, I am simply projecting my own human understandings on the cow. In fact what I am witnessing is some brief distress as part of an instinctive evolutionary reaction as a cow does not experience the same emotions that I, a being with higher cognitive and emotional capacities, would.

Although this criticism can certainly have its place, I take it to be somewhat problematic in two ways. Firstly, the issue with accusing such interpretations of anthropomorphism is intelligible only within a framework of human exceptionalism. It assumes that there is an unbridged divide between species, an evolutionary jump that make us too radically different to other animals for any meaningful commonalities in our behaviors. As Bekoff explains though, with what we know about evolutionary continuity, accusations of anthropomorphism disregard the complex emotional lives that we have observed animals to have (Bekoff, 2013, p.26). This does not mean that we should not be mindful of not projecting our own experiences and capacities when trying to understand animal lives. It simply means that the accusation of anthropomorphisms is often based on a premise of human exceptionalism that is, as I have discussed, objectionable. Therefore, as Bekoff concludes, anthropomorphism is not inherently unscientific and if anything, such criticisms can often prevent us from correctly interpreting animal behavior.

Moreover, a second problem with accusations of anthropomorphism, on which I will expand later on, is that the very criteria of what traits make a being worthy of moral status are anthropocentric. As Taylor (2017) explains, this is a catch 22 for animals. One the one hand, we are willing to acknowledge them as morally significant only to the extent that they resemble us. On the other hand, whenever they do remind us of ourselves we disregard any such similarities as reflecting anthropomorphism.

Having seen the above, I would argue that a respect -based threshold concept of moral status is unconvincing. This is firstly on account of the limited knowledge we have of animal minds. Threshold concepts of moral status rely on us having an accurate understanding of other species capacities, the extent of which is contestable. As Berube aptly puts it “There hasn’t been a discovery at any point in the last five hundred years after which we said to ourselves, ‘my goodness animals are stupider than we thought’ every single discovery has gone in the opposite direction” (Taylor, 2017, p.78).

Most importantly though, aside from any skepticism about a threshold concept being empirically unverifiable, I remain skeptical towards such a framework because of its arbitrariness. Let us say that humans have a particular set of cognitive capacities for example the capacity to give moral reasons for our actions and act autonomously as the Kantian tradition dictates. We can also assume that these are unique not merely in terms of degree but of kind. The assertion that these capacities somehow entitle us to a particular kind of moral priority still seems to entail quite a leap. As Rachel points out there is an unpersuasiveness in treating whichever set of capacities as “ethical super-qualities that entitle the bearer to every possible kind of favorable treatment” (2012, p.167). Having these complex cognitive capacities is simply irrelevant to a plethora of harms and interests that one can experience. What makes it bad for someone to hit me is not that I have the capacity to act autonomously, rather it is that I have the capacity to feel pain, a capacity which I share with many other beings regardless of their ability for complex practical reasoning. Threshold concepts of moral status do not seem sensitive enough to these differentiations.

Moreover, I am happy to grant that humans perform certain tasks in a unique way or to a unique degree. This though could plausibly be said for any species. Humans do not reason in the same way as great apes. They also do not have the strength of great apes, do not groom each other like chimps, and do not use sonar sounds like dolphins. Asserting that a species has unique capacities will often end up being at least trivially true. There needs to be an additional explanatory framework as to why these uniquely human capacities are important for making such normative claims regarding moral status across species.

Finally, one can see how a threshold concept of moral status based on some cognitive properties would be hostile towards disabled people. Even if cognitive capacities are relevant to moral status, which I will argue that they should not be, disabled people have a history of their capacities being underappreciated and ignored. Similar epistemic limitations or biases that run through our understanding of animal minds also have been seen to limit our understanding of people with cognitive disabilities.

For example, disabled people, and especially cognitively disabled people are often excluded and have their capacities and needs questioned by being held against a goalpost that is constantly moving. Singer, for example, explains that to have a child with Down syndrome might be a positive experience for some, but overall it will be drastically different than having a non-disabled child from which one can expect "to play the guitar, to develop an appreciation for science fiction, to learn a foreign language or to chat about the latest Woody Allen movie" (Taylor, 2017, p.72). This though, as Berube explains, represents a constant moving of the goalposts of what is a marker of a good life and if such markers can be achieved by cognitively disabled people: "I note that in the 1920 we were told that people with Down syndrome were incapable of learning to speak; in the 1970s, we were told that people with Down syndrome were incapable of learning how to read. Ok, so now the rational for seeing these people as somewhat less than human is their likely comprehension of Woody Allen films. Twenty years from now we 'll be hearing 'sure, they get Woody Allen but only his early comedies-they completely fail to appreciate the breakthrough of Interiors'. Surely you understand my sense that the goalposts are been moved here in a rather arbitrary fashion" (Taylor, 2017, p.73) This indicates precisely a vicious circle where disabled people are assumed incapable of certain activities, behaviors or developing their capacities. Therefore, they are often excluded from any such opportunities of developing them (Stubblefield, 2010)

Moreover, relating to moving goalposts, another example of epistemic limitations that transcends animal ethics and extends to disability are problematic measurements of intelligence particularly given the racist history in which such practices have been embedded. Tests developed to measure intelligence were, and may still be, often heavily biased against women, people of colour or the poor. Aside from reflecting any direct problematic attitudes, such biases could be reflected within the very selection of the criteria of intelligence. That is to say, criteria of intelligence were considered valid if they produce expected results. The racialized history of measuring intellect provides ample examples of such unscientific practices where criteria were considered valid only if they affirmed the presumption of white intellectual supremacy, as was the case with skull measuring based on the following reasoning: "White people are more intelligent than black people. Therefore, to determine if brain size is an accurate measure of intelligence, one must evaluate how white subjects and black subjects compare using this method of measurement. If black people turn out to have larger brains, this must not be an accurate measure of intelligence, because if it were, then black people must be more intelligent than white people. Because we know that black people are not more intelligent than white people, this shows that the measurement technique is inaccurate (Gould 1981, 84–85)." (Stubblefield, 2010, p.304)

Moreover, the capacity of cognitively disabled people to communicate can be further limited by an inability on behalf of non-disabled people to interpret non -verbal or non -typical communication. This is something I briefly discussed in the previous chapter in relation to epistemic injustice and in relation to Ashley X's case. There are two interlocking potential problems. On the one hand, non -verbal communication is often non recognized as such or placed hierarchically lower than oral communication which for example can be seen in the history of devaluing sing language. On the other hand, it is often difficult to assess what causes limitation in communication particularly in relation to people with both cognitive and other- for example motor- disabilities. [42]

It is important to note that in underlying the similarities between failing to appreciate and acknowledge capacities in animals and in disabled people, my aim is not to compare these groups. As I will be arguing extensively, such comparisons in which moral consideration towards disabled people is linked to moral consideration towards animals are deeply problematic and show an ahistorical engagement with disability. However, tracing similarities in how animality and disability are understood as a juxtaposition to the rational individual can provide useful tools in challenging such presumptions and ableist ideas entrenched in the bioenhancement project.

Finally, as I will elaborate more later, this threshold concept of moral status which is awarded based on certain complex cognitive capacities, might not exclude all nonhuman animals and will certainly not include all humans. That is to say, not all humans have such capacities. Infants, Alzheimer patients, people who have dementia and most importantly the cognitively disabled are in danger of being excluded from having moral status under this framework. Even if one expanded the threshold concept to include those with potential for these cognitive capacities or those who have had them in some point in their lives, this would still not include all those with congenital cognitive disabilities. As Gruen explains if one takes a Kantian inspired threshold of

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[42] This later concern is one that has caused a lot of controversy particularly through the case of Facilitated communication (FC). FC refers to non -verbal people using external aid for example in a form of a typewriter and a communication aid. The problem of this method related to concerns over the extent to which the communication produced reflects indeed the disabled users given the integral role of communication aides in this process. The most well-known case is Anna McDonald, an Australian woman born 1961 in who was non-verbal and diagnosed with a series of disabilities with the help of facilitated communication was granted a legal right to leave the institution she lived in. This type of FC sparked another controversy when philosophy professor Anne Stubblefield in 2015 was found guilty of sexually assaulting a cognitively disabled man. Stubblefield maintained that their relations where consensual, that the young man has full capacity to consent and that they are a couple. Such cases highlight the inherent difficulty such situations entail. On the one hand foreclosing the possibility of communication can as it has done, ignore the needs of disabled people. On the other hand, acknowledging methods of FC can open disabled people to abuse and exploitation.

moral status “then in all likelihood no other animals are ethical, and it may turn out that some humans aren’t either” (Gruen 2011, p.18)

3.1.3 An interest- based approach an alternative account

One alternative to the above-described respect-based respect view is an interest - based approach. Unlike moral status, which is conferred over a threshold, this framework proposes a gradient concept of moral consideration. That is to say, instead of selecting any specific trait which would bestow moral status, this usually utilitarian account proclaims that all sentient beings have degrees of moral consideration based on their interests and their capacities for conscious experiences. [43]

For advocates of this model like Singer, even if animals lack complex cognitive capacities associated to personhood, they still have interests because their life can go good or bad for them. They claim that it would be a poor excuse to exclude animal suffering from our moral considerations merely because they may lack the capacity to act autonomously in a Kantian sense or any other specific complex cognitive trait. As they are sentient beings with interests, these interests need to be taken into consideration. Physically harming therefore an animal can be comparable to physically harming a human to the extent that they both can experience pain. Singer, who advocates for a utilitarian approach does not exclude the possibility of harming animals. What it stipulates is that equal consideration needs to be given to comparable interests of both animals and humans alike.

Nonetheless, a scalar framework of moral status does not hold that killing an animal is as bad as killing a person. Similarly, to a threshold concept, human lives are placed hierarchically higher in the gradient. The principal difference is that the complex cognitive capacities that people exhibit do not in themselves arbitrarily grant persons a higher status as a threshold concept of moral status would. Rather because they

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[43] This is not inherently necessary. Buchanan as well, as Douglas notes, operates in a mixed framework recognising interests bellow his threshold of moral status whilst maintaining absolute inviolability above it.

have such cognitive and psychological capacities, a person can experience a greater scope of bad and good and therefore has more complex interests.

For Singer (2010) as well as McMahan a central feature that differentiates humans from animals and elevates human interests (2002, 2009) is that people are future oriented. That is to say, a person has a psychological continuity that allows her to project herself in the future and to form future plans. Therefore, killing a person frustrates not only her current but also her future interests. The main idea is that abruptly ending a person's life prevents them from realizing future goals and plans in a way that is not applicable to the killing of an animal.

This key idea underlying Singer's thought has significant implications for the protection that can be extended to animals. In particular, it shifts the focus to animal suffering rather than animal lives. Such views, also occasionally endorsed by those who advocate for ethical meat eating, limits moral consideration towards animals to efforts in minimizing their suffering. Factory farming, for example, is immoral because of the horrific conditions in which animals are kept. This though does not preclude the killing of an animal as long as it enjoyed a good life. Killing animals does not frustrate their future interests because they are not future oriented and therefore can be morally permissible as long as it is done painlessly. Aside from offering a very limited defense of animal lives, this is the point that renders this interest- based approach particularly problematic in terms of devaluing the lives of the cognitively disabled as I will describe extensively in a following section.

3.2 Moral status in bioenhancement

In the previous section, I started the discussion on moral status by exploring the moral significance that we recognize to other animals. In this section, I will discuss moral status within bioenhancement literature which again seems to be framed in the similar accounts of a respect -based threshold concept and an interest based gradient concept of moral consideration.

One of the reasons that scholars have argued against the prospect of bioenhancement and even more so against transhumanism, is its potential threat to equality. There are those, - commonly referred to as bioconservatives- who are against enhancement in principle and are not merely skeptical about some potential unwanted consequences or applications such as Kass (2003), Fukuyama (2003), Sandel (2007) and Annas (2000). Part of their trepidation reflects a concern that bioenhancement could undermine our common human essence that allows us to look besides trivial differences such as race or gender and to assert moral equality amongst all humans. The best way to preserve our species is to refrain from anything that could drastically alter the ways in which we can ground moral equality

Such concerns have not been taken lightly even amongst enthusiasts of bioenhancement like Savulescu (2010), Buchanan (2011, 2017), McMahan (2009, 2010) or Douglas (2011). Rather they have generated an ongoing discourse addressing two potential problems: Can post humans actually have a higher moral status and will this be harmful to mere humans? To address these questions, one needs to have a broader understanding of what is it that grants someone moral status. In this section, I will examine how the dominant frameworks of moral status that I discussed in relation to animal ethics are mirrored in the bioenhancement literature.

3.2.1 A threshold for post humans.

Buchanan (2011) offers a sophisticated account attempting to address these concerns by advocating a respect-based threshold concept of moral status echoing some of the key ideas I discussed in relation to animal ethics. He asserts that such concerns over a posthuman higher moral status stem from a confusion between potential *posthumans* and *post persons*. His claim seems to be that biomedical enhancement even in its most advanced or radical forms could potentially create the former but not the latter. Posthumans he claims, should not worry us because regardless of how significantly enhanced they are, they would still have the same moral status that we have, the moral status of persons.

This is because moral status, for Buchanan’s proposed framework, stems from us having certain capacities associated to personhood. Once one reaches the threshold of these capacities as we, mere humans have, then their different degrees in which capacities are held become morally irrelevant. This will hold even if posthumans have such extensive differences to us that they become a distinct species because moral status does not necessarily stem from biological species membership. Rather Buchanan claims, it stems from the capacities associated to personhood which are not limited by species.

Moreover, he explains that even if human rights, which bioconservatives are keen on protecting, are understood as stemming from biological species membership, we could plausibly encounter similar traits of our biology that justify human rights in other species. If, for example, we were to encounter aliens with similar properties such as the capacity for practical reasoning or being mutually accountable, we would still grant them the same status as we have. This is even if they are a completely different species. The aliens and we could potentially enjoy different rights to correlate to any distinct capacities or needs but this would not undermine human rights. (Buchanan, 2011, p.214; Hauskeller, 2014)

What would be a more improbable but also more serious threat Buchanan claims, would be the emergence of post persons. Post persons would precisely be a category of beings who -human or not- would justify a comparatively higher moral status based on capacities beyond what bestows personhood. This though, for Buchanan, seems to be conceptually far- fetched.

He explains that it is hard to imagine any categorically different capacities post-persons could have which would justify a higher moral status. As he is advocating for a threshold concept of moral status, Buchanan claims that it would not be enough if post-persons exhibited capacities such as practical reasoning or moral accountability which mere persons have simply to a higher degree than us. Rather they would have to show a different type of capacities altogether. It is not evident though what such capacities would be. Our inability to imagine what such a capacity might be is an indication that it simply cannot exist.

Nonetheless, in the interest of not conflating conceptual inconsistency with a limit of our imagination Buchanan entertains the possibility of post-persons with a higher moral status and investigates what would this entail for our status as mere humans[44] (2011, p.217). He concludes that even if such a scenario unfolded, this would still not undermine our own moral status as persons. Regardless of whatever capacities or moral status post persons have, we- mere persons- would still maintain our capacities for practical reason and mutual accountability and therefore our moral status and the inviolability it confers.

Buchanan considers inviolability to be an absolute notion that we have whereas animals for example do not. He explains that, of course, there might be extreme or emergency situations in which it is impossible to respect the inviolability of all people. However, in a future with post-persons even if in case of emergencies a mere human would need to be sacrificed for a greater good this tragic instance should not be equated to having lower status similarly as it does not when such tragedies happen now. Buchanan therefore concludes that post-persons would only be a threat if one were to abandon a threshold concept of moral status in favor of a scalar concept of moral consideration.

A similar conclusion that post-persons would not undermine human moral status is reached by Wilson (2007). Likewise to how Buchanan grounds his theory on the authority of a Kantian tradition in moral ethics, Wilson refers to Rawls. He asserts that regardless of whether post persons come to exist, humans will still have a sense of justice and a capacity to formulate conceptions of the good. These two threshold capacities are sufficient for moral status. Again, after having surpassed the threshold the degree in which one used them becomes inconsequential. Buchanan and Wilson therefore claim that a threshold concept of moral status is the best framework to encompass our basic intuitions and to safeguard us from the potential threat of beings with post-person moral status.

Even amongst scholars who might be favorable to threshold concepts such claims are not uncontroversial. Some argue that even if we adopt a threshold framework of moral status, it is not enough to safeguard us from the potential threat of post persons as a threshold concept of moral status can be compatible with a second, higher threshold. Douglas explains that a threshold framework of moral status does not preclude a

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[44] See Agar, 2013; Mihailov and Dragomir, 2018

higher post person moral status. An example could be a plateau where “there is a range of mental capacity within which all currently typical adult humans lie, but above which moral status rises either gradually or in steps” (Douglas, 2011, p.479). He explains that a plateau understanding of moral status would share the two main benefits of a threshold concept. Namely it accommodates firstly that humans have a higher moral status than non- person animals and secondly the intuition that all persons have equal moral status regardless of how well they use their capacities for practical reason or mutual accountability. Therefore, in principle, one could maintain a threshold concept of moral status and still allow for the possibility of a second threshold.

Agar alternatively talks about a weak and a strong threshold. A strong moral threshold is one above which any difference in the degree of capacities is inconsequential. A weak threshold on the other hand is one over which moderate discrepancy in degree make no difference but great differences in degree could. What Agar suggests is not necessarily that there are certain other capacities which convey moral status that we cannot imagine which post-humans might poses. Rather he claims the capacities that convey personhood to humans might not be strong threshold capacities. (Agar, 2013**;** Neiders, 2015)

Although it is, of course, not clear what a framework with multiple thresholds would look like, this could be as Douglas (2011a) speculates, precisely because we lack such capacities. McMahan (2015) who also claims that a second parallel threshold for supra persons cannot be ruled out, suggests that post humans might evolve to have such novel capacities in the same way that humans developed complex capacities such as practical reasoning or the use of language whilst our great ape ancestors did not. An example McMahan contemplates would be if post-humans had free will in a way unattainable to us or if they were able not merely to empathize with others but actually experience others’ mental and emotional states which would allow them to completely transform the landscape of political and legal institutions even making them incompatible to mere human ones.

As I mentioned, Buchanan does not explicitly deny this possibility, he simply considers it implausible as it is hard to imagine which a capacity that could justify a higher status. In his proposed framework of moral status, a threshold above which the degree of a capacity becomes morally irrelevant is also maximal as it relies on the authority of the Kantian tradition (Buchanan, 2011**,** p.220-225; Douglas, 2011, p.480).

However, I would argue that a lack of imagination is an insufficient reason to dismiss the possibility of a higher moral status. This is less because I share McMahan's optimism about the possibility of future technological interventions and more because I am skeptical towards the tradition of Kantian ethics that Buchanan or Wilson espouse. Presumably, Buchanan is confident that there can be no second threshold or that this current threshold delineating our moral status cannot be moved because there are independent reasons for placing it there. If though one does not subscribe to a Kantian moral theory, then the possibility of posthumans adding or changing thresholds of moral status becomes much more salient. For example, one can hold that there is no inherent, independent, plausible reason that only typically human capacities such as practical reason or mutual accountability should bestow moral status. Then this threshold concept merely serves as a useful explanatory tool because precisely it allows us to maintain human equal moral status. As Douglas notes "there is reason to be suspicious of the presupposition, made by respect-based accounts that capacities lacked by typical adult humans are irrelevant to moral status: it would be a surprising good fortune for humanity if the threshold for maximal moral status lay just below the level of mental capacity typical of ordinary adult humans" (2011, p.481). Posthumans could therefore potentially move it or add a second one to better describe their own species typical functioning or any capacities that they deem important.

Buchanan is aware of the dependance of his proposed framework on Kantian principles. He understandably explains that to assert any indisputable conclusions between a threshold and an interested based view he would have to resolve the philosophical disputes between Kantian ethics and utilitarianism. This demand would of course be too high.. However, what I think is a much more modest demand is to test whether the threshold understanding of moral status holds up to objections risen in animal ethics as I discussed in the previous section and most importantly how it can include the cognitively disabled as I will discuss in the next.

Finally, what is important to keep in mind is that Buchanan affirms a distinction between human and person reinforcing similar points that I discussed in the previous section in relation to speciesism. He explains that “we think it is perfectly plausible to say that humans (or at least those humans who are persons) have a distinct and higher moral status than say rats” (2011, p.217). Similarly, Wilson (2007, p.422) who, as I mentioned, adopts a Rawlsian criterion of being able to formulate ideas of the good and a sentiment of justice, explains that there are some humans that only marginally possess such powers. Given that some would want to include these marginal cases in the realm of moral equality, the criteria of personhood should be thought of as sufficient, not necessary.

As I will argue later on, unlike Singer and McMahan, Buchanan does not explicitly address the issue of cognitive disability. Nor is he making an explicit point in excluding cognitively disabled people. Nonetheless, given the deleterious consequences that follow from the cognitively disabled having their personhood denied by a threshold framework of moral status, it is of little comfort whether this reflects intention or indifference.

3.2.2 Higher posthuman interests

As was the case in animal ethics, on the opposing side of the threshold concept lies an interest- based framework of moral status. Mirroring the scalar concept of moral consideration espoused by Singer scholars, such as DeGrazia or Anas suggest that such a framework would be the most apt to address the issue of post-humans.

DeGrazia, one of the most vocal advocates of a scalar framework of moral consideration within the bioenhancement literature also casts doubts that species membership is a morally relevant criterion. Although, authors such as Annas, Andrews or Isasi (Annas et al., 2002) have voiced concerns that practices such as cloning or genetically altering humans will undermine human moral standing, DeGrazia explains that concerns regarding the implications of such practices on human moral status are misguided. This is precisely because he suggests these concerns indicate problematic presumptions such as moral worth being dependent on species membership (2007, p.313). He reiterates that it is misguided to refer to some biologically based human essence as the basis of moral consideration. Apart from relying on an implausibly clear taxonomy of species, such an account would also be “the height of bigotry” as it misunderstands that what merits moral consideration is personhood, not species membership.

DeGrazia claims that an interest-based approach could serve in recognizing a trans-species personhood whilst also accommodating the commonly held intuitions that harming persons is worse than harming non persons. This framework elucidates that both animals and humans have an interest to be alive. However, their interests are incomparable. An animal is alive and has an interest to not experience harm. A human is alive and shares the same interest in a harm free life. However, humans are also temporally self- aware. That means that death will harm a human, as it will frustrate her future plans, in a way that it cannot do to an animal. Consequentially, their comparative interests to stay alive are not the same. Therefore, human interests in staying alive carry a greater weight. Alternatively one could also argue that a human and an animal life are incomparable due to the difference of experiences they are capable of holding. Human lives can amount to a greater degree of good. Therefore, as death can harm humans more than animals, it is more wrong to kill a human because it is more wrong to do more harm than less. (DeGrazia, 2007; Horta, 2017)

DeGrazia (2007) describes these higher capacities that allow us to experience higher interests making our lives more valuable than others and which form the basis of our personhood as a cluster concept which can include different capacities such as autonomy, complex cognitive processes, linguistic abilities, complex social relations, agency etc. To be recognized as a person one needs to show a potential of sufficient degree of multiple relevant traits. Being a cluster concept, it can include, for example, young children who might be lacking moral agency at the moment and exclude rodents who might show a degree of problem solving but who lack other relevant traits. As this would be harder to apply to some humans such as anencephalic infants or people who have permanently lost the capacity for consciousness, DeGrazia opts to exclude them from this discussion in an attempt to focus on unproblematic, paradigmatic cases.

This framework will sound familiar, as it echoes Singer's and allows for a much different conclusion in relation to post-person moral status than the one outlined by the threshold concept. DeGrazia invites us to imagine a not so far future where posthumans represent a significant amount of the population and recognize themselves as a distinct species. They show astoundingly higher cognitive capacities such as being easily able to pick up a dozen of human languages or exhibit extraordinary memory. Most importantly though they are morally unbiased. They regard, even the best of humans, as commonly upholding irrational and self-serving prejudices we are incapable of noticing. Moreover, they are capable of making correct moral decisions assessing all relevant information in any kind of situation and they face no challenges in following through with their decisions.

For DeGrazia (2011a; 2011b), a threshold concept like the one Buchanan advocates cannot ensure we would have equal moral protection to post humans or post-persons. If such a group were to contemplate what moral status we, mere humans, deserve there is no immediately obvious reason to assume that we would be recognized as their equals. Post-humans can be as justified to award themselves a higher moral status as we, persons, have been in thinking that we have a higher moral status than animals (2011b**,** p.138). This can be either on the grounds that their different capacities might justify a higher status, or they can claim that humans were mistaken to have awarded themselves the status we have now.

DeGrazia argues in favor of a scalar framework of moral consideration based on interests that a being is capable of having similarly to what Singer has argued. What he seems to be claiming is that a gradient framework can better accommodate intuitions that animals should be better treated as moral consideration will be given on the basis of different capacities, circumstances and interests. In doing so it could also provide on a similar basis better protection to in the case of post humans. Our interests may be shaped on the same capacities that for Buchanan give us personhood and moral status. However, as there is no reason to believe that posthumans would continue to think human typical traits as signaling a threshold, a framework that bestows consideration based on interests would be more favorable to us.

3.2.3 Can a post- person status harm us?

Presumably the more salient question that stems from the above discussion is whether the emergence of post- persons will harm us. Overall, for most the answer seems to be that yes. Where posthumans- or what Buchanan understands as post-persons- to exist, the consensus seems to be that this would harm humans by making us les inviolable.

As I have discussed, under a scalar interest-based framework, posthumans would be placed hierarchically higher to the extent that their superior capacities allow them to experience greater interests. This would be the case even though humans would still have our current interests that grounds our current claims for moral consideration. Although, as I mentioned, DeGrazia claims this would be overall the best way to protect our interests for Buchanan it would irrevocably place us in in a more vulnerable position when posthuman and human interests clash (Buchanan, 2011)

Nonetheless, it is not clear if Buchanan's proposed threshold concept would be more effective in protecting human moral status. Agar's (2013) explains that there are different ways in which the emergence of posthumans can be harmful to humans. Unlike Fukuyama who had expressed concerns about posthumans attempting to directly dominate or enslave merely humans, Agar suggests that posthumans could treat humans in a manner appropriate to our moral status and this still would be harmful to us. To elucidate this possibility, he turns to McMahan and his discussion of supreme emergencies.

McMahan (2015) explains that we think of ourselves as having the highest moral status and as such, as being inviolable. Contrary to Buchanan's claim though that inviolability is an absolute term, McMahan explains that, when it comes to it, no one actually believes that human lives are completely inviolable no matter what the situation. Assuming there was an extreme enough emergency, we would agree that the lives of the many would outweigh the lives of the few. If there were an accident in a nuclear plant that threatened a nearby city, it would be morally permissible to sacrifice the lives a dozen workers or scientists trying to mediate this catastrophe in an attempt to save the city. The existence of posthumans could harm us by complicating our understanding of what constitutes an emergency and what cost or benefit could legitimize which kind of sacrifices. If, for example, a human life now could be sacrificed only to save a large number of other humans, it may become permissible to sacrifice a human to save a much smaller number of post humans (McMahan, 2015; Agar, 2013).

Agar expands this concern to argue that post humans might not only change what constitutes a supreme emergency but also legitimize human sacrifice, not only in cases of supreme emergencies but also in cases of supreme opportunities. Humans, for example, sacrifice beings with a lower moral status such as animals. This begaviour, however, is hardly limited to situations of supreme emergency or any kind of emergency as we routinely hurt and kill animals for sport or because we like how they taste. Agar, of course, is not suggesting that posthumans would kill humans for food, but he speculates that if the scientific benefits where high enough, it might be permissible for posthumans to conduct medical experiment on us that would benefit them in a similar way that we conduct experiments on primates.

Agar also suggests that although we do not have the ability to predict what any such cases would look like as we do not know what posthumans would be, we have reasons to think not only that the scope of permissible human sacrifice will be more extensive, but also that the compensation towards us will be inadequate. This is because he does not think humans will be enjoying benefits that their sacrifice would help create. He points out that we regularly perform medical experiments on animals. Nonetheless, we do not use these newly developed medical innovations to alleviate suffering of the animals themselves. In fact, there are moral reasons, he holds, pertaining to relevant moral status that we should not extend, for example, expensive Parkinson treatments to a resus monkey, especially prioritizing it over humans even though we were only able to create such a medical treatment by experimenting on resus monkeys.[45]

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[45] For DeGrazia though and a scalar understanding of moral status this is not inherently the case. A difference between posthumans and humans in terms of personhood would not necessarily justify them in conducting harmful medical experiment on us as we are not morally justified to conduct them on apes. De Grazia (2007) has argued that great apes should only be used in medical experiments under particular conditions as they are borderline persons (2007, p.322). Along with toddlers and the mentally disabled they reside in the gray area of personhood. As with the mentally disabled, he explains full personhood should not be necessary with full moral status. As such he concludes that experimentation on the should only be done if there is a minimum risk for them or if it were for medical gains that would benefit them directly.

Even Buchanan, who remains very skeptical about the possibility of post persons and of a higher moral status than what humans enjoy, currently anticipates potential harms. Although he does not frame it in terms of moral status, he addresses the potential changes posthumans would bring in political, social and economic frameworks. He contemplates the possibility of post humans and humans of an equal moral status operating in a two-tiered system of rights. He imagines two schemes of social cooperation running in parallel. One in which unenhanced humans, the simple cooperators participate and one in which posthumans, the advanced cooperators participate. These two tiers would correspond to our respective capacities. He imagines the advanced cooperators to have a degree of practical reasoning, empathy and emotional intelligence, which allows them to operate in ways inaccessible to us.

Buchanan notes that if enough mere humans become enhanced and therefore the population of the advanced cooperators increases significantly this could make their cooperative framework dominant (2011, p.228). He proclaims that this would effectively render us, mere humans, disabled as we would not be able to participate in the main sphere of social cooperation such as the mainstream economy and political processes. He makes an analogy of two groups, adults and three-year-olds wanting to play a card game but only having one deck of cards. The adults, to get the most enjoyment would like to play something challenging and appropriate to their capacities such as bridge. The three-year-olds naturally cannot participate and would be better suited in playing something like go-fish. Moreover, there is no reasonable accommodation that the adults can make which would allow the toddlers to play bridge. Buchanan explains, it is not a mere matter of giving them a higher chair to reach the table, it is a matter of them completely lacking the capacities. For the three-year olds to participate the adults would have to “dumb down” the dominant frame of cooperation decreasing their own benefits. This does not mean that mere persons should have their rights for political participation denied as there is no reason to limit political participation to the cognitively superior. Nor does it indicate that the three-year old have a lower status. Rather it highlights that such differences may lead to clash of competing interests. The issue, for Buchanan, is that moral equality needs to be publicly recognized and the degree to which this can be supported through different sets of rights remains to be seen.

Wilker (2010), on the contrary claims that our relations to posthumans could mirror our current relation to the cognitively disabled whose rights we often restrict. He explains that dominant frameworks of social cooperation attempt to balance inclusion and efficiency. In any such framework there will be those who cannot be left to make meaningful choices about their lives such as, for Wilker, those with an inability to verbally communicate. It is often the case where whilst trying to protect their interests we deprive them from certain rights. Whether or not this would be the case between us and posthumans would depend of course on additional factors, including the specific capacities they would have, the way social cooperation takes place or broader positions on distributive justice. However, there is no reason to preclude this possibility.

From the above, one can conclude that within the bioenhancement literature there are significant doubts about whether a higher moral status than what humans currently enjoyed is conceivable, which partially depends on which framework of moral status one adheres to. However, there seems to be an agreement that if post humans with a higher moral status come to exist, that would be harmful to mere humans. What is interesting though is that this is not necessarily considered unjust.

Agar’s concern, for example, is not that the harm mere humans would suffer stems from mistreatment. Rather he is concerned that posthumans will be entitled to treat us in such a manner similarly to how we treat non-persons. Therefore, his objection seems to be relying on a claim that such scenarios although potentially just, are not in our best interest and since we do not owe post humans to bring them into existence, we need to exercise extreme caution when contemplating bioenhancement.

Hauskeller (2013) expresses doubts that there is a higher moral status than what we currently enjoy. However, he explains that even if Agar is correct in asserting that posthumans are entitled to use us in certain ways as means to their interests, this in itself does not dictate that it is morally wrong to bring them into existence. Persson (2013) argues that even if the existence of posthumans was bad for humans this would not mean that it is bad overall. Even if mere persons were sacrificed more often, the overall benefits of posthumans could outweigh such loss. Therefore, for Persson, it does not follow that we have moral reasons not to create posthumans. Wasserman (2013) tentatively claims that to examine Agar’s concern about posthuman needs taking precedency over our own, one can compare them to children. Although Wasserman (2013) points out obligations towards children usually fall on parents, there are still material and non -material burdens that are placed on the broader social whole.

For Savulescu (2010), it is important to distinguish between the conditions of conflict amongst us and posthumans or superior aliens as is his example. He explains that regardless of any properties that such superior beings may have, if they presented a threat to us as per Williams's scenario then we should have a right to defend ourselves without this being a case of species bias. However, he distinguishes between a case of threat and cases of saving or creating lives with higher capacities.

He gives us the following distinct cases where a doctor needs to decide between saving a posthuman or a human and a case where a post human couple is considering having a child and have the choice between an enhanced fetus, which would become posthuman and an unenhanced fetus which will become human. Savulescu argues that unlike a case of threat, in the case of saving or creating a life, we have moral reasons to prefer beings with higher possibilities of a better life. It would be potentially a different case for a human couple wanting to have a child in which case there could be reasons to prefer a human child as it would be a way of showing a commitment to "ground projects". There could be, under the appropriate conditions, sufficient reasons for parents to select a child that could participate in their community and group, even if it otherwise would not have the same prospects as a posthuman child. What is interesting therefore is that if we return to Williams (2009) question in case of benevolent aliens and ask "which side are you on" for the above-mentioned scholars, the answer might not always be as straightforward.

Having seen the above, which framework of moral status seems more convincing and what can be said of the moral status of posthumans? I would argue that we cannot say much about posthumans. By that I mean we cannot give a definitive answer to such a speculative question. There are numerous key factors to consider- what exactly posthumans would look like, what would the social, political, or financial condition be like, what resources will be available, what percentage of the population would be posthumans, how will scientific innovation have changed other aspects of existence all of which are currently unknown.

Moreover, the weight of these factors will, of course, vary depending on our preferred framework of moral status. It is clear from my analysis that I do not espouse a threshold framework because of the arbitrariness of a threshold, of its irrelevance to many interests that non- person animals are capable of having and because of its exclusion of non-person animals and humans who are perceived to lack the individual properties in question. Although I take sentience to be a better ground for moral consideration, the interest-based account is also problematic to the extent that it also establishes a hierarchy by re-asserting the importance of human typical complex cognitive traits as it understands them to enable higher interests. In addition, to the degree that the interest-based framework is understood to be utilitarian, as Singer does, it can also share the respective conceptual limitations.

I would like to take a different angle. I have tried to show how the focus of the relevant literature so far has been to evaluate and compare a threshold versus an interest-based framework of moral status. However, I would argue that what has been neglected is the impact of *how* the moral status of posthumans is discussed. As I will try to show, these dominant narratives might not be able to provide a conclusive account of posthumans, but they can perpetuate frameworks harmful to disabled people in three following ways.

A first issue is that the biomedical enhancement discourse on posthumans affirms the distinction between person and human I discussed in the previous section which can have a negative impact on disabled people. It challenges the idea that moral consideration should be bestowed based on the arbitrary category of species membership and suggest that it should be based on personhood, which is constituted by traits that can potentially transcend species barriers. This distinction though undermines the importance of human species membership, which leaves in a very precarious position those humans whose personhood is casted into doubt. A respect -based threshold framework could deny personhood to any disabled people unable to show they have such traits. A gradient-based view could establish that their lives are not as valuable as those whose capacities allow them to experience greater interests.

By extension, a second issue is that the emphasis on personhood precisely confirms and upholds that moral consideration needs to be given in relation to individual capacities. This is something that McMahan (2002; Savulescu, 2010) asserts. He explains there can be reasons for extending moral concern to those who are not persons but with whom we share special ties. This, however, he argues cannot be a standalone reason for moral consideration and at best can function as a supplementary basis whose extent is much more limited than humanists assert. McMahan explains that, for example, we may have a- limited- obligation to cognitively disabled people. If though we were visited by an advanced race of Martians who had no such special kinship with them, we could not expect the Martians to treat them any better than we treat animals. Such moral obligations need to be grounded on particular capacities that the cognitively disabled have.

McMahan (2015) acknowledges that, at least for members of our species, we do not award moral status in degrees based on how much of these relevant capacities one has. This could potentially also be the case if supra- persons emerged whose relevant capacities would be significantly higher than ours similarly to how severely disabled people's relevant capacities may significantly vary from species typical. However, he argues that this view of supra persons would point out an inconsistency. It would imply that supra-persons, mere persons and disabled people all have equal moral status. Yet the difference in capacities between a supra person and a severely cognitively disabled person might easily supersede that of a human person and an animal.

This can also be seen in Savulescu (2010) who contemplates whether our species deserves to continue as is or if there are moral reasons to allow- at least a peaceful- transition to a higher species[46] . He claims that, unless under particular circumstances, there are no inherent reasons to show a preferential treatment to our own species that would come at the expense of allowing the creation of posthumans capable of greater wellbeing and higher interests.

Savulescu's account of posthumans reflects his account of disability. He takes the case of Deaf people to explain that deaf parents, assuming that there is no additional harm or that there is no additional cost to anyone, might have reasons to prefer a deaf

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[46] . This is something that critics of bioenhancement claim when they argue against processes that would alter germline mutations or cloning that we have duties to preserve our species eg. see Anas (2000) Cohen (2011). Others argue that it is more problematic to assume that humans are at the peak of evolution and deserve to be protected as such. If anything, trying to improve ourselves and our environment has inherently been a part of our species.

child. A deaf child would be able to participate in deaf culture and communities. This is a way to allow Deaf people a commitment to “ground projects” as per Williams’s remarks and affirm things that are for them valuable. Similarly though to his conclusions about creating posthumans, this does not negate the fact that overall there is a reason, particularly among non -deaf people to prefer non deaf children because, other things equal they have a better chance of leading a good life.

What makes such accounts problematic is precisely the affirmation that moral status should be awarded based on individual capacities and in particular on typical human species cognitive capacities such as rational agency. Based on which such individual capacities they have, disabled people, animals, typical humans and post humans are placed in a hierarchy which bestows to each a different moral status. As Hauskeller explains, what seems to emerge is a chain of pre-persons such as animals and disabled people, persons and post persons. Not only though does this legitimizes the relevance of individual capacities to moral status but it legitimizes the irrelevance of species membership. Non-human animals are placed hierarchically lower than humans because they lack capacities that are typical to humans (Hauskeller, 2017, 2018a)

Therefore biomedical enhancement advocates not only associates moral consideration to individual capacities but also understand them in a hierarchical way. This is something that I discussed extensively in the previous chapter where I claimed that biomedical enhancement discourses understand having the most available options and control over one’s environment as criteria for a good life. As such, lives who exhibit these traits have a higher chance of wellbeing. Lives though with disability are considered inherently worse as they are deemed incompatible with such ideas. This becomes apparent in these discussions of posthuman status. The concern expressed by scholars like Agar is, as I explained, not that posthumans will mistreat us. Rather that it will be *just* for them to have a higher moral status than humans based on their higher capacities. This though is the same hierarchy that places typical humans over animals or over disabled people.

A final consideration that merits our attention and which as I will be arguing is key in understanding how biomedical enhancement discourse can philosophically exploit disability, is how posthumans are portrayed. Although Agar, Buchanan, and others explain that it is difficult to imagine what kind of capacity would potentially justify a higher moral status or what would post humans might look like the tentative descriptions they offer and the assumptions they make, reaffirm as valuable and desirable the traits currently associated to personhood (Frannsen, 2014). Post humans are imagined as having increased cognitive capacities. They are smarter than us, have greater processing powers and greater memory. Agar speculates that they are able to pick up multiple languages and have extraordinary memory, echoing Bostrom's description of transhumans as being able to absorb knowledge that could fill entire libraries. They are also described as being more moral. They are mutually accountable to each other, fair, and rational. Whilst transhumanists see biomedical enhancement as the promise of a morphological freedom (Sandberg, 2013) I would argue that this freedom is limited to traits that for bioenhancement advocates, would increase welfare by increasing a person's autonomy and control. This description plays a key role as to why I claim biomedical enhancement to philosophically exploits disability as I will discuss below.

3.3 The Argument for Marginal Cases

To elaborate on why the way moral status is discussed is harmful to disabled people, I will again turn to discussions on animal ethics. Given the similar ways biomedical enhancement literature and animal ethics have understood moral status this can be a useful way to discuss how biomedical enhancement literature reproduces similar problematic narratives as animal ethics literature does.

There has been a considerable amount of tension, between animal wellbeing and disability rights advocacy both within academic scholarship as well as activism. This results from a depiction of animal wellbeing and disability rights as incompatible. One reason for this framing within an academic setting is the Argument for Marginal Cases (AMC).

Arguments for marginal cases examine the moral status of those at the margins of personhood such as fetuses, infants and the cognitive disabled in comparison to the status we acknowledge to animals. Different scholars have advanced different variations of this comparison which consequentially lead to their own distinct implications**.** Singer, McMahan along with Reagan (2006) and Drombrosky (1997) have advocated what Salomon (2010) describes a strong form of the AMC. A strong form of the AMC asserts that scholars who ascribe importance in being human need to prove why non-persons humans should be treated as other humans. On the other hand, as Salomon explains, authors such as Nussbaum (2007), Wolfe (2008) or Linzey (2009) have also examined animals next to disabled people in a way that tries to problematize the idea of the species and potentially argue as Nussbaum does, that animals deserve a higher moral consideration or rights whilst trying to assert that t disabled people also deserve extensive moral protections.

Moreover, even between those who hold a strong form of the AMC such as Singer and McMahan there are significant differences stemming from the broader ethical framework which each scholar espouses. Unlike McMahan (2010) who seems to be advocating for multiple thresholds or Reagan (2006) who adopts a rights language, Singer (2010, 2015) advocates a utilitarian framework. When applied to these t backgrounds, the AMC can lead to different conclusions in particular cases. Here I will focus predominantly on the work of McMahan and Singer firstly because they are some of the most influential scholars and secondly because their work exemplifies well some of the issues with the AMC that are relevant for my discussion of disability within a bioenhancement literature.

In other words, although there are different versions of the AMC the basic structure popularized by Singer and McMahan goes as following: Humans enjoy moral protection based on a certain set of cognitive and psychological capacities. Animals are thought of as lacking these capacities and as such they are not accorded similar protections. However certain people, namely those with profound cognitive disabilities often also lack such capacities. Yet there is an inconsistency in the way that animals and cognitively disabled people are treated. Unlike animals we do not hunt, eat or experiment on the cognitively disabled. This discrepancy though cannot be justified. Rather it is an indication of undeserved bias in favor of our own species akin to other evils such as racism or sexism and we have strong moral reasons to address these inconsistencies.

For Singer and McMahan, the issue is that we treat animals worse than we should whilst potentially treating the cognitively disabled better than we need. For the sake of consistency therefore we need to reexamine the lines distinguishing different degrees of moral status. As Singer (2010, p.333-334) explains the American Association on Intellectual and Developmental Disabilities stipulates that, people with severe intellectual disabilities:

“_ have an IQ range below 25;
_ will always require much supervision, though they may acquire some self-help skills;
_ have an ability to understand that exceeds their ability to speak;
_ may have little or no speech;
_ may be capable of following simple directions;
_ have no academic skills;
_ may be unable to perform any useful work, though with training may be able to achieve a work-activity level of productivity;
_ may appear socially isolated and pay little attention to others except as it relates to their own needs.”

If we reflect on the earlier discussion on animals’ capacities and behaviors, it becomes clear that some, such as chimps would potentially outperform severely cognitively disabled humans in relation to such criteria. Yet as McMahan (2010) explains, most people would allow for a chimp to be killed to use her as an organ donor or perhaps as is more usual to conduct medical experiments on her. No one would suggest doing now the same to the radically disabled. If anything, we allocate significant resources to keep such people alive. This is the case even for radically disabled people without kin and whose capacities are comparatively lower than those of chimps. He therefore concludes that “when combined with the demand for moral caution, the challenge to consistency posed by the comparison between the cognitively limited and animals with comparable cognitive endowments ought, as a matter of moral and intellectual integrity, to move those who argue and campaign for the rights of the cognitively limited to accept the inconveniences of being vegetarian.” (McMahan, 2010, p.347)

This inconsistency for Singer and McMahan is rooted in the problem of speciesism. As I have already mentioned, for these scholars there are strong moral reasons as to why speciesism is a poor justification for preferential treatment. Both maintain that when one asserts that it is natural to show preferential treatment to our own, or as Williams (2009) explains to be on “our” side, this does not actually refer to biological species membership. Singer (2010) to elucidate invites us to imagine we are visited by an alien race. He explains that if these aliens were able to understand us and enter in rational arguments with us or be mutually accountable to each other then, we would have good reason to treat them as persons even if they are a completely different species. In fact, he asserts that we would be much closer to them in morally relevant ways than we are to humans who are severely cognitively disabled. [47]

For advocates of the AMC this indicates as that I have mentioned, what we actually value is not biological proximity. Rather species membership is merely a place holder for the traits and capacities that indicate personhood which can be a trans-species category. That is to say, even though most humans are also persons these categories do not always overlap. This distinction between person and human implies that there are persons who are not human as well as humans that are not a person. By extension, if we had the appropriate conceptual clarity, we would be able to realize that moral significance is not awarded on the basis of humanity but rather of personhood (Savuescu, 2010). Singer concludes that we have no reason to withhold moral status from non-human beings who show such traits and bestowing them on humans who do not.

Therefore as McMahan (2002; Carlson, 2013) explains if species membership is not morally relevant and if traits associated to personhood are not limited or reduced to humans, animals and profoundly disabled humans which share similar psychological properties need for the sake of consistency to be examined in relation to one another. He claims that in doing so it will become clear that whilst we might have bestowed much moral consideration to the severely mentally disabled, we certainly have not bestowed enough to non-human animals.

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[47] The same argument can be found in Savulescu 2010 as I have previously mentioned

3.4 Is Animal Liberation liberating? The problem with the AMC.

Although I wholeheartedly support that we need to drastically extend the moral protection and status that animals currently enjoy, I will argue that the AMC as described above is problematic not only regarding the cognitively disabled but also because it narrows animal wellbeing to discussions on animal suffering. Specifically, I take it that there are two different kinds of issues with the AMC. The first one relates to the way this discourse is constructed and the second relates to its philosophical limitations.

Starting with the first objection, perhaps the most intuitive objection that one can have against comparing disabled people to animals is that it is offensive and dehumanizing and can contribute to the further marginalization and exclusion of disabled people. This , is a well justified concern. As disability scholars explain, the AMC follows a long history of cognitively disabled people being animalized and by extension often being marginalized and even killed. The AMC, as its critics strongly argue, can proliferate and reinforce discriminatory attitudes, misinformation and biases which can have tangible ramifications on existing disabled people. [48]

This is something that both McMahan and Singer are aware although they do not take it as a significant enough reason to refrain from making such comparisons. McMahan claims that it is important to follow reasonable arguments even when they lead us towards conclusions that contradict closely held intuitions such as human moral equality (Crary, 2018). Singer (2010) explains that this “slippery slope” argument, although can be a useful reminder to exercise caution, does not in itself provide an adequate response to the challenges he takes AMC to pose. Even though he recognises the mistreatment of disabled people in recent history, he expresses doubts that this kind of philosophical analysis could become particularly problematic given the political, financial and social differences between now and for instance the horrors of the Holocaust. That is to say, for Singer the argument that the philosophical devaluation of disability and disabled people might actually negatively impact existing

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[48] For an indicative overview see Crary, 2018; Carlson, 2013; Schweik 2009; Evans, 2004

disabled people by influencing policies, attitudes or having other political implications is unpersuasive. The existing political and legal frameworks would protect disabled people and prohibit a mistreatment like what was seen in WW2.

Moreover, he questions whether such practical concerns justify maintaining what he thinks are philosophically unsupported premises which themselves cause incalculable harm to billions of animals (Singer, 2010, p.342). He explains that this formal attachment to human equality which elevates the status of the cognitively disabled, simultaneously impacts on animals which we continue to think of as having a lower moral status. In upholding our current beliefs that all humans have equal moral status which is inherently higher from all non -human animals we ignore that "the breeding sows that produce almost all the pork, bacon and ham sold in this country [USA] are so tightly confined in metal crates that they cannot walk a single step or turn around. And yet, pigs are animals who compare quite well in terms of cognitive abilities with human beings who are profoundly mentally retarded" (Singer, 2010, p.343)

I am very happy to agree that pigs are both delightful and intelligent creatures whose current mistreatment is almost always morally unjustifiable. However, such an assertion cannot stop the above comparison from being not merely distasteful but also problematic. It is not clear why Singer chooses the Holocaust as the main reference point of harm towards disabled people. The mistreatment of disabled people neither started nor ended with the Holocaust. Disabled people, continue facing discrimination and prejudice in various aspects and in different degrees. Moreover, a philosophical discourse does not need to lead to the extermination of disabled people in order to be problematic. This philosophical exercise therefore of comparing them to animals can have direct political implications to a real group of people who continue being underrepresented and marginalized.

This is something that has vehemently being argued by Kittay (2005, 2010) as well as Carlson (2010, 2013). Kittay who is also the mother of a cognitively disabled women named Sesha, explains the emotional toll of being confronted with such arguments- often by Singer and McMahan. This might not be the intention of such comparisons. Singer for example, asserts that when compares people like Sesha to animals such as pigs, he does not mean to offend anyone as he is very fond of pigs.

However, as Kittay (2005, 2010) explains her response is not generated from merely finding such instances offensive. Rather every time her daughter" whose humanity she knows with every embrace" is compared at best with an alien and more often with a pig, an ape or a rat the horrific history of abuse that the cognitively disabled comes to life. This is exasperated by the fact that the oppression, exclusion and marginalization of people with cognitive disabilities is ongoing. From disabled people being disproportionately impacted by COVID, to them being given unwanted Do Not Resuscitate forms, disabled people being refused to be put on transplant lists to discourses on euthanasia as well as arguments for procreative beneficence that I discussed on the previous chapter, there is a long list of practices and policies currently devaluing their lives. The AMC is not argued in vacuum but rather at the backdrop of historic and most importantly current injustice.[49]

Under such persistent conditions of marginalization, comparing disabled people to animals is for Kittay similar as using racial slurs. Even though slavery has been abolished, the use of racial slurs remains problematic and someone stating that they do not mean to be offensive - or they are not racist themselves -is not enough to negate historical context and weight particularly as black people continue to face discrimination. Singer's assertion that his intention is not to be offensive is unable to address the nuanced relation between the animalization and the devaluation of the cognitively disabled. Being fond of a pig as he seems to be, does not translate to being fond of these same attributes in a human. As Kittay puts it "the Nazis were deeply attached to their dogs… [but] that did not keep them from calling Jews 'Hunde'" (Kittay, 2010, p.399; Crary, 2018).

A second reason why the AMC is particularly problematic has to do with the role and authority of the philosopher in shaping the relevant discourses. In the case of cognitive disability, the gravity of Singer's and McMahan's arguments is not only determined by whichever authority they have as philosophers whose ideas could influence policies

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[49] See for example the case of Amelia Rivera who was refused a transplant (Davidson, 2016) Jenna Glatzer's (2000) report on transplants for people with Dow Syndrome, or more recently the case of Laura jane Booth a 21-year-old woman born with trisomy 13 whose death in 2016 in Sheffield has been investigated as medical neglect (Thomas, 2021)

and practices but also by the fact that people with actual cognitive disabilities and their caregivers are often underrepresented from such conversations. As I discussed in the previous chapter disabled people are often perceived to lack epistemic authority about what it means to be disabled whilst their testimonies over their own lives can be regarded with suspicion.

One of the ways in which this becomes visible is through the position philosophers have in defining disability. Evidence of this can be found is the use of language such as moron or idiot, imbecile or permanently retarded that philosophical discourses have often employed (Carlson, 2013). This is not only because most of these terms are now deemed derogatory. Rather it is because the use of these terms, which referred to scientific classifications naming distinct medicalized categories are often used interchangeably and uncritically in academic contexts. This indicates a disregard for the history and distinct conditions from which such terms and categories emerged. For example, Singer has been using “retarded” and “imbecile” interchangeably (Singer, 1974), McMahan mainly uses the term cognitively disabled although he will often also refer to “idiocy”, “retardation”, “dullard” and “moron”. Others like Haksar (1980) in some particularly abhorrent analysis refers to most types of cognitively disabled people as idiots (Carlson, 2013).

The term “idiot” for instance as Carlson (2013) explains was used to describe people whose condition was considered to differ from species typical both in kind and degree. The idiot was described as akin to a child, someone whose development has stopped before reaching what is typical for adults and therefore someone who’s differences are a matter of degree. This understanding was shaped and also shaped the emergence of tools such as the IQ Test which aimed precisely in quantifying intelligence or the lack of it. The same term though was also used to refer to a qualitative difference that was based on animalization and often racialization where the idiot was of human form but lacked any morally relevant human traits.[50]

Another set of criteria constructing categories of cognitive disability was the condition being static or dynamic. Although the idiot was considered to be amenable under the correct environment, the moron was a subcategory of the idiot whose improvement

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[50] The Kallikak Family is an indicative reading of such an analysis (Goddard, 2008)

was preclude by their condition. Declaring idiocy as a category that is both static and dynamic, Carlson elucidates, served as a way to both justify expanding the institutionalization of the cognitively disabled as well as justifying a failure to treat them. The “moron” constituted the later category whose grave condition could not be helped. The high grade feeble minded represented the other end of the spectrum whose ability to function made them harder to distinguish from the broader population and as such were a greater threat.

My point is not to offer an extensive history of how cognitive disabilities have been defined.[51] Rather it is to give certain indicative examples of how problematic terminology in academic settings reproduces categories of disability without precisely stipulating the traits they are referring to. This is even more of an issue as such language refers to categories formed though biases and relying on unscientific grounds. Without a careful examination and aided by academic authority these prejudices can be reproduced and continue shaping current and potentially future discussions of disability.They are also indicative of the ambiguous role of philosopher. As both Kittay and Carlson point out philosophers are at liberty of abdicating the responsibility of identifying disability as the duty of a different expert such as a doctor, a psychiatrist or a neuroscientist. On the other hand though, they are also free to create this speculative category of disability that they use to put forward their particular arguments.

Moreover these philosophical discourses which are often based on ill formed categories combined with a lack of representation of disabled people and their caregivers, can perpetuate a top to bottom description of disability. These descriptions heavily rely on presumed paradigmatic cases constituting which Carlson describes as a dualistic understanding of disability: the mildly cognitive disabled and the severely cognitively disable understood at the margins of personhood (2013, p.118). The issue for Carlson is that these two paradigms of disability in addition to broader issues of classifying and defining disability can allow for these prototypes to become representative of disability even if they do not accurately describe the lived experiences of the disabled.

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[51] For an extensive account see Carlson, 2013; Ilyes, 2020

This I take to be a fundamental issue with the AMC. Singer and McMahan for instance refer to the cognitively disabled-the paradigmatic cases for the AMC- as lacking not only the capacity to function independently, move or talk but also as lacking self-awareness. When McMahan argues that the lives of the cognitively disabled are not as valuable and it is a sentimental attachment to our own species that prevents us from acknowledging it, he is referring specifically to the ‘radically or severely mentally retarded’. He refers to such people as humans who are unresponsive, incapable of forming relations or other capacities such as creativity, aesthetic appreciations or forms of knowledge (2002, 2010).

However, there are numerous problems with such a description. Firstly, it does not capture the complexity of defining disability in a conceptual level. Both Singer and McMahan seem to adopt a medical model of disability where disability is equated to individual physiological trait. Yet they do not seem to account for its conceptual limitations nor address criticisms from other models such as the social model of disability. Disability is understood as a physiological condition distinct to the social conditions which give it meaning and which can directly impact it. Moreover, aside from being reduced to its pathology, the way that the AMC envisions disability is also as a static category that does not fluctuate and as such leaves no room to discuss potential changes or improvements. Disabilities of various extensiveness though can be organic and non-organic, visible and invisible, static and dynamic (Carlson, 2013) The AMC presents an unproblematic description of disability, which is why the cognitive disabled are separated from other marginal cases such as fetuses, infants or those with dementia whose previous personhood or potential personhood would complicate the discussion. This strict description though cannot accurately describe the fluidity and heterogeneity of disability.

Most importantly though, the AMC does not seem to be relying on an accurate description of the lived experiences cognitively disabled people can have. Crary (2019), Calrson (2013), Kittay (2005; 2010) and Berube (2010) amongst others point out that this depiction of cognitive disability is unsuccessful in providing an accurate account for the lives of the cognitively disabled. This is something that Kittay often puts forward particularly in relation to McMahan and Singer’s work. In one indicative example Singer invites us to imagine a “community for retarded people” in which the residents are confined but allowed to live to a great extend as they please. They form friendships and families, enjoy activities, communicate non-verbally and have complex social relations and hierarchies. They also have and raise children and if one kills another, although unpleasant, it does not invoke the same reactions as if they have killed anyone outside the community. As Kittay explains, Singer aims to reveal that this “community” is in fact a zoo and that he is talking about chimps, his point being that chimps and cognitively disabled people share similar properties. One of the reasons Kittay (2010) is thoroughly unimpressed by this example is that it indicates a troubling lack of familiarity and understanding of what lives with disabilities look like. For example, as she points out, chimps in this zoo all have similar capacities. Disability however is such a heterogenous category that a group of similarly cognitively disabled people who can collaborate together to form a functioning community without any external support is improbable and such analogies often are plainly empirically inaccurate.

Moreover, descriptions of cognitively disabled people as unaware, emotionally unresponsive and incapable of having interests does not hold up to scrutiny. In her work, Kittay explains that her position as a mother of a woman with profound disabilities has given her the opportunity to gain relevant and important knowledge about the lives of the cognitively disabled. She explains how for instance her daughter Sesha clearly shows content when visited by her preferred caregivers, friends or family or shows an appreciation for classical music-Beethoven in particularly. Similar expressions and responses are exhibited by the other residents of the care home facility that Sesha lives. Residents, all of which have profound disabilities, experience friendship, social relations and even more complex emotions such as grief. Even people with cognitive disabilities as was Ashley X whose case I discussed in the previous chapter, have been observed to react to external stimulus indicating the capacity of physical and emotional enjoyment (Kafer, 2013)

Why is it then that Singer and McMahan describe people with severe cognitive disabilities as lacking the capacities for any type of meaningful experiences? There are various factors that contribute to this disparity. Some, as I discussed in the previous chapter reflect types of epistemic injustice. A lack of appreciation of the capacities cognitively disabled people have is not necessarily an indication that they do not exist. Rather it may indicate that the nondisabled lack the tools to understand. Goode (Taylor, 2017, p.136) for instance would work with non-verbal children. He describes how he would observe a young girl Chris who was partially blind, deaf and cognitively disabled. She had a tendency to rock back and forth on a chair with her head in a particular angle whilst taping a spoon. At first glance this behavior does not seem to indicate anything in particular. However wanting to better understand her, Goode started sitting next to her and mimicking her movements whilst closing one eye. In doing so he discovered that the combination of movement, light and sound would induce a pleasurable sensation. This knowledge though would be inaccessible without the first had experience and without the additional effort and desire to understand.

Unlike Singer and McMahan, Kittay, Byrne and Berube are philosophers who enter this discourse under this dual capacity of both an academic and a parent to a cognitively disabled child. As such they have the opportunity to center a type of knowledge which is usually accessible to family and caregivers and as such often excluded from academic discourses. The problem though is not merely that Singer or McMahan might not have engaged sufficiently with empirical research on the lives of the disabled. Rather as Crary (2018; 2019) observes it is that Singer and Kittay start from different metaethical positions on what kind of knowledge is morally relevant. For Singer not only does moral standing need to be grounded but the best way of grounding it is on individual capacities that one has. As Crary explains, this stems from a broader philosophical understanding in which empirical circumstances -such as species membership- or subjective attributes are seen as distorting. He adopts an abstract analysis in pursuit of what he takes to be a neutral conception of reason. Kittay on the other hand rejects this approach in favor of one which understands the world through a position of care which is not neutral. Not only that but the very way in which humans are understood for Kittay is by virtue of being morally important. This different outlook is what makes it look as if they are often talking past each other (Crary, 2018; Crary, 2019; Kittay, 2010)

One thing therefore that stands out is that although the moral status of animals, cognitively disabled people -and posthumans -is discussed in terms of their individual capacities, we are not always able to accurately identify them. This though I would argue is a significant problem for the AMC. Taking certain liberties in thought experiments and hypotheticals is both common and not always problematic within philosophical discourses. The fact that pushing a fat person on a train track might not in reality manage to stop the train does not seem to matter in variations of the trolley problem as the point of the argument lies elsewhere. However, in this case, details regarding the capacities of the cognitive disabled are the very basis of the argument. This category of the severely or radically cognitively disable is stipulative in a sense that it creates a paradigm of the severely cognitively disabled purposefully uncomplicated and placed at the margins of humanity therefore underlying the moral arbitrariness of species membership. Being accurate and empirically verifiable is necessary for the AMC to have any kind of validity.

Moreover constructing examples in such abstract forms can facilitate the arguments put forward by Singer and McMahan precisely because they strip the cognitively disabled from properties that underline their membership to human communities. If instead of an abstract concept of a radically cognitively limited person McMahan or Singer would invite us to imagine someone’s grandmother, or partner who had an accident or child with a congenital condition then as Carlson explains such arguments would sound different. This difference does not reflect a sentimental attempt to undermine a rational argument. Rather it challenges the idea that severely cognitively disabled people and non-disabled people share nothing more than biological species membership and that only individual capacities can serve as a ground for moral consideration.

McMahan does not necessarily claim that a certain degree of prejudice towards our own species is always unjustifiable. It is however as Savulescu (2010) explains much weaker than many “humanists” claim. As humanists hold, there are particular ties that bond together members of the human community and as such generate certain obligations to one another. This if acknowledged could potentially justify any duties one may have to the cognitively disabled as McMahan (2002) explains. As I have previously mentioned, he explains that there might be reasons to assign moral priority to projects and relations that we value. This would for example justify prioritizing the wellbeing of one’s own child over others. However, he is skeptical about the extend and weight of such relations. Someone could for example have a greater affection about their pet than they do for a family member. It is unclear if this is sufficient reason for them to extend higher moral consideration to it than to their child or partner. Most importantly though, for McMahan, assigning special weight to those with whom we have a special relation is problematic because that desensitizes us form the suffering of others. Therefore such relations can only generate week claims for partiality given the potential negative impact they might have against those who are excluded from such relations. He points out the need for partial relations to operate in a way that is not harmful to those who do not partake in them. As such he concludes that our preference for our own species needs to have limits to the ways animals get treated. In particular, we should not treat animals any worse than how we would expect an intelligent race of aliens to treat severely cognitively disabled humans with whom they do not share any special relation. (2002, p.227 in Savulescu, 2010, p.235)

In other words it seems like McMahan and Singer as well as Savulescu more specifically in the context of bioenhancement, maintain that personism can succesfully ground for moral consideration and answer the following question which McMahan possess to Eva Kittay in reference to her disabled daughter Sesha "And the fact that you, Eva, have a relation with your daughter doesn't necessarily give other people the same set of reasons that you have to respond to your daughter in certain ways and to treat your daughter in certain ways. The question is what is it about people like your daughter that makes moral demands on other people that nonhuman animals cannot make on any of us. That is the question that Peter is asking. He's not denying that you have a special relation to your daughter and that that is very significant for you in your life, significant for her, and so on, and that that's true of many other people*."* (Kittay 2010, p. 408)

To respond to this question, I would like to turn to a second set of objections highlighting the philosophical limitations of the AMC. The historical weight of the animalization of disabled people, the harmful consequences that such comparisons may have, and the ambiguity of defining disability are not the only reasons to avoid the AMC. Rather there are other philosophical grounds for which I take this argument is unconvincing. For Singer, and for the interest -based view in general, it is the capacity to suffer or more broadly to have interests that renders someone worthy of moral consideration which includes nondisabled humans, disabled humans and animals alike. The fact that animals and potentially certain cognitively disabled people might lack certain capacities such as mutual accountability or giving moral reasons for their actions should not preclude their interests from being considered along those of typical humans.

At first glance, this seems to give grounds for extending inclusion which could be an advantage over the threshold argument. Moreover, aside from being inclusive, moral consideration based on sentience is as Singer explains the best grounding concept for moral equality. If therefore his argument relied on sentience alone his account would be as Taylor (2017, p.125) explains very much compatible with disability justice.

However, as I have discussed neither Singer not McMahan, both of whom have advocated for the better treatment of animals, claim that animal lives matter as much as human lives. Singer's aim is focused on ending animal suffering, not on protecting animal lives. This is as both he and McMahan claim that animals, or at least most animals, have strong interests for what happens to them now, but lack a certain psychological continuity associated with complex cognitive capacities, which would allow them to care about what happens to them in the future (McMahan, 2002; Taylor, 2017; Kittay, 2005).

The above implies that we have good reasons to condemn practices such as factory farming for the horrific way in which animals are treated. Battery hens and dairy cows for example often suffer from week bones and fractures and limping whilst cows suffer from mastitis. Pigs commonly have porcine stress syndrome -as well as severe arthritis. This often results to them developing a plethora of health problems and disabilities which often lead to them being killed and disposed of as matter of public health. In the case of pigs, some slaughterhouses deal with injured or disabled pigs by beating them to death "with a lead pipe before he gets into the chute. It is called pipping". Alternatively, "if a hog can't walk they scoop the son of a bitch up on a dead run with a bobcat [small tractor]. Whupp! Right up in the air. If he stays in the bucket he stays in, if he falls out, you run hm over or pin him against the wall, finishing busting the rest of his legs so he can't run any further" (Taylor, 2017, p.32). As Singer rightly claims their capacity to suffer is relevant and sufficient, to make such practices morally wrong.

However, for Singer or McMahan it is precisely the suffering, not the killing of these animals which is morally problematic. Suppose that modes of productions within factory farming changed. Animals were kept in conditions which allowed them to lead good lives, free from physical pain, free to exercise in their natural environments or socialize with other animals of their kind. Under such conditions, the authors claim killing them would certainly not be comparable to killing a human and provided that it is done painlessly or for the benefit of the broader population, killing such an animal might not even be wrong at all. This is because death is not a harm for animals who do not have a unified understanding of themselves through their lives, who do not have future interests and who do not project themselves in the future.[52]

These specifications start to make it clear how this framework can be harmful towards cognitively disabled people and why we have good reasons to be skeptical as again it asserts that interests are relevant to capacities (Taylor, 2017, p.125-127). People with higher capacities not only can aggregate more interests but also have specifically an interest for their lives to continue. Cognitively disabled people are described as lacking such capacities alongside non- person animals. Therefore, under this framework one might have a duty to prevent the suffering of disabled people but not to protect, save or create them. This extends precisely to bioenhancement, procreative beneficence and the moral duty to have the best children possible. Enhanced lives given the increased capacities that they would have, would also aggregate a greater amount of interests. As such, one could argue against allowing the suffering of mere humans in the future but not to protect, save or create them instead of enhanced humans.

This to be problematic in multiple ways. Firstly as I discussed in the previous sections, our knowledge of animal minds is still contested. This calls for caution when we are trying to determine if animals have capacities relating to personhood and if our differences are a matter of degree or kind as was the question with the threshold concept of moral status. It also demands caution when trying to assert what kind of interests animals can have. These same concerns can be applied to Singer's and McMahan's claims that the interests of a person who is future oriented exceed those of an animal whose future goals are limited to the next meal or reproduction.

One objection can be that there is no good reason to assume that only certain ways of experiencing life and death can bestow meaning and value. As Taylor (2017, p.131-

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[52] Such arguments are very popular amongst those advocating for ethical meat eating see Pollan's (2007) The Omnivores Dilemma. It is also relevant to discussions about slaughterhouses and handling farmed animals see for example (see for eg Temple Gradin's work (Grandin & Cockram, 2020) well as discussions from DEFRA about genetically enhancing animals to not feel pain (Gough A, 2021)

133) for instance explains many animals migrate or collect food in preparation for the winter or hibernate, make nests for their future offspring, travel in preparation to give birth. It is not clear why such behaviors should be disregarded as a manner of indicating future goals. Moreover, it is also not straightforward how future orientation as understood in persons can be meaningfully applied or even recognized in animals whose life span is so different, from house flies whose entire life averages one month to bowhead whales who can live up to two centuries.

Not experiencing time in the same way that most people do is not enough to conclude that animals cannot value the continuation of their existence. Being future oriented and being aware of one's death is one way that many humans understand and value our lives. This does not mean though that it is the only indication, or an inherently better indication of a life being valued. There are many animals that will go through extreme measures to survive such as chewing their own legs to get free from a trap as dogs, coyotes or bears have been observed to do. I would argue that we do not know whether such behaviors are merely instinctive but most importantly even if they are instinctive, there is no reason not to take them as a valid indication of an interest to continue living. There is no need for only one single criterion to indicate a valid interest in staying alive especially when as Taylor explains, such a criterion caters only to neurotypical people within a wester linear, progressive understanding of time (Taylor, 2017, p.132). One could possibly even argue that death is worse for animals than it is for humans. Humans as McMahan claims construct their lives around narratives which include a beginning, a middle and an end. Death is integral to the way we make our lives intelligible and meaningful. If animals lack such capacities, then death could be worse for them (Krosgaard, 2018)

There is an additional problem which becomes clear when we see the AMC in relation to the issue of speciesism. As I have discussed, Singer and McMahan have argued against speciesism as an evil similar to racism, sexism or nationalism. Both, Singer and McMahan have argued against the arbitrariness of belonging to the same biological species as a criterion for moral consideration. There is no single characteristic that all humans possess to a greater degree than animals which makes preferential treatment of our own species potentially unjust. The AMC aims precisely in showcasing this arbitrariness by bringing into focus personhood, a notion which claims to explain what it is that we value and to provide a transspecies criterion of moral worth in a way that is less arbitrary and by extension seemingly fairer (Kittay, 2005). Therefore, Singer as well as McMahan argue it is certain traits such as the capacity to act rationally, autonomously, having future goals or being mutually accountable which constitute personhood and can ground moral consideration for anyone showing them regardless of species.

My objection to this account of personhood is that it does not seem to overcome the problem of arbitrariness. This is something Kittay (2005) advises whilst inviting further examination of the extent to which the analogy between speciesism and racism is intelligible and how would personism differ. The argument against speciesism claims that group membership is an irrelevant criterion but individual capacities- namely cognitive capacities pertaining to rationality- are appropriate links to moral status and protection. Nonetheless this analogy does not reflect how racism or sexism do not merely allow arbitrary preferential treatment to members of one's own race but also simultaneously assert that other races or genders lack morally significant traits and capacities. Therefore, it is not only belonging in a certain group -race or gender- that bestows moral status. Rather it is that certain capacities, traits or behaviors which are considered desirable are associated with one particular group whilst being denied in others. Simultaneously groups assert the desirability of traits they already happen to have whilst devaluing those who do not share them.

As Kittay points out, the ethnic cleansing that took place in Germany extended not only to other races and nationalities but also to Germans that were deemed as lacking the desirable traits associated to the Aryan race. McMahan's or Singer's use of personhood au lieu of speciesism continues a division between persons and non-persons based on certain traits that are associated only with persons, whilst being denied in non-persons. This Kittay (2005) aptly observes is just as much of a bias as McMahan accuses speciesism of embodying.

A second useful way of thinking about this distinction for Dunayer (2013) is as a form of new speciesism juxtaposed to the old speciesism against which Singer himself argued. That is to say personhood aims to offer a transspecies criterion of moral consideration. However it continues to be based on traits that are typical to our species, *because* they are typical to our species. As such it replaces the notion of speciesism with a similarly narrow and bias concept (Dunayer, 2013, p.30).

That is to say, Singer argues that what we value is not biological species membership but rather the complex cognitive and psychological properties that make up for personhood. However the only reason that we think such complex cognitive and psychological properties are important and decisive for personhood is because they are typical behaviors of our biological species. Therefore, for Dunayer, Singer-similarly to Regan (2006) -simply replaces one kind of speciesism based on biological membership with another one based on typical species functioning.

An example of how this new speciesism can operate, can be found if we look at Apes or Gray Parrots, two species which Singer often refers to for the complex cognitive capacities they exhibit, one of these being chimps' capacity for sing language. Given that any such form of language was considered a uniquely human capacity the excitement and controversy over such observations was understandable.[53] What is interesting is that the conversation around these animals is often limited to whether or not their behavior actually indicates language capacities similar to our own. A better question though is to what extent does it matter.

Animal experimentation is still a common practice, for either cosmetics or most importantly medical treatments and more often than not the conditions under which the animals are kept oscillate between neglect and cruelty. Occasionally though an individual animal can capture the public's attention and get a chance to a better life. After the 2011 documentary on sing language in primates titled Project Nim, the protagonist ape, Nim Chimpsky, having won over the public's heart got to spend his remaining days in an animal rescue (Taylor, 2017, p.50-51). Although this public concern ended up benefiting the particular chimp, it mirrors the problematic idea that the more typical human like capacities he showed the more his life became valuable

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[53] It is important to note though that Deaf people have been extensively discriminated against for using sing language. As a language based on gestures it was devalued though both animalising and racializing processes asserting that oral languages were inherently more sophisticated and valuable. The fact that sing language might have been accessible to other species was interpreted as indicating that it was not a real language and enabled the animalisation of deaf people. This led to policies that for decades discouraged the teaching of sing languages in schools. See Taylor, 2017; Cleve, 1999

and deserving of protection. This is a is deeply troubling notion indicative of how the lives of those who do not exhibit typical human traits are devalued.

This issue with undermining the importance of biological species in favor of personism, is that traits relating to personhood such as certain advanced cognitive capacities typical amongst humans, are used to determine the moral status of other species. This also extends to species whose members do not need such capacities relating to personhood to lead good lives. This can be clearly seen in McMahan's (2002) attempt to argue against the importance of species normal as a relevant criterion. He gives a hypothetical example of the Superchimp, a chimp who has been genetically engineered to develop the cognitive capacities of an 11-year-old human. McMahan claims if Superchimp lost her advanced intellect, that would be a misfortune. These capacities have been constitutive of who Superchimp is, which would make this a genuine loss akin to what a typical human would experience if they were to suddenly face a similar loss. This is the case even if Superchimp would simply revert to what it typical for her species. This for McMahan indicates that species norm cannot be a relevant criterion for wellbeing because it would not acknowledge the Superchimp's loss as a misfortune.

Unlike Superchimp's situation, for McMahan, the life of a cognitively disabled human who has never had complex cognitive capacities is not a misfortune precisely because species normal is not a relevant criterion. In the case of radically cognitive limited humans or an anencephalic infant the lack of cognitive capacities is part of their individual nature. It makes no sense to say that their lives are bad for their own sake. As such there is also no reason to dedicate effort and resources comparable to what is expected for typical humans because their wellbeing cannot be assessed based on typical species functioning (McMahan 2009). He therefore concludes that the loss of cognitive capacities whether it is experiences by a human or a Superchimp is a tragedy in a way that congenital radical cognitive limitation is not, which holds true regardless of species normal.[54]

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[54] Kittay rightly argues that this example does not justify but merely asserts that species is an irrelevant criterion "The Superchimp account provides a cross species comparison based on the supposition that species memberships makes no difference. Yet this is precisely what is in contention" (2005, p.112).

I would argue that this is unconvincing. To understand why, let us take a look at farm animals instead of the Superchimp. Having undergone years of selective breeding farmed animals such as chickens or cows now produce more eggs and more milk respectively whilst they also grow faster and bigger. However this also causes a significant increase of a multitude of health issues such as mobility issues, osteoporosis in chickens or mastitis in cows. Based thought on frameworks of enhancement and disability that I discussed in chapter one and two, it is not clear if we have enhanced or disabled these animals. This distinction cannot be understood without taking into consideration the environment of factory farming as well as consideration of how the risks and benefits of enhancement are distributed.

Therefore, going back to the Superchimp it, I would argue that it is problematic to assume that a human childlike intelligence is a trait which if lost, would be a misfortune for a chimp. That is because it is not evident that Superchimp's intelligence constitutes an advantage for her. For example, Superchimp might not have the capacity, or interest to fully participate in human societies. Nor would her increased intellect necessarily facilitate her participating in chimp societies as it might hinder her capacity to take part in chimp typical activities, socialize or reproduce with other chimps as Kittay (2005) points out.

My point is that there is no inherent reason to assume that human like intelligence would benefit a Chimp indicating that it is sudden loss would be a misfortune instead of luck. Without a reference to typical species functioning or wellbeing or social environment it is not clear what makes Superchimp enhanced and not disabled. Therefore, I would argue that framing enhancement or disability in animals based on physiological traits that are typical or deemed important for human wellbeing seems incoherent. A superchimp regardless of her high cognitive capacities arguable is still a chimp in a way that a disabled human is still a human and not a chimp[55] . McMahan's analysis seems to rely on a fixed, medicalized model of disability that somehow also transcends species.

McMahan though is not alone and although he uses a hypothetical Superchimp to elucidate his point there is a plethora of articles arguing that the biomedical

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[55] Although it was not uncommon to see disabled people – or people of colour- as evolutionary throwbacks Crary, 2018; Carlson, 2013

enhancement project should also include animals. Bostrom (2004), Hughes (2004), Dvorsky (2008, 2015) and Chan (2009) are amongst the transhumanists who not only take animal enhancement, that is to say cognitively enhancing animals- as permissible but as a moral obligation.

Dvorsky (2008, 2015) argues in favour of animal “uplifting” a term he borrows from author and tech-consultant David Brin. They both seem to envision a world where animals take part in human societies echoing Brin descriptions in which animals like dolphins and bonobos could fully participate in human schemes of social cooperation by living amongst us, engaging with art and even becoming philosophers themselves.

To elucidate the idea of “uplifting” Dvorsky refers to European colonisation of the Americas as an example of a memetic uplifting. He explains how this was a clash between post-feudal societies and stone age societies the former utilising the technological and cultural gap to dominate over the indigenous population. The violence this process caused is for Dvorsky regrettable. For him we need to ask questions such as “Could it have been done with greater sensitivity and concern for the native way of life? Would our society today do a better job? Assuming a hands-off policy could have been exercised with regards to the intermingling of civilizations, would it have been ethical to allow the aboriginals to continue living a Stone Age life? Assuming this is truly an example of cultural uplift, in which ways was it a success and in which a failure?” (2012)

He then proceeds to apply these questions in discussing the cultural uplift of animals such as Great Apes through biomedical means as a matter of justice. For Dvorsky, there is no reason to limit the benefits of these scientific advances to only members of our own species. Rather he suggests that one can extend a Rawlsian understanding of distributive justice to include biomedical animal augmentation. In particular he proposes that one could extend the Rawlsian veil of ignorance to include species. He explains that if one includes animals into the sphere of moral consideration it would become clear that animals which are effectively excluded from any social standing and any participation in the social contract are severely disadvantaged and therefore uplifting them could be understood as a matter of justice falling under the difference principle.

The need for this uplifting stems, Dvorsky explains, precisely by the disparity of natural traits. He suggests that similarly to some humans who have been unlucky in the distribution of natural traits and talents, animals can be seen to have fared poorly in the natural lottery as species. He claims that "The prospect of coming into the world as a great ape, elephant or dolphin in the midst of an advanced human civilization can be reasonably construed as a worst outcome." By being uplifted, animals will be able to partake in a variety of goods such as justice and freedom from which they are currently precluded.[56]

Dvorsky is not alone in his suggestions. Chan explains that if our child where to have a congenital disease that would give them intellectual capacities comparable to that of a primate and it where possible to prevent this in a safe way then Chan argues there is a moral obligation to do so. She invites us to imagine a situation where "A baby is going to be born with a congenital condition limiting his native cognitive abilities to that of a chimpanzee. The condition is that the baby is, genetically and biologically, a chimpanzee! "(Chan, 2009**).** What Chan seems to be implying is that one would have a moral duty to avoid disability in one's own child and even a moral duty to enhance their child to maximise its potential future options. The fact that this baby in question might not be one's own baby or even a human baby, should not matter. This shows that for Chan species membership does not indicate what capacities are constitutive of wellbeing. The fact that this would be a baby chimp, for her, does not mean that her life would not be improved by increased human-like intelligence.

Hughes (2004) suggests that we have responsibilities to facilitate participation in spheres of social cooperation that do not end within our own species. He explains that in a future transhumanist society, there should be a hierarchy of citizenship based on personhood. In particular full citizenship should be granted to those with mature personhood including a capacity to reason, namely anyone with typical human adult capacities or above. This would come with a full right to life and self -determination. A second category of disabled citizens would be for those who have personhood without reason such as children, Apes and people with certain disabilities. They would have

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[56] I am not going to evaluate on his interpretation of Rawls as this is not important for my argument. I also will not engage with his framing of colonisation as a "cultural uplift" as discussing all the ways in which this is fundamentally problematic surpass the scope of my work.

the right to life and the right to assisted self- determination. Further bellow, Hughes distinguishes between sentient property which includes other animals, permanently vegetative humans and fetuses who have the right to not suffer unnecessarily and property which refers to inanimate objects. (Hughes, 2004, p.222-227)[57]

The above accounts although not exhaustive, summarise the principal reasons behind the idea of animal enhancement and most importantly showcase how disability, animality and biomedical enhancement are imagined together. In particular they show how disability and animality are depicted as a problem that bioenhancement can cure. Biomedical enhancement, as its advocates explain, is considered desirable precisely

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[57] Interestingly to explain why moral obligation should not be limited within human species, Hughes refers to the Harry Potter book series and in particular to Hermione Granger and her efforts to start the Society for the Promotion of Elf Welfare (SPEW) when she discovers that house elves, creatures who undertake all domestic chores in their school are not paid and also commonly mistreated. Hughes' explains that this is an example of her realising the human racism that her fellow wizards and witches commonly exhibit, and how close it can be to the main villain's, Lord Voldemort, ideology of purebloods wizards being superior to non -purebloods wizards or non-wizards. Hughes describes Hermione as being appalled by the subhuman treatment of elves and their mistreatment given that they "are nearly as intelligent as human beings, if somewhat simple-minded in their slavish, brainwashed commitment to their lives of service" (Hughes, 2004, p.91)

Admittedly I might be biased as a big fan of the books myself, but his interpretation does not seem faithful to what I take to be the spirit of the book. Hermione did not found SPEW because elves had *near human intelligence.* She objected to their mistreatment through unpaid labor or abuse which is not related to their intelligence or any other cognitive capacity. When at this same book, Dolores Umbridge, a villain, was confronted by centaurs she warned them that as creatures of near human intelligence they would be held responsible for their actions. The centaurs did not react well to be called 'of near human intelligence' and immediately proceeded to attack her as this was considered insulting and patronising.

Hughes also describes a continuity between commonly held speciesism against nonhuman creatures in the Harry Potter universe such as elves and Lord Voldemort's fascism. However, it is important to note that in the book series Doby, one of the main House Elf's whose life we see, plays a crucial role in defeating Lord Voldemort and in saving the protagonists. He did this though through the particular magical abilities that his own species had, not by showing that he also has human capacities such as using a magic wand. Lord Voldemort did not anticipate this because he never thought non-human capacities are in themselves valuable let alone a potential threat.

because it can enable people to gain further control over themselves and their environment and increase the amount of choices available to them. This understanding of autonomy becomes constitutive of a good life and a criterion of which lives are valuable. Animals and disabled people lead less valuable lives because they cannot adhere to this ideal which although, as I have argued is based on human typical functioning, is imagined to extend across species. On the contrary post human lives are more valuable than typical human lives because of their ability to experience higher degrees of autonomy and control. Bioenhancement, according to its advocates can fix disability and animality which are linked to vulnerability and dependence by eradicating them.

Overall, I would argue that there are some very troubling assumptions behind many of these claims. One issue which can be exemplified in Hughes's account is that he seems to be reproducing the same problematic speciesism as Singer. He replaces what he understands as an arbitrary category for moral consideration, that of species, with what I would argue is equally arbitrary category of human-like intelligence. As can be seen by his proposed typology of citizenship, he maintains a hierarchy based on intellectual capacities where human- like cognitive capacities are upheld as a relevant criterion of moral consideration. The only thing that seems to have changed is an expansion of who is assumed capable of human like intelligence through an emphasis on personhood.

As such Hughes account seems to perpetuate the idea that non -human animals have worthwhile lives and are deserving of moral consideration to the extent that they approach person-like capacities where the category of person is modelled after human species typical functioning. This is particularly evident in the language of “uplifting” both Dvorsky and Hughes use. As Hauskeller (2017; 2018a; 2018b, 2020) observes to uplift means to lift someone hierarchically lower.

A second issue with advocating for animal bioenhancement is that, similarly to what I discussed in the previous chapters, it associates certain cognitive capacities to wellbeing. Advocates of this notion, as Dvorsky's writing indicates, seem to presume that there are some objective reasons why human-like cognitive capacities would contribute to animal welfare. This is necessary to render animal bioenhancement intelligible.

Supporters of this project recognise on occasion that assessing how any particular augmentation can positively impact on animal lives is difficult. Hughes seems to acknowledge the possibility that an increase in cognitive capacities might not always be analogous to one in wellbeing and if this is the case then we would have moral reasons to refrain from such enhancements. He explains that if increasing cognitive capacities of an animal also increases her stress levels for example then there is no reason to go down such a path in the same way that one would be cautious to send a child to school if that resulted to literate adults with low wellbeing (Hughes, 2004)

Chan (2009) also acknowledges that cognitively enhancing a chimpanzee might not always be in her best interest or might have other problematic consequences. For example, cognitively enhancing a chimpanzee might not increase her wellbeing if it leads to her living in isolation form other group members. Given the differences between animal and human lives, speculating what could contribute to animal wellbeing can be more challenging that predicting what can be beneficial to other humans.

To assess if cognitive enhancement in animals might be beneficial, Chan turns towards human cognitive enhancement. She explains that there are evidence suggesting a correlation between increased intellect and “socioeconomic success, health and longevity”. These benefits indicate the value of bioenhancement as a positional good which as I discussed in the first chapter might raise challenges in distributive justice. For Chan this could apply similarly to chimps and give the enhanced chimp a positional advantage in competing over resources that would consequentially disadvantage other members of her group. However, she claims this does not constitute an effective argument against enhancing chimps in the same way that it would be an ineffective argument against enhancing humans.

What I would argue is a central problem behind the idea of biomedically enhancing animals for their own wellbeing is the idea that animal lives are as such worse than human lives (Hauskeller, 2020). This is not to say that animals both domesticated and wild have lives often full of cruelty, pain or hunger. Rather it is the idea that no matter how good the life of an animal- let us say a beloved pet companion – is, it will inherently be worse than a human life because human lives entail certain goods inaccessible to animals. This is precisely because humans have certain capacities that animals lack.

Such an assertion though requires an account of what makes a good life in order to determine if animal lives are inherently worse than human lives. Hauskeller explains that there are three predominant theories that could be applied in such judgements: hedonism, desire satisfaction or an objective list theory (Hauskeller, 2017, p. 5). He continues that regardless of which of these three alternatives or which combination of the three one prescribes to, there is no reason to assume that animals cannot have pleasurable experiences as they enjoy companionship, food, and socializing. Rather what seems to be the principal difference between humans and animals (or alternatively persons and non-persons) is that the later are deemed incapable of enjoying higher pleasures. [58] A dog cannot appreciate Frida Kahlo's paintings or Caballet's music. Nor can an Ape grasp how telephone's work or airplanes fly. For Hauskeller what makes biomedical enhancement of animals intelligible is precisely an underlying assumption of objective goods of which animals inherently have less. As he explains though, this idea of certain pleasures being higher than others as for example Mill argued, is rarely accompanied by a comprehensive account as to why that is. (Hauskeller, 2017. p 7)

What can be seen in the language of Dvorsky or Sandberg is the idea that animals are in an inherently inferior position to humans because more than us, they are limited by their natural abilities. Unlike us though they do not have the tools to understand or challenge these natural limitations**.** Animals lack the capacities and tools to exercise morphological freedom and control their environment (Sandberg, 2013). Rather their options are foreclosed by their natural capacities, or as bioenhancement advocates understand it, a lack of natural capacities. The common thread behind this idea is that animals- similarly to disabled people- are incapable of autonomy as control over their selves and their environment and as such their lives are inherently worse.

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[58] This is something that the Great Ape Project in Iowa aims to rectify. As Dvorsky (2015) explains this is a project in which a group of bonobos live in a house. The bonobos are allowed a significant freedom to live as they please. They are provided with numerous tools such as art supplies and television and are also taught to use touch screens to communicate. The hope is that they will develop human like capacities making use of these facilities whilst we understand what potential biomedical augmentation will be necessary for them to break the "glass ceiling" under which nature has placed them.

Humans on the other hand, even though our bodies can still be limiting we have the capacity to potentially overcome these obstacles placed by nature. These capacities though, apart from allowing us to pursue morphological freedom, also according to transhumanist delineate our responsibilities towards other species lacking them. Decisions about cognitively enhancing animals, enhancing all animals into becoming herbivores, or even allowing domesticated animals to go extinct fall onto us precisely because we are the only ones with the capacity to conceptualize and act on them. In a transhumanist world in which we control and shape ourselves and our environments animals exist because we want them to or we allow them to (Pearce, 1995; Dvorsky, 2008; Hauskeller, 2017)

Moreover, as Hauskeller notes, within a transhumanist vision animal l capacities limit not just them but us as well. Animals are unable to communicate with us in a way we can understand which imposes a limit to the knowledge we can access. Enhancing the animal makes it less animal and more accessible and controllable by us. He concludes such efforts aim at "giving animals what they need to recognize us: as their creators, saviours and ultimately superiors" (2017, p.8)

These above accounts highlight how disability and animality are framed as problems which can be addressed via enhancement. This can be seen in the language used by Hughes, Chan or Dvorsky where animals are compared disabled people. Chan compares being born a chimpanzee as being born with a disability. Dvorsky explains that "The idea of "species," while helpful in such fields as systematics and genetics, is not an entirely useful concept when establishing the moral worth of an animal. Once stripped of scientific nomenclature, nameless organisms can be classified based on their various morphological and psychological capacities. In this context, animals – including humans – can be contrasted in reference to an agreed upon spectrum of minimally acceptable modes of functioning. Put yet another way, nonhuman animals such as the great apes can be construed as disabled humans. When articulated in this way, notions of obligations, accommodation and stewardship are cast in an entirely new light." Hughes explains that animals are akin to disabled people or to children who are still underdeveloped echoing the idea that disabled people belong in childhood (Carlson, 2013)

The underlying premise is that both lack capacities they should have according to the transhumanist vision. This promise of restoration though is not necessarily limited to disabled people and animals. Transhumanism, as Bostrom and Hughes argue, will restore typical human condition to what it should always have been and what our limiting bodies are robing us from having; self-control, morphological freedom and unimpeded choices. Constrains are something that all humans share, which is why bioenhancement proponents claim we all can stand to benefit from such technological innovations. Disability and animality simply exemplify these bodily barriers which is why they both need to be eradicated. For Hughes we have comparable moral duties to uplift animal citizens as we have to uplift people with disabilities (Hughes, 2004, p.224)

This deeply problematic assumption devalues both animals and cognitively disabled humans. In the previous chapter I discussed at length how the vision of biomedical enhancement and transhumanism is structured around an idea of autonomy as control and increased choice. Disabled lives are excluded from achieving this ideal and as such are deemed less valuable. These arguments on biomedically enhancing animals are based on similar understanding of animal lives as lacking control and choice.

What can be seen here therefore is how ableism and speciesism construct and uphold each other and dictate a duty to uplift both disabled people and animals liberating them from their similarly insufficient and lacking bodies. The call for an uplift seems to mirror the narrative of typical human functioning as superior and perpetuates the idea the appropriate attitude towards all others is that of pity and intervention. As Hauskeller (2017, p. 5) explains, what places humans higher than animals and posthumans higher than humans is precisely the increased distance that separates either from the animal which is associate with disability.

Having examined the above it is important to clarify between two distinct demands. The first one is that moral obligations or moral consideration should not be limited within human species and the second one is that biomedical enhancement should extend human species boundaries.

I am more than happy to agree with the former claim that we have a moral responsibility to protect and consider the wellbeing of non-human animals. However, I claim that any such moral obligation should not be translated into an effort to bestow human like attributes to non-human animals. This is firstly because as I have argued bioenhancement advocates have not yet convincingly shown that such a process could increase animal welfare or that there are certain human goods and capacities that would benefit animals even though animals naturally lack such potential. Secondly because I strongly argue against the implicit premise clearly found in Hughes that we need to bestow cognitive capacities to animals *in order* to show moral consideration towards them. As Taylor (2017) has argued, recognizing the value of animal lives should be oriented around recognizing and protecting them for the kind of beings they are rather than assuming an inherent human superiority towards which they should be modified.

I would argue in favor of a different account of what species membership entails. Species membership should not be a necessary criterion for moral consideration. Nonetheless species membership can be important in understanding what is problematic with cognitively enhancing animals as it can play a role in understanding and anticipating what wellbeing or harm might be like for different beings. As such it can protect particular interests that become meaningful within one's species.

For example, my dog who I immensely care for, eats her food from her bowl in the kitchen floor without this posing any problem. However, if we were to learn that residents in a care facility had to eat of the floor we would feel morally outraged. This would probably be the case even if eating from the floor might not actually physically harm the residents and even if we doubted that many of them had access to concepts and capacities to recognize this as inappropriate or undignified behaviour. The fact that they are human is fundamental in interpreting such an action as problematic in the way that it would not be for a dog. [59]

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[59] Crary refers to an incident with Sesha to contemplate similar questions: " As [Sesha] is wheeled out of the bathroom, wrapped in only a towel, and brought back to her room, the director of the agency walks in and is dismayed by what she sees. Although [Sesha] is entirely draped in her towel, the fact that her room is so close to the public area of the house and that she had to be wheeled out through a corridor that was somewhat far from her room displeased the director. [The director] insisted that a room further back, one that afforded the resident more privacy, be transformed from an equipment room into one that was suitable for occupancy and that the room close to the public area serve instead for equipment storage. The agency head explained that

On the other hand, it is important to remember that typical species functioning and the tyranny of the normal has been vehemently challenged within disability studies especially in the way it has informed the medical model of disability. As such it is important to recognize an account and role of the category of the species functioning that is not limiting as has been a central claim within disability studies. Sunaura Taylor whose work I have extensively referred to has arthrogryposis. When she works in cafes she explains that she retrieves objects from her bag by using her mouth. “When I use my mouth instead of my hands in public, I realize I am transgressing boundaries, not only of able-bodied etiquette but of the ways in which one is supposed to inhabit a human body. We use the mouth for language and for eating yet it is deeply private, an orifice containing germs and breath and slobber. The mouth is sexual. The mouth is animal. Hands however are human. Humans are supposed to have opposable thumbs and dexterous fingers. Like walking upright on two legs, human hands have been said to represent our big brains- as hands make and use tools, they open the door for human culture to emerge. Hands represent our physical agility and separation from other species. I feel animal in my embodiment and this feeling is one of connection not of shame. Recognizing my animality has in fact been a way of claiming the dignity in the way my body and other non-normative and vulnerable bodies move look and experience the world around them. It is a claiming of my animalized parts and movements, an assertion that my animality is integral to my humanity. It’s an assertion that animality is integral to humanity.” (Taylor, 2017, p.115)

What we need is an understanding of species that has room for both these accounts whilst also not limiting the scope of moral consideration within its frame. This is of course not an easy task, and it would require both conceptual and material changes. Taylor for example explicitly acknowledges the role of her privilege as a middle -class white woman which has enabled her to reclaim her animality, a privilege that is not shared by all. Nor of course would all disabled people be interested in such a project of reclaiming animality. However, given the similarities between how disability has

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having this young woman wheeled through a corridor where young male residents and staff could encounter her . . . was an offence to the resident’s dignity.

(Kittay 2005b, 95–96 in Crary 2020)

been discussed in animal ethics and bioenhancement literature it can be a useful tool in understanding how and if disabled people can reclaim the posthuman.

Conclusion: A Space for Future coalitions: What is still missing from the bioenhancement literature?

So can bioenhancement threaten equality and perpetuate discrimination and what kind or relevant parameters can disability elaborate? It is easy to see why bioenhancement is so tempting. When being offered the possibility of being stronger, healthier and most importantly smarter, most of us would intuitively jump to the opportunity. If one does not share bio-conservative concerns over playing God or tampering with nature, then it is indeed difficult to put forward a convincing case as to why we should stop striving towards achieving what bioenhancement promises.

However, in closer inspection there are grounds for serious concerns especially regarding how these technologies can impact on the most vulnerable. Throughout this thesis I argue that biomedical cognitive enhancement is not inherently wrong, or at least not in terms presented by bio conservatives. However, there are two underlying notions that seem to be at the very heart of the biomedical cognitive enhancement discourse. Firstly, from concerns over coercion and quick fixes to the implication of procreative beneficence and the proximity of enhancement to eugenics, there is an unresponsiveness of this neoliberal framework to sociopolitical factors that restrain the very autonomous choice that biomedical cognitive enhancement proclaims to uphold. Biomedical cognitive enhancement as I have extensively argued, is governed by the ideal of autonomy understood as individual control over oneself and one’s environment as well as increased choices. It is presented as a positional good in the labor market promising to make us more productive, competitive and able to achieve higher degrees of self-mastery. Yet this same literature largely ignores social factors and exploitative relations that threaten these capacities. For advocates of bioenhancement it seems that modifying individual bodies is the preferred method of promoting this understanding of autonomy. This I have explained indicates a reasoning which legitimizes and perpetuates current social and working relations as they are developed through the free market. Nonetheless this neoliberal framework is something that the literature itself rarely acknowledges or justifies. Rather their desirability is taken for granted. This does not mean that biomedical enhancement is necessarily incompatible with demands of structural changes and social justice. However, it becomes so when its desirability is based on social inequality and ableism.

Secondly, I argue that the bioenhancement enterprise and cognitive bioenhancement in particular, unlike what some of its supporters claim has no room for disability. That is because cognitive bioenhancement is striving to increase what the literature takes as necessary for a good life, namely the above-described narrow understanding of autonomy. Biomedical enhancement could in theory offer a plethora of new ways for people -disabled and nondisabled- to develop new capacities and traits they value. Advocates of bioenhancement describe a future with broader morphological freedom in which the existence of posthumans would trivialize current disabilities. However, a careful examination of the literature shows that this is not inherently the case. This becomes clear through the objections and obstacles faced by those who attempt to pursue any non-typical trait such as deafness. Despite the claims that disability justice and bioenhancement have aligning goals, I would argue that bioenhancement welcomes the proliferation only of specific traits and specific bodies. Disability understood as vulnerability and dependance is inherently incompatible to the autonomy bioenhancement aims at promoting. Disabled bodies are limited, and any such limitation needs be overcome. For bioenhancement literature disability should not be accommodated but rather eradicated.

In the first chapter I discussed biomedical cognitive enhancement understood as the use of biomedical means including drug administration, genome editing, embryo selection and IVF in order to enhance capacities relating to the storing and processing of information. There are of course distinctive issues that would rise with the use of each of these technologies. My goal here was not to address such differences. Rather I wanted to focus on issues that these practices would share by virtue of their common aim, namely, to make better humans.

In the first section I examined the most commonly held objections to such practices raised within the bioenhancement literature. These included concerns over cognitive bioenhancement being a form of cheating, undermining the grounds of praiseworthiness, providing an unfair competitive advantage, being a quick fix to social problems, threatening authenticity and being the product of coercion. By addressing these concerns, I explored how the use of cognition enhancers is linked to competition within the labor market. My aim was to show how biomedical cognitive enhancement advocates attempt to legitimize the use of bioenhancers by referring to similarities they share with existing practices. They claim that traditional cognitive enhancement is accepted as something desirable and that the above concerns are also common in the diffusion of most scientific innovations. However, this is insufficient as they do not reflect on the desirability or fairness of such existing frameworks. Therefore even if their account of biomedical cognitive enhancement does not create new problems of inequality and discrimination it is governed by and it perpetuates inequalities and discrimination already existing in frameworks of competition.

In the second section I take a step from discussing why biomedical cognitive enhancement should be permissible to ask why it is desirable. I explore how biomedical cognitive enhancement is either explicitly or implicitly advocated on the grounds that it can increase wellbeing. This however as bioenhancement proponents explain is not because there is a direct relation between intelligence and wellbeing. Rather it is firstly because biomedical cognitive enhancement can function as a primary good by increasing a person’s capacity to conceive, reflect and actualize their chosen life goals. Secondly because increased intellect is linked to other markers associated with wellbeing such as material wealth or social respect and inclusion. In regard to the first parameter, multiple scholars point out that although instrumental reason is a useful tool this does not necessarily mean that increasing it would also increase wellbeing. Regarding the second, I explain that cognitive bioenhancement can increase wellbeing by enabling individuals to compete over resources or to comply to dominant social norms. What makes this problematic is the literature failing to examine whether the social structures it upholds are just at the first place. It also does not challenge the dominant role that the free market plays in distributing these material and non-material markers of wellbeing. Most importantly though what seems to be behind biomedical cognitive enhancement as a way of increasing wellbeing is an unexamined association of enhanced cognitive abilities with autonomy. The understanding of autonomy put forward within the bioenhancement literature is control of ones ‘self, control over one’s environment and an increased amount of choice. This narrow definition of autonomy becomes a marker of a good life. Traits that can further this ideal are deemed valuable and worthy of being pursued through the scientific promises of bioenhancement. Traits however that seem to hinder autonomy are deemed undesirable and an indication of a life which holds less wellbeing and by extension a life which holds less value.

In the second chapter I take a closer examination of which lives the bioenhancement literature deems less desirable. As such I turn to examine disability. The way cognitive disability is conceptualized and treated lies in the heart of how biomedical cognitive enhancement is conceived. Biomedical cognitive enhancement is portrayed as a way of increasing the wellbeing that cognitive disability is described as compromising.

To better understand how these ideas are connected, I start by examining different models of disability. I explore the medical model which understands disability as a departure from typical species functioning. As such it is viewed as an individual tragedy and an individual problem. This model is significant not only because of how dominant it has been but also because it seems to describe the main way in which disability- and enhancement- is understood within the bioenhancement literature. Namely as individual traits severed from the social environment in which they are embedded. I then turn to the social model of disability which came as a direct challenge to the medical model. This model shifts the focus from individual bodies to social structures to put forward the claim that disability is should not be equated with any individual physiological trait. Rather it needs to be understood within the social arrangements that translate such traits into disabilities by failing to accommodate non typical bodies. I then turn to a third model of disability proposed by enhancement advocates, namely Savulescu and Kahane. They directly link disability to disadvantage and enhancement to advantage. I argued that this not only demands a drastically revisionary account of disability but also lacks the finer conceptual tools required for generating a normative framework. That is to say their proposed framework does not differentiate between disadvantages generated by just or unjust social structures which could require a different response.

I then attempted to scrutinize the principal premise, which is latent throughout the bioenhancement literature, namely that disability is inherently bad which would entail that bioenhancement is inherently good. I explored the model of disability as mere difference to test the validity of commonly held intuitions that disability is not merely a different way of navigating the world but that it is inherently worse and as such undesirable. To do so I explored the epistemic injustice to which disabled people are often subjugated. This firstly involves their testimonies about their subjective wellbeing and what a life with a disability entails being met with undeserved skepticism. Secondly it involves a gap in the pool of collective knowledge regarding disabled lives, which would enable them to articulate and better understand themselves and their social environment. Such testimonial and hermeneutical injustice can proliferate one another and contribute to the epistemic marginalization of disabled people.

What became clear is that there are certain similarities in how both disability and enhancement are understood by bioenhancement supporters. In particular both concepts are defined through typical species functioning and wellbeing, both seem to identify interventions to individual bodies as an appropriate response to social challenges and both seem to evaluate the desirability of physiological traits separately from the social environment in which they belong.

I finally turn to procreative beneficence as an example of cognitive enhancement. I discuss how procreative beneficence reflects an ableist understanding of what a valuable life is, namely a life in which an autonomous individual has the greatest amount of options and control. This is made clear though cases in which parents select non typical traits for their children. I examined the case of a deaf lesbian couple opting for a deaf sperm donor as well as the case of Ashley X in which enhancement was understood as the diminishment of Ashley’s capacities. These cases I argued exemplified how bioenhancement is envisioned in a particular way which excludes certain people from being invited to make use of these new technologies and precludes certain traits from being proliferated.

The third and final chapter is dedicated to discussions on moral status. Moral status has emerged as a focal point within the literature because it is a main way through which bioenhancement supporters frame issues of inequality. The emerging questions bioenhancement literature articulates and then attempts to answer is firstly whether posthumans could exist and have a higher moral status than us, mere humans and secondly, if this would be harmful to us and in what ways.

To better evaluate the way moral status is conceptualized I start the discussion within animal ethics. In particular I focus on a threshold respect-based concept, a gradient interest-based concept and a species membership concept of moral status. A respect-based threshold view, commonly associated with a Kantian tradition, asserts that humans have certain traits unique in kind to our species which bestow moral status. In particular humans are considered unique in having certain cognitive capacities which allow them autonomous action, to be mutually accountable and to give reasons for their actions. As this is a threshold concept, the degree in which someone exhibits these traits is irrelevant. A such it can establish moral equality having a significant advantage over competing accounts. On the other hand, an alternative account of moral status or rather of moral consideration is gradient and interest-based. This proposed framework understands that rather than any particular cognitive capacity, it is sentience that is the appropriate basis of moral consideration. Embedded in a utilitarian framework this approach dictates that moral consideration should be relevant to the interests a being is capable of having.

Both frameworks have been used to challenge the importance of species membership in bestowing moral importance. The idea that merely being human entitles everyone to equal moral consideration is tempting. Nonetheless this has been vehemently criticized as it unfairly excluded non-human animals even if they possess relevant individual capacities including both a capacity for pain and pleasure as well as cognitive capacities.

I then turned towards biomedical enhancement literature to explore how posthumans are conceptualized. Overall, the majority of scholars seem to agree that the emergence of posthumans could undermine human moral status or human interests. Even scholars like Buchanan who are skeptical about the emergence of posthumans with a post-person status has voiced concerns that beings with higher capacities and interests could undermine human claims to shared resources or even structure dominant frames of social cooperation in a way that would render them inaccessible to mere humans. Although the degree of such dangers varies depending on the competing accounts of moral consideration what is interesting is that a higher posthuman status, even if undermining human interests, is not necessarily viewed as unjust. This is because as I have tried to show, either framework upholds that moral consideration needs to be justified and most importantly is bestowed on the basis of individual capacities.

Having critically engaged with how bioenhancement literature conceptualizes issues of moral equality and posthumans I turn to the second main reason I started my investigation within animal ethics Namely, I look at how the way animal ethics literature engages with disability can highlight certain problematic ways in which bioenhancement literature engages with disability.

This can be seen through the Argument for Marginal Cases. Its main formulation is that if individual capacities are the basis of moral consideration and if species membership is an arbitrary factor that should bear no significance to moral status, then the discrepancy between how animals and disabled people with comparable capacities are treated is not justifiable. I examined how the AMC whilst arguing against a species-bound moral consideration links disability justice to animal wellbeing. I then followed the arguments against speciesism to explore reasons behind animal bioenhancement and explored how bioenhancement understands the lack of autonomy as control as a common problem running through both animality and disability rendering both worse states of being.

In these remaining few pages, I would like to further this argument and offer some final thoughts on the relation between bioenhancement, disability and animality and on the possibility of a future allyship between bioenhancement advocates and disability justice advocates. To do so, I will revisit the biomedical enhancement literature and the idea of human enhancement to explore commonalities between how animal ethics and bioenhancement literature have conceptualized disability. In particular, I draw on Carlson's analysis of the AMC being philosophically exploitative of disability to showcase the ways in which biomedical enhancement literature has similarly been exploitative.

Philosophical exploitation in animal ethics

In chapter three I argued that the AMC is a problematic way of advocating animal welfare. Not only does it show a lack of engagement with disability studies and an ahistoric theorizing of the relation between disability and animality, but it also limits the discussions of animal welfare to concerns about their suffering. If this is the case though, then why has the AMC and the ideas it encapsulates been such a prominent part of animal ethics discussions?

There are two main frameworks that have facilitated the use of the AMC. Firstly as I have argued discussions on moral status or moral consideration whether scalar or threshold based affirm the idea that the basis for either are individual capacities. As such species membership should be abandoned and replaced by personhood as the morally relevant category. This provides the necessary philosophical background against which AMC becomes intelligible.

A second factor that facilitates a framing of animal wellbeing in relation to disabled people is that animal ethics represented a good deal of the literature that engages philosophically with cognitive disability. On the one hand disabled people themselves- especially people with cognitive disabilities- are underrepresented in academic setting and disabilities studies has only relatively recently started emerging and being acknowledged as a field of study[60]. Carlson anecdotally explains that when she mentions her academic interest in cognitive disability she is often asked if shh has a disabled friend or family member (2010, p.2) as if this is the primary reason why one would be interested in disability as a field of enquiry.

On the other hand, western philosophical tradition has been overall rather hostile towards disabled people. As Carlson explains, Plato would have left disabled babies to die, whilst for Lock and Kant people with cognitive disabilities do not qualify as fully human. In contemporary discourses when cognitive disability is discussed it is still often in relation to animal rights. Berube explains that “So for some years now, I’ve been in the position of saying to my colleagues in philosophy, ‘‘Your silence with regard to cognitive disability is most dismaying,’’ followed in short order by ‘‘Actually, your undervaluation of the lives of people with cognitive disabilities is even more dismaying. I liked you all better when you were silent.’’” (Berube, 2010, p.97)

This is thankfully changing with disability being recognized as a legitimate and useful tool of philosophical analysis which can contribute to various discussions, both concerning issues related to disabled people and beyond. However, a significant part of existing philosophical literature does not engage with disability to address issues and concerns regarding the way disabled people are treated, what they are owed or how the concept of disability can be extended as a conceptual tool to other discourses.

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[60] For a more thorough discussion see Brown and Leigh, 2020

Rather as Nussbaum (2010) explains, philosophical discussions especially those pertaining conversations of moral status or even distributive justice use disability as a conceptual tool to test the validity of arguments without engaging with what these arguments imply for the disabled[61]. An example of this is precisely the AMC where disabled people are placed at the margins of personhood or of humanity and serves as a test of cohesiveness and conceptual clarity of various theories of moral status.

However, although the above factors might have contributed to the proliferation of such arguments for marginal cases, the biggest reason behind the continuing use of the AMC is its effectiveness. It is an argument that generates shock and intense discussion and as such it has rhetorical power even though I would argue it is not necessary for promoting animal welfare. Let us imagine for instance that though prenatal screenings, encouraging euthanasia, preventing disabled people from going on transplant lists or accessing to adequate healthcare, we reached a stage where extended cognitive disability was eradicated. Presumably, Singer would still advocate for animal liberation even if there were no humans with comparable capacities. That is because animals would still be sentient creatures who have interests. Singer's goal is not merely to argue in favor of consistency between how we treat animals and disabled people. This is evident as even within his own espoused framework of how moral consideration is grounded, it would be equally cohesive to give full moral consideration to the cognitively disabled and elevate the status of animals which would presumably demand of us to become at least vegetarian.[62] It would also be equally consistent to continue the mistreatment of animals and extend it to the disabled. Yet he rejects these two premises in favor of his proposed alternative of a scalar moral consideration which establishes a hierarchy based on higher cognitive capacities (Singer, 2010). This indicates that there is no inherent reason for these distinct groups to be discussed together in terms of what moral consideration is appropriate. As Carlson claims even Singer there is no necessary reason to argue for animal liberation in relation to moral consideration for the cognitively disabled aside from the fact that it seems to yield the desired results (Carlson, 2013, p.145).

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[61] Nussbaum (2010) refers to this as a direct and indirect challenge that disability can raise.

This is precisely why for Carlson the AMC constitutes an example of philosophical exploitation. Animal and disability justice are pitted against each other and are presented as incompatible. Out of this comparison though it is only one group, animals, which stands to gain any further protections. Disabled people risk being further marginalized without the promise of any benefit.

This is not something though unique to the AMC. Animal advocacy both within academic and activist contexts has on multiple occasions advanced narratives that exploit disability to bring about desired results. One example form outside academia for instance is PETA. As one of the biggest groups advocating for animal rights PETA is often considered as representative of moral veganism and their campaigns generate a lot of traction. However, some of these campaigns have been blatantly discriminatory and have given disability rights advocates legitimate reasons to be skeptical. Mirroring the "Got Milk?" advertisements for dairy milk, PETA launched a Milk Causes Autism campaign with the slogan "Got autism?". Similarly, troubling was its Fishing Hurts campaign stating that "PCB will make you stupid". This comes in addition to the broader problem with PETA and the euthanasia of animals which are ill or disabled or otherwise deemed incapable of having any "quality of life" a narrative that disability scholars particularly those discussing euthanasia often criticize.[63] (Taylor, 2017; Salomon, 2010)

The issue here is that animal rights movements are often willing to adopt various narratives as long as they can help promote their cause recognizing that not everyone who adopts a plant-based lifestyle does so for moral reasons. This is why animal welfare organizations often underline the environmental impact that the meat and dairy industries can have on the planet as a way to attract support from a broader audience with different priorities. Their aim is to move people towards a vegetarian or vegan lifestyle whose primary concern is not animal wellbeing. This is not to say that animal welfare, health or environmental impact of food production should not also be examined together. Nor is it the case that either individual people or animal advocacy groups are also not sincerely concerned about the environment. What renders this

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[63] See Autistic Self Advocacy Network, 2008. A similar observation could be made with the way vegan advocacy exploits fatphobia in promoting a vegan diet as a means for weight loss and attaining a certain body type or health benefits.

problematic in the case of disability is that animal welfare advocates endorse or at the very least tolerate ableist narratives that actively harm disabled people as long as this is an effective way of mobilizing people to care for animal welfare. Such practices not only denote a philosophical and political exploitation of disability but also continue entangling together disability rights and animal welfare in a way that portrays them as incompatible.

Philosophical exploitation in bioenhancement

From the above section it comes as no surprise that there is a tension between advocates of disability justice and advocates of animal welfare. This becomes apparent not only in activist cycles but also academically with many philosophers of disability understandably being very hesitant to pursue an analysis that would explore commonalities between disabled people and animals. In this section I want to turn from the relation between animal welfare and disability justice to disability and biomedical enhancement. In doing so I would like to address the possibility of an allyship between biomedical enhancement literature and disability rights advocacy.

My aim is to build on key themes and ideas described throughout the previous chapters in which I explained that biomedical enhancement equates autonomy to control and maintains it as a criterion of a valuable life. This I tried to show not only seems incompatible to animality but also to disability understood as vulnerability and dependence. This is why I maintain that an allyship between biomedical enhancement as is currently presented and disability justice is unattainable. Rather, what seems to be the case is bioenhancement advocates appropriating aspects of disability justice to promote bioenhancement envisioning a future in which there is no place for disability. Similarly to animal ethics, they proliferate assumptions and narratives that are harmful to disabled people, exploit the fear of disability and the promise of a cure in order to advance the enhancement project.

Biomedical enhancement is a topic that generates controversy among bioethicists. This is also the case among disability studies. On the one hand there are disability rights advocates who welcome the possibility of bioenhancement claiming that disabled people should embrace the possibility of bioenhancement and even posthumanism. This is based on multiple different grounds. Firstly**,** there is no doubt that, like everyone else, disabled people have benefited from new technological developments. From prosthetics to interface technologies, cochlear implants[64], and braille applications on smartphones it is evident that scientific progress has increased the ways and spheres in which disabled and non-disabled people can operate. Biomedical enhancement could contribute towards the same direction. It could enable disabled people to have a wider scope of movement or action, it could increase accessibility and could enable further participation in the labor market allowing for tangible improvements in individual lives.

Any such scientific innovation could of course benefit everyone. However, as bioenhancement advocates argue, when it comes to biomedical enhancement disabled people could be at the forefront of innovation. The medical model of disability which asserted a normative understanding of typical species functioning, has been extensively challenged by competing frameworks of disability. Disability scholars have set the foundations against typical species functioning and against the tyranny of the normal by challenging a dualistic understanding between ability and disability, developing an understanding of normal in statistical terms rather than in terms of functionality and asserting the central role of the social environment in order to understand disability (Amudnson, 2000). As such disability has challenged the normativity of species normal or that there is one way of interacting with one's environment that is inherently better than others.

This does not only refer to how disability studies paved the way for bioenhancement advocates to argue in favor of radical enhancement that goes beyond therapy and restoration or beyond typical species functioning. It also refers to how disabled people are already experience different embodiments and are familiar with adaptive technologies. From prosthetics to mobility aids, Dvorsky (2003) explains that "as the disabled are discovering, when it comes to prostheses and other assistive devices, the sky's the limit; they no longer feel compelled to mimic the human form. For the handicapped, the impetus towards "human normalization" is as irrelevant and useless a notion as it is offensive.". For Dvorsky (2003), disabled people already free from the

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[64] Coachal implants have also caused some controversy between the Deaf community (Kafer, 2013)

"yuck factor" that might halter non-disabled people from radical bioenhancement, will have the opportunity to reclaim such technologies in and re-invent themselves.

A second reason for an allyship between people with disabilities and advocates of bioenhancement is that in a transhumanist future, disability will become trivial. [65] Bostrom describes a posthuman talking and explaining that "I've reached a much greater level of personal development and maturity than merely human . . . . I'm so much smarter than merely human, he takes weeks and maybe even months to read books that I read in seconds . . .. I routinely create artworks, which he could understand only on the most superficial level. Even viewed this way they strike him as wonderful master- pieces. I will be so much better as a romantic partner given that I am capable of love that is stronger, purer, and more secure than he or any human has yet harboured" (Wasserman, 2010, p.30–31).

The existence of such beings would dramatically change what is understood as disability. That is because both a disabled human and a non-disabled human would be significantly lacking in capacities compared to a posthuman. Compared to posthumans such as the one described by Bostrom, the difference between a non-disabled human and for example a mobility aid user or a person with Down Syndrome becomes negligible. Species norm is no longer the criterion for quality of life and as such does not exclude those who don't adhere to it. The emergence of posthumans therefore would undermine dominant views of what disability looks like mediating the stigmatization of disabled people. Although, as Wasserman (2012) explains, a fundamental expectation for this to succeed would be the emergence of a plethora of valuable ways of being. He points out that "it would be cold comfort if these norms were simply replaced by higher ones on some linear scale. But radical enhancement will be nonlinear; no particular mode of functioning, form or appearance will be privileged" (2012, p3)

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[65] This bears similarities to the argument in favour of the welfare model of disability advocated by Savulescu and Kahane (2011). In their proposed analysis disability was equated to disadvantage. This implied that the criterion for disability is not related to typical species functioning but rather to the degree in which it frustrates particular goals. As everyone has physiological or psychological traits which are disadvantageous everyone is always disabled and as such the stigma of disability is eradicated.

Finally, as Savulescu (Dunlop & Savulescu, 2014) or Bradshaw (2009) explain, scientific advantages- such as nanotechnology- can facilitate the social participation of disabled people by helping them become more productive in the labor market. Moreover an enhancement free of morphological limitations based on species typical functioning can open new doors of a diversity that can positively contribute to the social whole as people would be enabled to explore modifications that do not entail competitive disadvantages.

This is a key point that many scholars discussing bioenhancement have put forward and it is especially discussed in terms of biomedical cognitive enhancement. Namely biomedical enhancement could be used to level the playing field allowing people with cognitive disabilities greater opportunities to increase their wellbeing by competing in the labor market for positions that come with better material and non -material remuneration.

These three arguments are of course not exhaustive of potential coalitions between bioenhancement and disability. Given the shear heterogeneity of disability and the little concrete knowledge we have on how bioenhancement could look like there could be a plethora of different possibilities. In regards though to the three outlined above, I will attempt to show that there are good reasons for remaining aprehensive.

In terms of the first, there is nothing inherently wrong with an enthusiasm for new possibilities made available through scientific advances. Nor is there anything necessarily wrong with allowing both disabled and non-disabled people to make use of such advantages to increase their wellbeing. In fact it is completely compatible for someone to value their disability for most part and still appreciate the possibility to modify a particular aspect of it. Whether or not there could be room for a coalition between disability rights and bioenhancement advocates would largely depend on how these opportunities where actualized. That is to say, an allyship based on a mutual appreciation of scientific innovations would need to allow for the fact that not everyone who is disabled might want to make use of them. As I have argued extensively on the previous chapter the assumption that disabled people would all immediately jump to the opportunity to eradicate their disability is often based on prejudices and biases which devalue the lives of the disabled. As many disability justice activist state, scientific innovation should not be limited in trying to cure or eradicate disability. Rather it could focus on potentially increasing life expectancy or managing particular symptoms.

Moreover, even for those who would like to make use of such innovations, there is still a need for extensive discussion on what that would look like. It is important to acknowledge as Goering and Klein (2020) point out that the kind of research and scientific innovation that gets funded is determined by a plethora of political, financial as well as philosophical parameters. This means that it is unclear the extent to which biomedical enhancement would undertake research specifically to benefit people with disabilities which in turn can impact on the way scientific benefits are experienced or accessed. Technologies such as the development of an exoskeleton might benefit those with mobility limitations but can also have military applications. This implies that which disabilities benefit from scientific advances can often end up depending on the free market. What Goering and Klein warn against is the possibility of disabled people in the forefront of scientific progress in which they disproportionately bear the risk that any new biomedical enhancement might bring.

For example, when discussing pharmaceutical cognitive enhancement Savulescu (Dunlop & Savulescu, 2014) explicitly explains that any biomedical technology needs to be safe for the person undertaking it in order to be considered as a legitimate practice of enhancement. Nonetheless, biomedical enhancements as most medical procedures might still entail a certain level of risk. Savulescu claims that pharmaceutical cognitive enhancement will benefit the most those on the lower spectrum of intelligence or bellow due to the Inverted U Impact.[66] A such, he points out, it can be reasonably argued that this group of people in the lower end of intelligence are the best candidates to receive first the respective pharmaceuticals. This is dictated by the risk to benefit the ratio they would enjoy. The reward that they stand to gain is much greater as the limitations in their day to day lives are also greater.

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[66] The Inverted U Impact as Dunlop and Savulescu (2014) use it describes the idea that the further bellow average intelligence someone is, the more impactful bioenhancement will be. One of the reasons I am sceptical about this is that all else aside, it mirrors the ableist reasoning of valuing nondisabled lives more as they will benefit the most from continuing to live**.** See for e.g., McMahan (2009), Kamm (2015).

Assuming that this is accurate there are two objections one should address. Firstly the mere fact that cognitively disabled people might benefit the most from experimental cognition enhancers does not offer conclusive reasons to assume that they should also bear the most risk. For example presumably cancer patients would benefit disproportionately from experimental cancer medicine but we do not necessarily limit medical testing to them for that reason. Rather there can be other considerations such as who would overall face minimal risk. To link the obligation of assuming risk with the potential benefits invokes particular ideas of how risks and benefits should be distributed.

For instance, disabled people are not responsible for being in such a position where they would benefit the most from cognition enhancers. Being disabled does not necessary reflect choice, particularly in the case of mild intellectual disability, as much as it can reflect luck. There is no one obviously correct way of distributing fairly the risks associated with disability and even more so it is not evident that these risks should be individually especially as disability is socially mediated. A person with an intellectual disability is not necessarily harmed by her impairment but rather often faces social exclusion and barriers as I have extensively discussed in the previous chapter. There is no obvious reason why she should therefore undertake the medical risk associated with new scientific advances to manage problems she faces due to social exclusion.

Regarding the second argument about biomedical enhancement and transhumanism trivializing the stigma of disability, there are again reasons to be skeptical. There seems to be a discrepancy between a posthuman vision that would free disabled people from the tyranny of the normal and the kind of enhancements proposed by the bioenhancement literature. Morphological freedom as the control over our selves and the capacity to modify what is seen as a malleable body to better fit our identities and desires has been in the heart of bioenhancement as well as transhumanism. Not only does it manifest the central goal of bioenhancement to achieve individual autonomy, but it also exhibits the neoliberal logic underpinning the enhancement enterprise. The body can and should be transformed because it is part of our human capital. As such there can always be room to increase its capacities and productivity (Dolezal 2016)

As I have been discussing though throughout the previous chapters, biomedical enhancement, as is currently imagined, might not allow for the morphological freedom that Sandberg (2013) describes. He explains that disability and transhumanism both argue for the right to a different body. However as I have showed, biomedical enhancement literature does not embrace all different bodies as equally worth having. Disabled bodies are not included as can be seen though the negative reaction against selecting deaf sperm doners or the call for procreative beneficence. Rather this morphological freedom is catered to people with bodies and minds that adhere to the ideal of autonomy as control, choice and independence.

This can also be seen in discussions on animal enhancement and posthumans. Animals are viewed as hierarchically lower because they lack these capacities and goods that are available to humans such as the capacity to challenge limitations that nature has placed on us. This is why cognitive enhancement is proposed even if it is something outside their typical species functioning with a questionable contribution to their' welfare. However in the case of animal bioenhancement this kind of transformation does not indicate morphological freedoms but rather morphological limitations. As Hauskeller (2017) aptly explains, freedom to control oneself and one's environment is promised in exchange to freedom to be the kind of beings animals are.

The vision of the posthuman as described withing biomedical enhancement literature and the work of scholars such as Buchanan, Savulescu, McMahan, Bostrom which I have discussed, also does not go far enough to challenge a hierarchization of capacities. Rather as I have discussed in this chapter, it seems to associate typical human traits with personhood which it then extends to posthumans. Even as a speculative category, the traits they seem to possess- great cognitive capacities, rationality, memory, accountability- propagate current norms associating personhood to typical human functioning. I would therefore agree with Wasserman that this is “cold comfort” as the current hierarchization of capacities and the lives of those who have them are extended across species. A such these accounts foreclose possibilities of disabled people “reinventing” themselves as Dvorsky (2003) would have it. This is exactly because the scope of acceptable reinvention is limited to different ways of becoming autonomous and in control.

Finally, I would like to turn to a possible allyship between disability and biomedical enhancement on the grounds of disabled people being enabled to become productive within the labour market. What makes this argument particularly interesting is that it comes as a response to some of the most discussed criticisms against biomedical enhancement. Namely that it will exaggerate existing inequalities as it will be accessible to only the wealthy providing them with additional competitive advantages. These concerns, as I discussed in the first chapter, generated a conversation about the extent to which bioenhancement should be made accessible to all. Advocates of bioenhancement as a response to these fears conceptualised of bioenhancement as a way to promote egalitarian goals and decrease inequality.

The precise ways in which biomedical enhancement could advance egalitarian goals would depend on a plethora of factors. One parameter is that bioenhancement could challenge or change notions that are prominent in many egalitarian frameworks such as the distinction between natural and social goods, the role of luck or the scope of dessert and responsibility. This is especially the case since a lot of the discussion of distributive justice within the bioenhancement literature is influenced by a rawlsian tradition and luck egalitarianism. Both of these frameworks bring the concept of natural lottery to the spotlight and question the significance of morally arbitrary factors and the impact they should be allowed to have on the distribution of opportunities or resources. The prospect of biomedical enhancement questions the very existence of a natural lottery and brings forth concerns on what the limits of the scope of justice are (Hauskeller 2016)

Therefore the ways in which bioenhancement could reshape our thinking of distributive justice would depend on different understandings of the purpose or scope of distributive justice should be; Indicatively Giulblini and Minerva (2019) distinguish between stronger and weaker egalitarian approaches, Dunlop and Savulescu (2014) argue for an equality of welfare inspired approach whilst Farrelly (2004) distinguishes between a sufficientarian, a prioritarian and an egalitarian approach. Overall though, within the bioenhancement literature the most popular approaches seem to fall within a sufficientarian, a prioritarian or a utilitarian account of distributive justice (Buchanan 2001; Lindsay, 2005; Savulescu 2006; Dunlop & Savulescu, 2014; Nam, 2013; Holtug, 2011; McMahan, 2009)

By this I mean that most of the bioenhancement literature suggests that biomedical enhancement directly address the arbitrary distribution of natural capacities and as such could be applied for egalitarian purposes understood under one of these three approaches. Firstly, variations of sufficientarian approaches have been suggested by multiple scholars such as (Giubilini & Minerva, 2019; Buchanan, 2011; Holtug, 2011; Nam, 2013). The main premise of this approach is that biomedical enhancement should be used to ensure that people are sufficiently capable of participating in dominant schemes of social cooperation. There is a minimum of capabilities that everyone should be able to reach. Inequalities that manifest over this threshold are not necessarily within the scope of justice. In other words, as Farrelly (2004) explains, the goal of biomedical enhancement is that everyone has enough but not necessarily an equal amount of opportunities.

A second account would be the prioritarian understanding of biomedical enhancement which broadly calls for such technological advantages to be available to those who are worst off. The rawlsian influence here is evident as this framework is also referred to as the Genetic Difference Principle (Farrelly, 2004). A prioritarian approach of biomedical cognitive enhancement can be compatible with both a strict and a lenient commitment to equality. A strict commitment to equality would dictate a targeted restriction to cognitive enhancement access. This would mean that once such processes become available, access could be allowed only for groups with lower intellectual capacities to increase their opportunities. In this way the intelligence gap will start closing and with it, social goods would become more equitably distributed.

A third utilitarian framework is primarily associated with Savulescu' account of enhancement as wellbeing which I have discussed in previous chapters. For Savulescu, bioenhancement can be used to minimise discrepancies between the welfare people experience. This can can be achieved through a wide range of methods and applications from treating diseases which impede species typical functioning, increasing human natural potential through enhancing existing traits or increasing super-human abilities beyond species norms- also referred to as post-humanism. Bioenhancement should be available to people when it can help improve their lives in ways that are not based on a narrow or mistaken understanding of human wellbeing.

My aim here is not to discuss which account of distributive justice is more convincing or how biomedical enhancements could operate within each of these frameworks. Rather it is to highlight how attempts to utilise bioenhancement for purposes of distributive justice- regardless of any particular understanding of distributive justice- can be shaped by problematic and ableist premises. To elaborate I will start by focusing on Savulescu's account as one of the most well-known advocates of bioenhancement and as a scholar whose work I have extensively engaged with throughout this dissertation.

Savulescu explicitly focuses on how bioenhancement can be applied for purposes of distributive justice especially towards people with mild cognitive disabilities. His claim is that disabled people are often disproportionately affected by poverty for example by being unable to enter the job market, to hold a higher paying job or having potentially more extensive expenses. As such there are good reasons why cognitively disabled people would benefit from bioenhancement.

As I discussed in the previous chapter, he maintains that there is a relation between intellect and markers of wellbeing and claims that an increase in intellect overall can lead to increased life prospects (Sandberg & Savulescu, 2011; Dunlop & Savulescu, 2014; Buchanan 2011). He describes that for individuals with an IQ lower of 75 which could be classed as borderline intellectual disability, everyday life can be challenging. More than that people with such an IQ can be excluded from employment opportunities, face social isolation and lack access to education. Even people on the moderately low but normal range of intelligence, as he describes it, can face similar struggles although not as extensive. They may not be able to find employment they find fulfilling as they may be limited to jobs not requiring a higher level of training. Not only therefore the jobs available to them might be less psychologically rewarding but also the remuneration offered might be limited as well. This leaves members of such groups in a state of increased chances of depending on welfare, dropping out of schools and risking incarceration.

Biomedical enhancement, Savulescu suggests, could greatly improve the life of mildly cognitively disabled people not only by allowing them to access and compete for better jobs but also by increasing their ability to manage their income and make prudent financial decisions. It will mediate the results of immature spending habits as "Lower intelligence levels increase the likelihood that an individual will make wasteful or negligent financial decisions and predisposes them to financial burdens such as addiction, gambling and crime (Murray, 2002, Gottfredson, 2006, Herrnstein and Murray, 1994).” (Dunlop & Savulescu, 2014, p.5)

In addition, bioenhancement offered to people with mild cognitive disabilities could also minimise the social cost that comes with certain kinds of diversity. Bradshaw (2009) for example explains that maintaining what she calls an unusual morphology might be beneficial for the people in question but can be financially burdensome to the rest. She explains that most of the environments around us- buildings, clothes, cars, airplanes, seats etc- are made to cater to a particular kind of body. Accommodations that would make these spaces accessible can be costly and impractical. Individual modifications could potentially provide a better alternative and could also reduce the dependency on social changes for accessibility. Bradshaw is not alone in expressing such concerns. We have seen social costs factoring in decisions about what kind of bioenhancement would be permissible. Savulescu in particular (2010) as I have discussed refers to additional social costs as a factor that prospective parents should bear in mind when contemplating selecting a fetus with a higher chance of non-typical traits such as deafness. This is the case for people with physical disabilities as well as people with cognitive disabilities to the extent that they both need accommodations to make certain spaces or services accessible.

There are many deeply problematic aspects within such proposals. Firstly it is worth noting that if one is concerned about how poverty disproportionately impacts disabled people there might be easier ways of addressing this than through the successful development of biomedical enhancement. The problem of cognitively disabled people being excluded from the labor market by both structural and attitudinal barriers could be tackled through demands for social change. Moreover, I would also argue that disabled people asking for accommodations might not be quite the contributing factor to the economic crashes and inequality we are witnessing as per Bradshaw’s concerns. What frameworks such as the above indicate is an espousal of neoliberal principles which see competition in the free market as the preferred avenue of redistribution. However this is not explicitly defended but rather taken as granted. Alternative routes of redistribution that would alleviate the poverty and exclusion disabled people face for example though increased taxations or broader social changes are not sufficiently addressed as viable options.

A second issue is that these accounts understand disability through a medical model. This obscures the different factors that prevent people from entering the labour market. That is to say, as the social model of disability has put forward and as I have discussed extensively in the previous chapters how there are different factors determining our capacity to actualise our life plans which include, as Wolfe (2015) refers to them, internal resources, external resources and the material social structures that surround us. The focus of biomedical enhancement on internal resources as a way of mediating inequalities obscures the distinction between morally arbitrary factors and unjust social structures allowing the later to remain unscrutinised.[67]

In the previous chapters for example, I discussed the danger of bioenhancement being used as a way of addressing problems stemming from social structures by identifying the body as an appropriate site for intervention. I also discussed how many bioenhancement advocates, including Savulescu, recognise that there are social issues that are inherently unjust. This is why for example biomedical enhancement cannot be an appropriate way of addressing racism by effective skin whitening processes (Lamkin, 2011).

Unlike racism or other forms of discrimination, poverty is not examined as an unjust social structure. The narrative that poverty is a result of poor individual choices or bad moral character, for which one deserves to be held responsible, is not publicly challenged in the same way within the neoliberal framework of bioenhancement. This is more than obvious in Savulescu's (Savulescu et al., 2011) work who has explained that " the odds of incarceration remain steady for all lower, normal intelligence groups (7%) but reduce by more than half for average intelligence levels (3%) indicating a particular susceptibility of this outcome for lower intelligence" , in Roach's (2009)

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[67] For Wolfe (2015) this indicates the limits in the way a lot of analytical philosophy discusses disability. Disability is seen as a paradigmatic case of bad luck which might require compensation. This works in a way that enforces a medical understanding of disability which portrays is as an individual tragedy. This is both in terms of depicting disabled people as lacking welfare- in terms of needs satisfaction as well as lacking 'internal resources' by which to form and pursue life goals

account where she explains that " the occurrence of an uneven playing field may even be advantageous due to the influence over individuals to work harder to compete with their peers" or in Sandberg's explanation that improving the IQs of those at lower end of the normal distribution could have a large positive impact on well being given that lower IQ is associated with a number of serious risks including poverty, criminal behaviour, and drug addiction (Sandberg, 2011). I am not claiming of course that people are never responsible for their financial or broader life choices. I am claiming though that the above accounts seem to be attributing social evils of criminality and poverty to individuals neglecting the structural factors at play. Social and economic structures that allow for exploitation and domination are therefore not only left unquestioned but are further reinforced.

Even accounts such as Nam's (2013) to which I am much more sympathetic perpetuate narratives that are inherently hostile to disability. Nam (2013) argues that poverty is not the only problem that disabled people face when excluded from the labor market. Rather it can have deleterious effects to human flourishing in multiple ways such as undermining their sentiment of self –worth and self- respect. This is why relevant policies restricted to monetary compensation are inadequate.

He argues that the development of capabilities could function as an alternative to direct financial aid and would address not only the financial but also the psychological and emotional impact of poverty. Cultivating new skills though is not a passive process. It takes an active engagement on behalf of the recipient. Learning or perfecting a skill moreover requires material, psychological or emotional resources that not everyone has the luxury of affording. In the case of cognitive disabled people, it might not be an option at all. Biomedical enhancement for Nam can provide a third alternative. Not only would it offer an option to those who cannot cultivate necessary traits through traditional means of education but also would allow for a greater choice of tools as biomedical enhancement can take place in parallel with any support offered.

For instance he focuses on biomedical enhancement through drug administration as the easiest and the most cost effective example of cognitive enhancement. Not only it could contribute to the "distribution of human capital" but unlike traditional welfare biomedical enhancement does not carry the same social stigma. It therefore can offer a wider range of support that will not have an impact on the social status of those in need. No one can be blamed for taking all the required steps to better themselves and to improve their positional advantages. It can also increase the agency of the beneficiaries as it would give them new ways of growing and of actualizing their capacities.

I agree that it is important to offer opportunities for people to enjoy and feel satisfied from their work. That being said I would argue that it is important to highlight that participation in the labour market does not have to be a dominant source of self -worth and that there does not have to be any stigma on depending on welfare. Although Nam’s account aims at applying bioenhancement as a tool for economic inclusion I would argue that it still relies on a problematic understanding of dependence as something inherently bad whilst promoting our self-understanding as capital which can constantly be improved upon to become more productive.

Such accounts echo- and perpetuate- the distinction between the “deserving” and the “undeserving “poor”, that is to say the distinction between those how find themselves excluded from the labour market out of their own fault and those who are not themselves responsible for being unable to find employment. This distinction indicates the key role that participation in the labour market has had in defining and understanding disability as well as in linking disability to dependence. What is important to note and is often neglected within the relevant bioenhancement literature is that having non typical physiological traits -impairments -did not in itself always preclude people from holding waged jobs.

Exclusion from the labor market has played a key part in how disability is understood and specifically how it is associated to financial dependence. The emergence of industrialisation, waged labor and a mechanised factory- production system made it clear that people who would have fared differently in a more flexible work setting became disabled from participation (M. Oliver & Barnes, 2012, p.55). Industrialisation and wage labour Rose (2017) explains, not only limited the possibility of families to financially take care of their own but simultaneously rendered atypical bodies impractical for factory settings designed for the able bodied.

Indeed, as Rose (2017) points out during the 19th and early 20th century obtaining an impairment such as losing a limb, partial blindness or tuberculosis was expected in many fields of manual labor and was more a signifier of class than of disability.

Throughout this period, the experiences of people after developing impairments varied significantly. Some were able to retain their previous employment, some were able to find alternative employment, some had to resort to worse paying jobs whilst others required assistance from charities or family. Nonetheless it remained typical that people with impairments would remain within their communities and that impairments are just an inevitable part of such labor whether they are from an accident or whether they came from laborers being worn out.

These frameworks started to change though with industrialisation and an economy that became increasingly mechanised. The idea that laborers with impairments were less efficient than their able-bodies counterparts started gaining prominence. Impairments were seen as sings of reckless behaviour on behalf of the workers. This contributed to establishing medical examinations in the workplace as a condition of employment which ended up excluding an increasing amount of people with impairments.

An additional factor that encouraged and contributed to this exclusion was also the emergence of labor laws that required companies to provide compensation for work injuries proportionate to the impairments they caused. This meant that companies now would regard impaired workers as liabilities, especially those with existing impairments. As such they were disincentivized from employing them. Such policies aimed at keeping workers away from poverty and dependence on charity. Compensation would help with medical bills as well as with replacing lost wages. However not only did they often ended up having the opposite results, but they also reinforced the idea that dependency is inherently bad and is only excusable to those deserving it, namely those who are completely precluded from working. This shows how these policies were deeply concerned with discouraging idleness and dependency.

I would argue that this is at the core of the biomedical enhancement enterprise. Bioenhancement as I have discussed is envisioned as a way to increase productivity, provide a competitive advantage in the labour market or even normalise atypical bodies so that they can enter it whilst condemning idleness associated with welfare support. As such I would argue it seems to occupy a dual role where it simultaneously both enhances and disables.

Compared to an enhanced worker who does not get ill, who has increased productivity and who is significantly more efficient, an unenhanced worker will be disabled. Unenhanced workers might not be able to compete with enhanced workers for positions. They also might not be able to keep up with them as colleagues. Bioenhancement is precisely presented as a positional advantage meaning that it aims at giving employers reasons to prefer enhanced employees. As I discussed in the first chapter this can be the case even for posts in which unenhanced employees would be able to perform well. A certificate of enhancement could become a standardised requirement for employment similarly to how a degree is.

Rose gives an example of a labourer who after losing an eye found it increasingly difficult to find employment. “After being rejected for yet another janitorial position, he exclaimed, “Well the fact that I have only one eye doesn’t affect my hands and feet, I can do this work just as well as a man with both his eyes.” But the employer told him, “Why should we bother with a one-eyed man when we can find plenty with two good eyes?” (Rose, 2017, p.2). Similarly, a future employer might wonder why she would bother with an unenhanced employee if there are plenty enhanced employees available.

This is something that as I discussed earlier in this chapter Buchanan explicitly addresses. When contemplating the potential dangers of an emerging number of posthumans he explains that in a world where humans and posthumans coexisted, humans might become unable to participate in the dominant schemes of public cooperation such as the mainstream labour market. Even if human capacities would remain the same as they are now, our inability adapt to modes of production developed around posthuman bodies and capacities would effectively render us disabled in a posthuman world.

To mirror Savulescu, Mitchell explains that neoliberalism marks all bodies as lacking and as in need of improvement. In particular “neoliberalism tends to produce all bodies as languishing through excessive demands of productivity, exacerbated social anxieties, and excessive exposures to toxic environments in order to exploit new treatment markets” (Mitchell, 2015, p.40). Such a view I would argue is constitutive of Savulescu’s proposed framework in which disability is understood as a disadvantage and enhancement as an advantage. His understanding is precisely based on the idea that all bodies are disabled at all times since all bodies have limitations that present them with a disadvantage in term of wellbeing, especially in terms of enjoying material and non-material goods that are distributed through the free market. This is not merely apparent in Savulescu’s description but lies in the very heart of transhumanism.

Bibliography

Aas, S. (2020). Evaluative Diversity and the (Ir)Relevance of Well Being. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 175–189). https://doi.org/10.1093/oxfordhb/9780190622879.013.12

Agar, N. (2010). *Humanity's End: Why We Should Reject Radical Enhancement (Life and Mind: Philosophical Issues in Biology and Psychology)* (First edition. ed.). A Bradford Book.

Agar, N. (2011). Why we can't really say what post-persons are. *Journal of Medical Ethics*, *38*(3), 144–145. https://doi.org/10.1136/medethics-2011-100239

Agar, N. (2012). Still afraid of needy post-persons. *Journal of Medical Ethics*, *39*(2), 81–83. https://doi.org/10.1136/medethics-2012-101095

Agar, N. (2013). Why is it possible to enhance moral status and why doing so is wrong? *Journal of Medical Ethics*, *39*(2), 67–74. https://doi.org/10.1136/medethics-2012-100597

Amundson, R. (2000). Against normal function. *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences*, *31*(1), 33–53. https://doi.org/10.1016/s1369-8486(99)00033-3

Annas, G. (2000). The Man on the Moon, Immortality, and Other Millennial Myths: The Prospects and Perils of Human Genetic Engineering. *Emory Law Journal*, *49*, 753–782. https://ssrn.com/abstract=251850

Annas, G. J. (2009). Human Rights and American Bioethics: Resistance Is Futile. *Cambridge Quarterly of Healthcare Ethics*, *19*(1), 133–141. https://doi.org/10.1017/s0963180109990338

Annas, G. J. (2010). *Worst Case Bioethics*. OUP USA.

Annas, G. J., Andrews, L. B., & Isasi, R. M. (2002). Protecting the Endangered Human: Toward an International Treaty Prohibiting Cloning and Inheritable Alterations. *American Journal of Law & Medicine*, *28*(2–3), 151–178. https://doi.org/10.1017/s009885880001162x

Applebaum, L. D. (2001). The Influence of Perceived Deservingness on Policy Decisions Regarding Aid to the Poor. *Political Psychology*, *22*(3), 419–442. https://doi.org/10.1111/0162-895x.00248

Arneson, R. J. (1997). Egalitarianism and the Undeserving Poor. *Journal of Political Philosophy*, *5*(4), 327–350. https://doi.org/10.1111/1467-9760.00037

Arneson, R. J. (1989). Equality and equal opportunity for welfare. *Philosophical Studies*, *56*(1), 77–93. https://doi.org/10.1007/bf00646210

Asch, A., & Wasserman, D. (2010). Making embryos healthy or making healthy embryos: how much of a difference between prenatal treatment and selection? In *The “Healthy” Embryo: Social, Biomedical, Legal and Philosophical Perspectives* (pp. 201–219). Cambridge University Press.

Autistic Self Advocacy Network. (2008, October 21). *PETA Billboard Removed*. https://autisticadvocacy.org/2008/10/peta-billboard-removed/

Barcley, L. (2016). A Natural Alliance against a Common Foe? Opponents of Enhancement and the Social Model of Disability. In S. Clarke, J. Savulescu, T. Coady, A. Giubilini, & S. Sanyal (Eds.), *The Ethics of Human Enhancement: Understanding the Debate* (pp. 76–85). https://doi.org/10.1093/acprof:oso/9780198754855.003.0005

Barnes, E. (2016). *The Minority Body: A Theory of Disability*. Oxford Scholarship Online. https://doi.org/10.1093/acprof:oso/9780198732587.001.0001

Barry, B. (2005). *Why Social Justice Matters* (1st ed.). Polity.

Bateman, S., & Gayon, J. (2015). The Concept and Practices of Human Enhancement: What Is at Stake? In S. Bateman (Ed.), *Inquiring into Human Enhancement: Interdisciplinary and International Perspectives* (pp. 19–37). https://doi.org/10.1057/9781137530073

Beaudry, J. S. (2020). Theoretical Strategies to Define Disability. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 4–17). https://doi.org/10.1093/oxfordhb/9780190622879.013.3

Begon, J. (2020). Disability, Rationality, and Justice: Disambiguating Adaptive Preferences. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 345–357). https://doi.org/10.1093/oxfordhb/9780190622879.013.27

Bekoff, M. (2013). Who lives, who dies, and why? How speciesism undermines compassionate conservation and social justice. In R. Corbey & A. Lanjouw (Eds.), *The Politics of Species: Reshaping our Relationships with Other Animals* (pp. 15–26). https://doi.org/10.1017/CBO9781139506755.004

BéRubé, M. (2010). Equality, Freedom, and/or Justice for All: A Response to Martha Nussbaum. In E. Kittay & L. Carlson (Eds.), *Cognitive Disability and Its Challenge to Moral Philosophy* (pp. 97–109). https://doi.org/10.1002/9781444322781.ch5

Biklen, S. K., & Moseley, C. R. (1988). “Are You Retarded?” “No, I’m Catholic”: Qualitative Methods in the Study of People with Severe Handicaps. *Journal of the Association for Persons with Severe Handicaps*, *13*(3), 155–162. https://doi.org/10.1177/154079698801300305

Boo, K. (1999, December 5). *System Loses Lives and Trust*. The Washington Post. https://www.washingtonpost.com/wp-srv/WPcap/1999-12/05/069r-120599-idx.html

Boorse, C. (1975). On the Distinction between Disease and Illness. *Philosophy & Public Affairs*, *5*(2), 49–68. http://www.jstor.org/stable/2265020

Boorse, C. (1977). Health as a Theoretical Concept. *Philosophy of Science*, *44*(4), 542–573. https://doi.org/10.1086/288768

Borges, J. L. (1962). Funes the Memorious. In *Ficciones* (pp. 107–115). Grove Weidenfeld. https://www.sas.upenn.edu/~cavitch/pdflibrary/Borges_FunesTheMemorious.pdf

Bostrom, N. (2004). *Golden Retriever - Live on Larry King!* Nick Bostrom's Home Page. https://nickbostrom.com/fable/retriever.html

Bostrom, N. (2005). IN DEFENSE OF POSTHUMAN DIGNITY. *Bioethics*, *19*(3), 202–214. https://doi.org/10.1111/j.1467-8519.2005.00437.x

Bostrom, N. (2008). Why I want to be a Posthuman When I Grow Up. In B. Gordijn & R. Chadwick (Eds.), *Medical Enhancement and Posthumanity* (pp. 107–137). Springer.

Bostrom, N., & Roach, R. (2011). Smart Policy: Cognitive Enhancement and the Public Interest. In J. Savulescu, R. Meulen, & G. Kahane (Eds.), *Enhancing Human Capacities* (pp. 138–149). Wiley.

Bovens, L. (1992). Sour Grapes and Character Planning. *The Journal of Philosophy*, *89*(2), 57. https://doi.org/10.2307/2027152

Bradshaw, H. (2009). If Nanotechnology Were a Magic Wand What Obligations Would it Bring Or: The Right to Enhance Versus the Right to Morphological Freedom. International Journal of Disability, Community &Rehabilitation, 8(2). http://www.ijdcr.ca/VOL08_02/articles/bradshaw.shtml

Bradshaw, H. (2017). Will cognitive enhancement lead to more well-being? The case of people with disabilities. In R. Meulen, A. Mohammed, & W. Halls (Eds.), *Rethinking Cognitive Enhancement* (pp. 235–245). https://doi.org/10.1093/acprof:oso/9780198727392.003.0015

Brown, N., & Leigh, J. (2020). *Ableism in Academia: Theorising experiences of disabilities and chronic illnesses in higher education* (1st ed.). UCL Press. https://doi.org/10.2307/j.ctv13xprjr

Brownmiller, S. (1990). *In Our Time: Memoir of a Revolution* (First Edition). The Dial Press.

Brukamp, K. (2913). Better brains or bitter brains? The ethics of neuroenhancement. In E. Hildt & A. Franke (Eds.), *Cognitive Enhancement: An Interdisciplinary perspective* (pp. 99–112). Springer. https://ebookcentral.proquest.com/lib/exeter/detail.action?docID=1206412

Bruno, M. A., Bernheim, J. L., Ledoux, D., Pellas, F., Demertzi, A., & Laureys, S. (2011). A survey on self-assessed well-being in a cohort of chronic locked-in syndrome patients: happy majority, miserable minority. *BMJ Open*, *1*(1), e000039. https://doi.org/10.1136/bmjopen-2010-000039

Bublitz, J. C. (2013). My Mind is Mine!? Cognitive Liberty as a Legal Concept. In E. Hildt & A. Franke (Eds.), *Cognitive Enhancement: An Interdisciplinary Perspective* (pp. 233–262). https://ebookcentral.proquest.com/lib/exeter/detail.action?docID=1206412.

Buchanan, A. (2011a). Still unconvinced, but still tentative: a reply to DeGrazia. *Journal of Medical Ethics*, *38*(3), 140–141. https://doi.org/10.1136/medethics-2011-100314

Buchanan, A. (2011b). *Beyond Humanity?: The Ethics of Biomedical Enhancement*. OUP Oxford.

Buchanan, A. (2017). *Better than Human: The Promise and Perils of Biomedical Enhancement (Philosophy in Action)* (Reprint ed.). Oxford University Press.

Buchanan, A., Brock, D. W., Daniels, N., & Wikler, D. (2001). *From Chance to Choice: Genetics and Justice* (1st Print, This Edition). Cambridge University Press.

Cakic, V. (2009). Smart drugs for cognitive enhancement: ethical and pragmatic considerations in the era of cosmetic neurology. *Journal of Medical Ethics*, *35*(10), 611–615. https://doi.org/10.1136/jme.2009.030882

Campbell, S., & Wasserman, D. (2020). A Symmetrical View of Disability and Enhancement. In S. Campbell & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 562–576). https://doi.org/10.1093/oxfordhb/9780190622879.013.32

Carlson, L. (2010). Philosophers of Intellectual Disability: A Taxonomy. In E. Kittay & L. Carlson (Eds.), *Cognitive Disability and Its Challenge to Moral Philosophy* (pp. 315–329). https://doi.org/10.1002/9781444322781.ch18

Carlson, L. (2013). *The Faces of Intellectual Disability: Philosophical Reflections*. Indiana University Press.

Chan, S. (2009). Should we enhance animals? *Journal of Medical Ethics*, *35*(11), 678–683. https://doi.org/10.1136/jme.2009.029512

Chatterjee, A. (2004). Cosmetic neurology. *Neurology*, *63*(6), 968–974. https://doi.org/10.1212/01.wnl.0000138438.88589.7c

Cleve, V. J. V. (1999). *Deaf History Unveiled: Interpretations from the New Scholarship*. Gallaudet University Press.

Cooper, R. (2007). Can It Be a Good Thing to Be Deaf? *Journal of Medicine and Philosophy*, *32*(6), 563–583. https://doi.org/10.1080/03605310701680940

Cosgrove, L., & Vaswani, A. (2020). Fetal rights, the policing of pregnancy, and meanings of the maternal in an age of neoliberalism. *Journal of Theoretical and Philosophical Psychology*, *40*(1), 43–53. https://doi.org/10.1037/teo0000139

Crary, A. (2019a). Animals, Cognitive Disability and Getting the World in Focus in Ethics and Social Thought: A Reply to Eva Feder Kittay and Peter Singer. *Zeitschrift Für Ethik Und Moralphilosophie*, *2*(1), 139–146. https://doi.org/10.1007/s42048-018-0023-y

Crary, A. (2019b). The Horrific History of Comparisons between Cognitive Disability and Animality (and How to Move Past It). In L. Gruen & F. Probyn-Rapsey (Eds.), *Animaladies: Gender, Animals, and Madness* (pp. 117–136). https://doi.org/10.5040/9781501342189.ch-009

Crary, A. (2020). Cognitive Disability and Moral Status. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 117–136). https://doi.org/10.1093/oxfordhb/9780190622879.013.40

Cureton, A. (2020). The Limiting Role of Respect. In A. Cureton & D. Wasserman (Eds.), *The oxford Handbook of Philosophy and Disability* (pp. 381–395). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190622879.013.22

Danaher, J. (2016). Should we use Commitment Contracts to Regulate Student use of Cognitive Enhancing Drugs? *Bioethics*, *30*(8), 568–578. https://doi.org/10.1111/bioe.12273

DANIELS, N. (2000). Normal Functioning and the Treatment-Enhancement Distinction. *Cambridge Quarterly of Healthcare Ethics*, *9*(3), 309–322. https://doi.org/10.1017/s0963180100903037Davidson, R. D., & Stache, L. C. (2016). The Body and its Able-ness: Articulating In/Eligibility through Rhetorics of Motherhood, Unjust Language, and Questionable Medical Authority. *Disability Studies Quarterly*, *36*(1). https://doi.org/10.18061/dsq.v36i1.4429

Davis, L. J. (2017). *Disability Studies Reader, 5Th Edition*. T&F/ROUTLEDGE.

Davis, L. J. (1995). *Enforcing normalcy : disability, deafness, and the body*. Verso.

de Melo-Martin, I. (2010). Defending human enhancement technologies: unveiling normativity. *Journal of Medical Ethics*, *36*(8), 483–487. https://doi.org/10.1136/jme.2010.036095

de Sio, F., Faber, N., Savulescu, J., & Vincent, N. (2016). Why Less Praise for Enhanced Performance? Moving Beyond Responsibility-Shifting, Authenticity, and Cheating Toward a Nature of Activities Approach. In F. Jotterand & V. Dubljevic (Eds.), *Cognitive Enhancement: Ethical and Policy Implications in International Perspectives* (pp. 28–39). Oxford University Press.

Dees, R. H. (2008). Better Brains, Better Selves? The Ethics of Neuroenhancements. *Kennedy Institute of Ethics Journal*, *17*(4), 371–395. https://doi.org/10.1353/ken.2008.0001

DeGrazia, D. (2007). Human -Animal Chimeras: Human Dignity, Moral Status and Species Prejudice. *Metaphilosophy*, *38*(2–3), 309–329. https://doi.org/10.1111/j.1467-9973.2007.00476.x

DeGrazia, D. (2011a). Genetic enhancement, post-persons and moral status: a reply to Buchanan. *Journal of Medical Ethics*, *38*(3), 135–139. https://doi.org/10.1136/medethics-2011-100126

DeGrazia, D. (2011b). Genetic enhancement, post-persons and moral status: a reply to Buchanan. *Journal of Medical Ethics*, *38*(3), 135–139. https://doi.org/10.1136/medethics-2011-100126

DeKoven, M., & Lunbland, M. (Eds.). (2012). *Species Matters: Humane Advocacy and Cultural Theory*. Columbia University Press. https://doi.org/10.7312/deko15282

Dickel, S. (2014). Be Afraid of the Unmodified Body! The Social Construction of Risk in Enhancement Utopianism. In M. Eilers, K. Gruber, & C. Rehmann-Sutter (Eds.), *The Human Enhancement Debate and Disability*. palgrave mcmillan. https://link.springer.com/chapter/10.1057/9781137405531_12

Dohmen, J. (2016). ``A Little of Her Language'': Epistemic Injustice and Mental Disability. *Res Philosophica*, *93*(4), 669–691. https://doi.org/10.11612/resphil.1475

Dohmen, J. (2020). Interactions with Delusional Others : Reflections on Epistemic failures and Virtues. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 327–339). https://doi.org/10.1093/oxfordhb/9780190622879.013.9

Dolezal, L. (2016). Constructing the Posthuman Body. In A. Whitehead, A. Woods, S. Atkinson, J. Macnaughton, & J. Richards (Eds.), *In The Edinburgh Companion to the Critical Medical Humanities*. Edinburgh University Press. https://www.jstor.org/stable/10.3366/j.ctt1bgzddd

Dollar, E. P. (2012, May 29). *Do I Hate My Life? No. But I Do Hate My Disability.* Ellen Painter Dollar. https://www.patheos.com/blogs/ellenpainterdollar/2012/05/do-i-hate-my-life/

Dombrowski, D. A. (1997). *Babies and Beasts: THE ARGUMENT FROM MARGINAL CASES*. University of Illinois Press.

Douglas, T. (2011a). Human enhancement and supra-personal moral status. *Philosophical Studies*, *162*(3), 473–497. https://doi.org/10.1007/s11098-011-9778-2

Douglas, T. (2011b). Self-serving bias and the structure of moral status. *Journal of Medical Ethics*, *38*(3), 141–142. https://doi.org/10.1136/medethics-2011-100254

Drayson, Z., & Clark, A. (2020). Cognitive Disability and Embodied, Extended Minds. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 581–596). https://doi.org/10.1093/oxfordhb/9780190622879.013.10

Dresler, M., Sandberg, A., Ohla, K., Bublitz, C., Trenado, C., Mroczko-Wąsowicz, A., Kühn, S., & Repantis, D. (2013). Non-pharmacological cognitive enhancement. *Neuropharmacology*, *64*, 529–543. https://doi.org/10.1016/j.neuropharm.2012.07.002

Dunayer, J. (2013). The rights of sentient beings. In R. Corbey & A. Lanjouw (Eds.), *The Politics of Species Reshaping our Relationships with Other Animals* (pp. 27–39). https://doi.org/10.1017/CBO9781139506755.005

Dunlop, M., & Savulescu, J. (2014). Distributive justice and cognitive enhancement in lower, normal intelligence. *Monash Bioethics Review*, *32*(3–4), 189–204. https://doi.org/10.1007/s40592-014-0014-7

Dvorsky, G. (2003, September 15). *And the Disabled Shall Inherit the Earth*. Sentient Developments: Science, Futurism, Life. http://www.sentientdevelopments.com/2003/09/and-disabled-shall-inherit-earth.html

Dvorsky, G. (2008). All Together Now: Developmental and ethical considerations for biologically uplifting nonhuman animals. *Journal of Evolution and Technology*, *18*(1), 129–142. http://jetpress.org/v18/dvorsky.htm

Dvorsky, G. (2015, December 16). *Should we upgrade the intelligence of animals?* Gizmodo. https://gizmodo.com/should-we-upgrade-the-intelligence-of-animals-5943832

Earp, B. D., Sandberg, A., Kahane, G., & Savulescu, J. (2014). When is diminishment a form of enhancement? Rethinking the enhancement debate in biomedical ethics. *Frontiers in Systems Neuroscience*, *8*. https://doi.org/10.3389/fnsys.2014.00012

Elliott, C. (2011). Enhancement Technologies and the Modern Self. *Journal of Medicine and Philosophy*, *36*(4), 364–374. https://doi.org/10.1093/jmp/jhr031

Elster, J. (2016). *Sour Grapes: Studies in the Subversion of Rationality (Cambridge Philosophy Classics)* (Reissue ed.). Cambridge University Press.

Erler, A. (2017). The limits of the treatment-enhancement distinction as a guide to public policy. *Bioethics*, *31*(8), 608–615. https://doi.org/10.1111/bioe.12377

ETIEYIBO, E. (2011). GENETIC ENHANCEMENT, SOCIAL JUSTICE, AND WELFARE-ORIENTED PATTERNS OF DISTRIBUTION. *Bioethics*, *26*(6), 296–304. https://doi.org/10.1111/j.1467-8519.2010.01872.x

Evans, S. E. (2004). *Forgotten Crimes: The Holocaust and People with Disabilities*. Ivan R. Dee.

Faber, N. S., Savulescu, J., & Douglas, T. (2016). Why is Cognitive Enhancement Deemed Unacceptable? The Role of Fairness, Deservingness, and Hollow Achievements. *Frontiers in Psychology*, *7*. https://doi.org/10.3389/fpsyg.2016.00232

Farrelly, C. (2002). Genes and Social Justice: A Rawlsian Reply to Moore. *Bioethics*, *16*(1), 72–83. https://doi.org/10.1111/1467-8519.00268

Farrelly, C. (2004). The Genetic Difference Principle. *The American Journal of Bioethics*, *4*(2), 21–28. https://doi.org/10.1162/152651604323097952

Ferrari, A. (2015). Animal Enhancement: Technovisionary Paternalism and the Colonisation of Nature. In S. Bateman, J. Gayon, S. Allouche, J. Goffette, & M. Marzano (Eds.), *Inquiring into Animal Enhancement: Model or Countermodel of Human Enhancement?* (pp. 13–33). Palgrave Pivot. https://doi.org/10.1057/9781137542472_2

Flavin, J. (2009). “Innocent Preborn Victims”: Fetal Protectionism and Pregnant Women. In *Our Bodies, Our Crimes: The Policing of Womens Reproduction in America* (pp. 95–117). https://www.jstor.org/stable/j.ctt9qffnc?turn_away=true

Forlini, C., & Racine, E. (2009). Autonomy and Coercion in Academic “Cognitive Enhancement” Using Methylphenidate: Perspectives of Key Stakeholders. *Neuroethics*, *2*(3), 163–177. https://doi.org/10.1007/s12152-009-9043-y

Forsberg, L. (2013). No pain no gain? Objections to the use of cognitive enhancement on the basis of its potential effects on the value of achievement. In E. Hildt & A. Franke (Eds.), *Cognitive Enhancement: An Interdisciplinary Perspective* (pp. 159–171). Springer. https://ebookcentral.proquest.com/lib/exeter/detail.action?docID=1206412

Foucault, M., & Burchell, G. (2004). *Abnormal: Lectures at the Collège de France, 1974–1975 (Michel Foucault Lectures at the Collège de France, 4)* (First ed.). Picador.

Franssen, T. (2014). Prometheus Descends: Disabled or Enhanced? John Harris, Human Enhancement, and the Creation of a New Norm. In M. Eilers, K. Gruber, & C. Rehmann-Sutter (Eds.), *The Human Enhancement Debate and Disability: New Bodies for a Better Life*. Palgrave. https://link.springer.com/chapter/10.1057/9781137405531_9

Fricker, M. (2007). *Epistemic Injustice: Power and the Ethics of Knowing* .Oxford University Press.

Friedman, M. (2006). Conceptions of autonomy. In M. Fricker & J. Hornsby (Eds.), *The Cambridge Companion to Feminism in Philosophy*. Cambridge University Press. https://www.cambridge.org/core/books/cambridge-companion-to-feminism-in-philosophy/F9804CD0416E041F07679B3B7796807A

Fox, R. C., & Swazey, J. P. (2008). *Observing Bioethics* (1st ed.). Oxford University Press.

Fukuyama, F. (2003). *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Reprint ed.). Picador.

Garasic, M. D., & Lavazza, A. (2016). Moral and social reasons to acknowledge the use of cognitive enhancers in competitive-selective contexts. *BMC Medical Ethics*, *17*(1). https://doi.org/10.1186/s12910-016-0102-8

Giubilini, A., & Minerva, F. (2019). Enhancing Equality. *The Journal of Medicine and Philosophy: A Forum for Bioethics and Philosophy of Medicine*, *44*(3), 335–354. https://doi.org/10.1093/jmp/jhz002

Glatzer, J. (2000, December 8). *A genetic death sentence*. Salon. https://www.salon.com/2000/12/08/heart_transplant/

Goddard, H. H. (2008). *The Kallikak Family*. CreateSpace Independent Publishing Platform.

Goering, S. (2008). 'You Say You're Happy, but. . .': Contested Quality of Life Judgments in Bioethics and Disability Studies. *Journal of Bioethical Inquiry*, *5*(2–3), 125–135. https://doi.org/10.1007/s11673-007-9076-z

Goering, S. (2015). Rethinking disability: the social model of disability and chronic disease. *Current Reviews in Musculoskeletal Medicine*, *8*(2), 134–138. https://doi.org/10.1007/s12178-015-9273-z

Goering, S., & Klein, E. (2020). Neurotechnologies and Justice by, with, and for Disabled People. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 617–629). https://doi.org/10.1093/oxfordhb/9780190622879.013.33

Goffette, J. (2015). Enhancement: Why We Should Distinguish Anthropotechnics from Medicine. In S. Bateman (Ed.), *Inquiring into Human Enhancement Interdisciplinary and International Perspectives* (pp. 38–59). https://link.springer.com/chapter/10.1057/9781137530073_3

Goode, D. (1994). *A World Without Words: The Social Construction of Children Born Deaf and Blind*. Temple University Press.

Goodley, D., Lawthom, R., & Runswick- Cole, K. (2014). Posthuman disability studies. *Subjectivity*, *7*(4), 342–361. https://doi.org/10.1057/sub.2014.15

Gottfredson, L. S. (2006). Social consequences of group differences in cognitive ability. *CE Flores-Mendoza and R. Colom: Introducau a Psicologia Das Diferncas Indivduais. Porto Allegre, Brazil: ArtMed Publishers*

Gough, A. (2021, February 19). *Animals who feel no pain? "Gene editing" could become a reality post-Brexit*. SURGE. https://www.surgeactivism.org/articles/animals-who-feel-no-pain-gene-editing-could-become-a-reality-post-brexit

Gould, S. J. (1981). *The Mismeasure of Man* (1st ed.). W. W. Norton.

Grandin, T., & Cockram, M. (2020). *The Slaughter of Farmed Animals: Practical Ways of Enhancing Animal Welfare*. CABI.

Gruen, L. (2011). *Ethics and Animals: An Introduction (Cambridge Applied Ethics)* (1st ed.). Cambridge University Press. https://doi.org/10.1017/CBO9780511976162

Habermas, J. (2003). *The Future of Human Nature* (1st ed.). Polity.

Haksar, V. (1980). *Equality, Liberty and Perfectionism* (First Edition). Oxford University Press.

Hall, M. (2013a). Reconciling the disability critique and reproductive liberty: The case of negative genetic selection. *IJFAB: International Journal of Feminist Approaches to Bioethics*, *6*(1), 121–143. https://doi.org/10.3138/ijfab.6.1.121

Hall, M. (2013b). Vile Sovereigns in Bioethical Debate. *Disability Studies Quarterly*, *33*(4). https://doi.org/10.18061/dsq.v33i4.3870

Hall, M. (2016). *The Bioethics of Enhancement: Transhumanism, Disability, and Biopolitics*. Lexington Books. https://www.vlebooks.com/Vleweb/Product/Index/938217?page=0

Hall, M. (2020). Second Thoughts on Enhancement and Disability. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 634–646). https://doi.org/10.1093/oxfordhb/9780190622879.013.34

Harman, E. (2009). “I’ll be glad I did it” reasoning and the significance of future desires. *Philosophical Perspectives*, *23*(1), 177–199. https://doi.org/10.1111/j.1520-8583.2009.00166.x

Harris, J. (2001). One principle and three fallacies of disability studies. *Journal of Medical Ethics*, *27*(6), 383–387. https://doi.org/10.1136/jme.27.6.383

Harris, J. (2007). *Enhancing Evolution: The Ethical Case for Making Better People*. Princeton University Press.

Harrison, G. E., & van Haneghan, J. P. (2011). The Gifted and the Shadow of the Night: Dabrowski’s Overexcitabilities and Their Correlation to Insomnia, Death Anxiety, and Fear of the Unknown. *Journal for the Education of the Gifted*, *34*(4), 669–697. https://doi.org/10.1177/016235321103400407

Haslanger, S. (2000). Gender and Race: (What) Are They? (What) Do We Want Them To Be? *Noûs*, *34*(1), 31–55. https://doi.org/10.1111/0029-4624.00201

Hauskeller, M. (2009). Prometheus Unbound. *Ethical Perspectives*, *16*(1), 3–20. https://doi.org/10.2143/ep.16.1.2036276

Hauskeller, M. (2012). The moral status of post-persons. *Journal of Medical Ethics*, *39*(2), 76–77. https://doi.org/10.1136/medethics-2012-100837

Hauskeller, M. (2014). *Better Humans?: Understanding the Enhancement Project* (1st ed.). Routledge.

Hauskeller, M. (2016). Levelling the Playing Field. In S. Clarke, J. Savulescu, T. Coady, A. Giubilini, & S. Sanyal (Eds.), *The Ethics of Human Enhancement: Understanding the Debate* (pp. 199–209). Oxford Scholarship Online. https://doi.org/10.1093/acprof:oso/9780198754855.001.0001

Hauskeller, M. (2017). How to Become a Post-Dog: Animals in Transhumanism. *Between the Species*, *20*(1), 25–37. http://digitalcommons.calpoly.edu/bts/vol20/iss1/2

Hauskeller, M. (2018a). Do animals have a bad life? *Journal of Animal Ethics*, *8*(1), 50–61. http://muse.jhu.edu/article/690368

Hauskeller, M. (2018b). *Mythologies of Transhumanism* (Softcover reprint of the original 1st ed. 2016 ed.). Palgrave Macmillan.

Hauskeller, M. (2020). Living Like a Dog: Can the Life of Non-Human Animals Be Meaningful? *Between the Species*, *23*(1). https://digitalcommons.calpoly.edu/bts/vol23/iss1/1

Herrnstein, R. J., & Murray, C. (1994). *The Bell Curve: Intelligence and Class Structure in American Life (A Free Press Paperbacks Book)* (Illustrated ed.). Free Press.

Hess, E., & Jokeit, H. (2009, November 24). *Neurocapitalism: An expanding market for neuroscience*. Eurozine. https://www.eurozine.com/neurocapitalism/

Hildt, E. (2013). Cognitive Enhancement: A Critical Look at the Recent Debate. In E. Hildt & A. Franke (Eds.), *Cognitive Enhancement: An Interdisciplinary Perspective* (pp. 1–14). Springer. https://ebookcentral.proquest.com/lib/exeter/detail.action?docID=1206412

Hill Jr, E. (2019). Ideals of Appreciation and Expressions of Respect. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 364–376). Oxford Handbooks Online. https://doi.org/10.1093/oxfordhb/9780190622879.013.46

HOLTUG, N. (2011). EQUALITY AND THE TREATMENT-ENHANCEMENT DISTINCTION. *Bioethics*, *25*(3), 137–144. https://doi.org/10.1111/j.1467-8519.2009.01750.x

Horta, O. (2017). Why the Concept of Moral Status Should be Abandoned. *Ethical Theory and Moral Practice*, *20*(4), 899–910. https://doi.org/10.1007/s10677-017-9829-7

Hughes, J. (2004). *Citizen Cyborg: Why Democratic Societies Must Respond To The Redesigned Human Of The Future* (Advance Uncorrected Proof ed.). Basic Books.

Hughes, J. (2007). The struggle for a smarter world. *Futures*, *39*(8), 942–954. https://doi.org/10.1016/j.futures.2007.03.002

Hughes, J. (2010). Contradictions from the Enlightenment Roots of Transhumanism. *Journal of Medicine and Philosophy*, *35*(6), 622–640. https://doi.org/10.1093/jmp/jhq049

Ilyes, E. (2020). Psychology's eugenic history and the invention of intellectual disability. *Social and Personality Psychology Compass*, *14*(7). https://doi.org/10.1111/spc3.12537

Iuculano, T., & Cohen Kadosh, R. (2013). The Mental Cost of Cognitive Enhancement. *Journal of Neuroscience*, *33*(10), 4482–4486. https://doi.org/10.1523/jneurosci.4927-12.2013

Jacobs, L. A. (2012). Pursuing Equal Opportunities. In L. A. Jacobs (Ed.), *Equal opportunities without Natural Inequalities* (pp. 48–80). Cambridge University Press. https://doi.org/10.1017/CBO9780511616556.003

Jarman, M. (2015). Relations of Abortion: Crip Approaches to Reproductive Justice. *Feminist Formations*, *27*(1), 46–66. https://doi.org/10.1353/ff.2015.0008

Johnson, H. M. (2003, February 16). *Unspeakable Conversations*. The New York Times. https://www.nytimes.com/2003/02/16/magazine/unspeakable-conversations.html

Kafer, A. (2013). *Feminist, Queer, Crip* (1st ed.). Indiana University Press. http://www.jstor.org/stable/j.ctt16gz79x

Kahane, G. (2009). Non-identity, self-defeat, and attitudes to future children. *Philosophical Studies*, *145*(2), 193–214. https://doi.org/10.1007/s11098-008-9219-z

Kahane, G., & Savulescu, J. (2015). The Welfarist Account of Disability. In K. Brownlee & A. Cureton (Eds.), *Disability and Disadvantage* (pp. 15–51). Oxford Scholarship Online. https://doi.org/10.1093/acprof:osobl/9780199234509.001.0001

Kahane, G., & Savulescu, J. (2016). Disability and Mere Difference. *Ethics*, *126*(3), 774–788. https://doi.org/10.1086/684709

Kamm, F. M. (2015). Disability, Discrimination, and irrelevant Goods. In K. Brownlee & A. Cureton (Eds.), *Disability and Disadvantage* (pp. 261–318). https://doi.org/10.1093/acprof:osobl/9780199234509.001.0001

Kass, L. (2004). *Life Liberty & the Defense of Dignity: The Challenge for Bioethics (Encounter Broadsides)* (New Ed). Encounter Books.

Keating A. (2013). *Transformation now! : toward a post-oppositional politics of change*. University Of Illinois Press. https://illinois.universitypressscholarship.com/view/10.5406/illinois/9780252037849.001.0001/upso-9780252037849

KELLER, J. (1997). Autonomy, Relationality, and Feminist Ethics. *Hypatia*, *12*(2), 152–164. https://doi.org/10.1111/j.1527-2001.1997.tb00024.x

Kerr, A., Shakespeare, T., & Varty, S. (2002). *Genetic Politics: From Eugenics to Genome*. New Clarion Press.

Killian, C., & Thomas, E. M. (2020). Fetal Alcohol Syndrome Warnings: Policing Women's Behavior Distorts Science. *Journal of Applied Social Science*, *14*(1), 5–22. https://doi.org/10.1177/1936724419898885

Kipke, R. (2013). What Is Cognitive Enhancement and Is It Justified to Point Out This Kind of Enhancement Within the Ethical Discussion? In E. Hildt & A. Franke (Eds.), *Cognitive Enhancement: An Interdisciplinary Perspective* (pp. 145–157). https://ebookcentral.proquest.com/lib/exeter/detail.action?docID=1206412.

Kittay, E. (2005a). At the Margins of Moral Personhood. *Ethics*, *116*(1), 100–131. https://doi.org/10.1086/454366

Kittay, E. (2005b). Equality, Dignity and Disability. In M. A. Lyons & F. Waldron (Eds.), *Perspectives on Equality: The Second Seamus Heaney Lectures* (pp. 93–119). Liffey Press.

Kittay, E. (2010). The Personal is Philosophical Is Political: A Philosopher and Mother of a Cognitively Disabled Person Sends Notes from the Battlefield. In E. F. Kittay & L. Carlson (Eds.), *Cognitive Disability and Its Challenges to Moral Philosophy* (pp. 393–413). https://doi.org/10.1002/9781444322781

Koch, T. (2010). Enhancing Who? Enhancing What? Ethics, Bioethics, and Transhumanism. *Journal of Medicine and Philosophy*, *35*(6), 685–699. https://doi.org/10.1093/jmp/jhq051

Koch, T. (2017). Disabling disability amid competing ideologies. *Journal of Medical Ethics*, *44*(8), 575–579. https://doi.org/10.1136/medethics-2017-104253

Korsgaard, C. M. (2018). *Fellow Creatures: Our Obligations to the Other Animals (Uehiro Series in Practical Ethics)*. Oxford Scholarship Online. https://doi.org/10.1093/oso/9780198753858.001.0001

Krutzinna, J. (2016). Can a Welfarist Approach be Used to Justify a Moral Duty to Cognitively Enhance Children? *Bioethics*, *30*(7), 528–535. https://doi.org/10.1111/bioe.12244

Lamkin, M. (2011). Racist Appearance Standards and the Enhancements that Love Them: Norman Daniels and Skin-Lightening Cosmetics. *Bioethics*, *25*(4), 185–191. https://doi.org/10.1111/j.1467-8519.2009.01755.x

Lavazza, A. (2015). Erasing traumatic memories: when context and social interests can outweigh personal autonomy. *Philosophy, Ethics, and Humanities in Medicine*, *10*(1). https://doi.org/10.1186/s13010-014-0021-6

Lavazza, A. (2018a). Cognitive Enhancement through Genetic Editing: a New Frontier to Explore (and to Regulate)? *Journal of Cognitive Enhancement*, *2*(4), 388–396. https://doi.org/10.1007/s41465-018-0104-1

Lavazza, A. (2018b). Transcranial electrical stimulation for human enhancement and the risk of inequality: Prohibition or compensation? *Bioethics*, *33*(1), 122–131. https://doi.org/10.1111/bioe.12504

Lewens, T. (2010). Foot note. *Analysis*, *70*(3), 468–473. https://doi.org/10.1093/analys/anq036

Liao, S. M. (2018). Designing humans: A human rights approach. *Bioethics*, *33*(1), 98–104. https://doi.org/10.1111/bioe.12519

Liao, S. M., Savulescu, J., & Sheehan, M. (2007). The Ashley Treatment: Best Interests, Convenience, and Parental Decision-Making. *Hastings Center Report*, *37*(2), 16–20. https://doi.org/10.1353/hcr.2007.0027

Lindsay, R. A. (2005). Enhancements and Justice: Problems in Determining the Requirements of Justice in a Genetically Transformed Society. *Kennedy Institute of Ethics Journal*, *15*(1), 3–38. https://doi.org/10.1353/ken.2005.0004

Lindsay, R.A. (2017). ANIMALS, MORAL STATUS, AND THE OBJECTIVES OF MORALITY. *Think*, *16*(47), 33–43. https://doi.org/10.1017/s1477175617000197

Linzey, A. (2009). *Why Animal Suffering Matters: Philosophy, Theology, and Practical Ethics* (Reprint ed.). Oxford University Press.

Lundblad, M. (2020). Disanimality: Disability Studies and Animal Advocacy. *New Literary History*, *51*(4), 765–795. https://doi.org/10.1353/nlh.2020.0048

Mackenzie, C. (2021). Relational Autonomy. In K. Q. Hall & Asta (Eds.), *The Oxford Handbook of Feminist Philosophy*. Oxford University Press. https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780190628925.001.0001/oxfordhb-9780190628925-e-29

Mackenzie, C. (2014). The Importance of Relational Autonomy and Capabilities for an Ethics of Vulnerability. In C. Mackenzie, W. Rogers, & S. Dodds (Eds.), *Vulnerability: New Essays in Ethics and Feminist Philosophy*. https://oxford.universitypressscholarship.com/view/10.1093/acprof:oso/9780199316649.001.0001/acprof-9780199316649-chapter-2.

Mahowald, M. (2006). Drawing Lines between Extremes: Medical Enhancement and Eugenics. *The Pluralist, 1*(2), 19-34. http://www.jstor.org/stable/20708861

Marsh, J. (2020). What's Wrong with "You say You're Happy, but. . ." Reasoning? In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 311–322). https://doi.org/10.1093/oxfordhb/9780190622879.013.7

McMahan, J. (2002). *The Ethics of Killing: Problems at the Margins of Life (Oxford Ethics Series)* (1st ed.). Oxford University Press.

McMahan, J. (2005). Causing Disabled People to Exist and Causing People to Be Disabled. *Ethics*, *116*(1), 77–99. https://doi.org/10.1086/454367

McMahan, J. (2009). Cognitive Disability and Cognitive Enhancement. *Metaphilosophy*, *40*(3–4), 582–605. https://doi.org/10.1111/j.1467-9973.2009.01612.x

McMahan, J. (2010). Cognitive Disability and Cognitive Enhancement. In E. Kittay & L. Carlson (Eds.), *Cognitive Disability and Its Challenge to Moral Philosophy* (pp. 345–367). https://doi.org/10.1002/9781444322781.ch20

McMahan, J. (2015). Radical Cognitive Limitation. In K. Brownlee & A. Cureton (Eds.), *Disability and Disadvantage* (pp. 241–258). https://doi.org/10.1093/acprof:osobl/9780199234509.001.0001

Menuz, V. (2015). Why Do We Wish to be Enhanced? In S. Bateman (Ed.), *Inquiring into Human Enhancement: Interdisciplinary and International Perspectives* (pp. 60–85). https://doi.org/10.1057/9781137530073_4

Meulen, R. (2015). The Moral Ambiguity of Human Enhancement. In S. Bateman (Ed.), *Inquiring into Human Enhancement: Interdisciplinary and International Perspectives* (pp. 86–99). https://doi.org/10.1057/9781137530073_5

Mihailov, E., & Dragomir, A. (2018). Will cognitive enhancement create post-persons? The use(lessness) of induction in determining the likelihood of moral status enhancement. *Bioethics*, *32*(5), 308–313. https://doi.org/10.1111/bioe.12437

Minerva, F., & Giubilini, A. (2017). From assistive to enhancing technology: should the treatment-enhancement distinction apply to future assistive and augmenting technologies? *Journal of Medical Ethics*, medethics-2016. https://doi.org/10.1136/medethics-2016-104014

Mitchell, D. T. (2015). *The Biopolitics of Disability: Neoliberalism, Ablenationalism, and Peripheral Embodiment (Corporealities: Discourses Of Disability)* (Illustrated ed.). University of Michigan Press.

Monroe, H. (2019). Ableism, Speciesism, Animals, and Autism: The Devaluation of Interspecies Friendships. In L. Gruen & F. Probyn-Rapsey (Eds.), *Animaladies* (pp. 89–100). https://doi.org/10.5040/9781501342189.ch-007

Mosquera, J. (2020). Why Inflicting Disability is Wrong: The Mere Difference. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 159–172). https://doi.org/10.1093/oxfordhb/9780190622879.013.16

Murray, C. (2002). IQ and Income Inequality in a Sample of Sibling Pairs from Advantaged Family Backgrounds. *American Economic Review*, *92*(2), 339–343. https://doi.org/10.1257/000282802320191570

Nagel, S. K. (2010). Too Much of a Good Thing? Enhancement and the Burden of Self-Determination. *Neuroethics*, *3*(2), 109–119. https://doi.org/10.1007/s12152-010-9072-6

Nam, J. (2013). Biomedical Enhancements as Justice. *Bioethics*, *29*(2), 126–132. https://doi.org/10.1111/bioe.12061

Neiders, I. (2015). Can There Be Post-Persons and What Can We Learn From Considering Their Possibility? *ETHICS IN PROGRESS*, *6*(1), 56–71. https://doi.org/10.14746/eip.2015.1.6

Nussbaum, M. C. (2001). Symposium on Amartya Sen's philosophy: 5 Adaptive preferences and women's options. *Economics and Philosophy*, *17*(1), 67–88. https://doi.org/10.1017/s0266267101000153

Nussbaum, M. C (2007). *Frontiers of Justice: Disability, Nationality, Species Membership (The Tanner Lectures on Human Values)*. Belknap Press: An Imprint of Harvard University Press.

Nussbaum, M. C. (2010). The Capabilities of People with Cognitive Disabilities. In E. Kittay & L. Carlson (Eds.), *Cognitive Disability and Its Challenge to Moral Philosophy* (pp. 74–95). https://doi.org/10.1002/9781444322781.ch4

Nussbaum, M. C. (2011). *Creating Capabilities: The Human Development Approach* (Reprint ed.). Belknap Press: An Imprint of Harvard University Press. https://www.jstor.org/stable/j.ctt2jbt31.5

Nussbaum, M. C. (2012). *Women and Human Development: The Capabilities Approach*. Cambridge University Press. https://doi.org/10.1017/CBO9780511841286

O' Shea, T. (2020). Civic republican Disability Justice. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 213–227). https://doi.org/10.1093/oxfordhb/9780190622879.013.20

Oliver, K. (2010). ENHANCING EVOLUTION:WHOSE BODY? WHOSE CHOICE? *The Southern Journal of Philosophy*, *48*, 74–96. https://doi.org/10.1111/j.2041-6962.2010.00022.x

Oliver, K. (2013). *Technologies of Life and Death*. Amsterdam University Press.

Oliver, M. (2013). The social model of disability: thirty years on. *Disability & Society*, *28*(7), 1024–1026. https://doi.org/10.1080/09687599.2013.818773

Oliver, M., & Barnes, C. (2012). *The New Politics of Disablement*. Palgrave Mcmillan

Olsaretti, S. (2009). IX-Responsibility and the Consequences of Choice. *Proceedings of the Aristotelian Society (Hardback)*, *109*(1pt2), 165–188. https://doi.org/10.1111/j.1467-9264.2009.00263.x

Persson, I. (2012). Is Agar biased against ‘post-persons’? *Journal of Medical Ethics*, *39*(2), 77–78. https://doi.org/10.1136/medethics-2012-100836

Persson, I., & Savulescu, J. (2014). *Unfit for the Future: The Need for Moral Enhancement (Uehiro Series in Practical Ethics)* (1st ed.). Oxford University Press.

Piepzna-Samarasinha, L. L. (2018). *Care Work: Dreaming Disability Justice*. Arsenal Pulp Press.

Pollan, M. (2007). *The Omnivore’s Dilemma: A Natural History of Four Meals*. Penguin.

Premack, D., & Premack, J. (1984). *The Mind of an Ape*. W W Norton & Co Inc.

Quednow, B. B. (2010). Ethics of neuroenhancement: A phantom debate. *BioSocieties*, *5*(1), 153–156. https://doi.org/10.1057/biosoc.2009.13

Rachels, J. (2012). Drawing Lines. In C. Sunstein & M. Nussbaum (Eds.), *Animal Rights: Current Debates and New Directions* (pp. 163–174). https://doi.org/10.1093/acprof:oso/9780195305104.001.0001

Racine, E., & Forlini, C. (2009). Expectations regarding cognitive enhancement create substantial challenges. *Journal of Medical Ethics*, *35*(8), 469–470. https://doi.org/10.1136/jme.2009.030460

Regan, T. (2006). *Defending Animal Rights* (Reprint ed.). University of Illinois Press.

Reiner, P. (2013). The Biopolitics of Cognitive Enhancement. In E. Hildt & A. Franke (Eds.), *Cognitive Enhancement: An Interdisciplinary Approach* (pp. 189–200). https://ebookcentral.proquest.com

Riddle, C. (2020). Disability and Disadvantage in the Capabilities Approach. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 230–241). https://doi.org/10.1093/oxfordhb/9780190622879.013.19

Roache, R. (2009). Enhancement and Cheating. *Expositions*, *2*(2). https://doi.org/10.1558/expo.v2i2.153

Rohrer, J. (2005). Toward a Full-Inclusion Feminism: A Feminist Deployment of Disability Analysis. *Feminist Studies*, *31*(1), 34. https://doi.org/10.2307/20459006

Rose, S. F. (2017). *No Right to Be Idle: The Invention of Disability, 1840s–1930s*. University of North Carolina Scholarship Online. https://doi.org/10.5149/northcarolina/9781469624891.001.0001

Russell, M., & Rosenthal, K. (2019). *Capitalism and Disability: Selected Writings by Marta Russell*. Haymarket Books.

Saad-Filho, A., & Johnston, D. (2005). *Neoliberalism : a critical reader*. Pluto Press. https://econpapers.repec.org/bookchap/ucpbkecon/9780745322995.htm?fbclid=IwAR3BdLoYzCJRP9u-eRuQ5680tfBcs6kpcWx3psHxax-7c7mvNy2xdQm2E6A

Salomon, D. (2010). From Marginal Cases to Linked Oppressions: Reframing the Conflict between the Autistic Pride and Animal Rights Movements. *Journal for Critical Animal Studies*, *VIII*(1), 47–67. http://www.criticalanimalstudies.org/wp-content/uploads/2009/09/4-JCAS-Vol-VIII-Issue-I-and-II-2010-Essay-FROM-MARGINAL-CASES-pp-47-72.pdf

Sandberg, A. (2011). Cognition Enhancement: Upgrading the Brain. In J. Savulescu, R. Meulen, & G. Kahane (Eds.), *Enhancing Human Capacities* (pp. 69–91). https://doi.org/10.1002/9781444393552.ch5

Sandberg, A. (2013). Morphological Freedom- Why We Not Just Want It, but Need It. In M. More & N. Vita- More (Eds.), *The Transhumanist Reader: Classical and Contemporary Essays on the Science, Technology, and Philosophy of the Human Future* (pp. 56–64). https://doi.org/10.1002/9781118555927.ch5

Sandberg, A., & Savulescu, J. (2011). The Social and Economic Impacts of Cognitive Enhancement. In J. Savulescu, R. Meulen, & G. Kahane (Eds.), *Enhancing Human Capacities* (pp. 92–112). https://doi.org/10.1002/9781444393552.ch6

Sandel, M. (2007). *Case Against Perfection*. Harvard UP.

Savage-Rumbaugh, S., Shanker, S. G., & Taylor, T. J. (1998). *Apes, Language, and the Human Mind* (1st ed.). Oxford University Press.

Savulescu, J. (2001a). Procreative Beneficence: Why We Should Select the Best Children. *Bioethics*, *15*(5–6), 413–426. https://doi.org/10.1111/1467-8519.00251

Savulescu, J. (2001b). Resources, Down's syndrome, and cardiac surgery. *BMJ*, *322*(7291), 875–876. https://doi.org/10.1136/bmj.322.7291.875

Savulescu, J. (2005). New breeds of humans: the moral obligation to enhance. *Reproductive BioMedicine Online*, *10*, 36–39. https://doi.org/10.1016/s1472-6483(10)62202-x

SAVULESCU, J. (2006). Justice, Fairness, and Enhancement. *Annals of the New York Academy of Sciences*, *1093*(1), 321–338. https://doi.org/10.1196/annals.1382.021

Savulescu, J. (2007). In defence of Procreative Beneficence. *Journal of Medical Ethics*, *33*(5), 284–288. https://doi.org/10.1136/jme.2006.018184

Savulescu, J. (2010). The Human Prejudice and the Moral Status of Enhanced Beings: What Do We Owe the Gods? In J. Savulescu & N. Bostrom (Eds.), *Human Enhancement* (pp. 211–245). Oxford University Press.

Savulescu, J., & Kahane, G. (2011). Disability: a welfarist approach. *Clinical Ethics*, *6*(1), 45–51. https://doi.org/10.1258/ce.2011.011010

Savulescu, J., Sandberg, A., & Kahane, G. (2011). Well- Being and Enhancement. In J. Savulescu, R. Meulen, & G. Kahane (Eds.), *Enhancing Human Capacities* (pp. 1–18). https://doi.org/10.1002/9781444393552.ch1

Schermer, M. (2008). Enhancements, Easy Shortcuts, and the Richness of Human Activitiies. *Bioethics*, *22*(7), 355–363. https://doi.org/10.1111/j.1467-8519.2008.00657.x

Schües, C. (2014). Improving Deficiencies? Historical, Anthropological, and Ethical Aspects of the Human Condition. In M. Eilers, K. Grüber, & C. Rehmann-Sutter (Eds.), *The Human Enhancement Debate and Disability*. palgrave mcmillan. https://link.springer.com/chapter/10.1057/9781137405531_3

Schweik, S. M. (2009). *The Ugly Laws: Disability in Public*. NYU Press. http://www.jstor.org/stable/j.ctt9qgf13

Scully, J. L. (2021). Feminist Bioethics. In K. Q. Hall & Asta (Eds.), *The Oxford Handbook of Feminist Philosophy*. Oxford University Press. https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780190628925.001.0001/oxfordhb-9780190628925-e-21

Scully, J. (2020). Epistemic, Exclusion, Injustice, and Disability. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 298–308). https://doi.org/10.1093/oxfordhb/9780190622879.013.8

Scully, J. L. (2014). Disability and Vulnerability. In C. Mackenzie, W. Rogers, & S. Dodds (Eds.), *Vulnerability: New Essays in Ethics and Feminist Philosophy*. Oxford University Press. https://oxford.universitypressscholarship.com/view/10.1093/acprof:oso/9780199316649.001.0001/acprof-9780199316649-chapter-9

Sen, A. (1993). *The idea of justice / Amartya Sen* (Fifth Edition). London : Penguin.

Shepherd, J. (2020). Disabilities and Well-Being: The Bad and the Neutral. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 124–135). https://doi.org/10.1093/oxfordhb/9780190622879.013.11

Siebers, T. (2004). Disability as Masquerade. *Literature and Medicine*, *23*(1), 1–22. https://doi.org/10.1353/lm.2004.0010

Silvers, A. (2012). Moral status: what a bad idea! *Journal of Intellectual Disability Research*, *56*(11), 1014–1025. https://doi.org/10.1111/j.1365-2788.2012.01616.x

Silvers, A. (2020). In Pursuit of Justice for Disability: Model Neutrality Revisited. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 23–39). https://doi.org/10.1093/oxfordhb/9780190622879.013.2

Singer, P. (1974). All Animals Are Equal. *Philosophic Exchange*, *5*(1), 103–116. https://digitalcommons.brockport.edu/phil_ex/vol5/iss1/6

Singer, P. (2001). *Animal Liberation*. Ecco Press.

Singer, P. (2004). Ethics and Disability: A Response to Koch. *Journal of Disability Policy Studies*, *16*(2), 130–133. https://doi.org/10.1177/10442073050160020401

Singer, P. (2010). Speciesism and Moral Status. In E. Kittay & L. Carlson (Eds.), *Cognitive Disability and Its Challenge to Moral Philosophy* (pp. 345–367). https://doi.org/10.1002/9781444322781.ch19

Singer, P. (2015). Why Speciesism is Wrong: A Response to Kagan. *Journal of Applied Philosophy*, *33*(1), 31–35. https://doi.org/10.1111/japp.12165

Sparrow, R. (2012). The perils of post-persons. *Journal of Medical Ethics*, *39*(2), 80–81. https://doi.org/10.1136/medethics-2012-100834

Sparrow, R. (2014). Ethics, Eugenics and Politics. In A. Akabayasi (Ed.), *The Future of Bioethics: International Dialogues* (pp. 140–151). https://doi.org/10.1093/acprof:oso/9780199682676.001.0001

Sparrow, R. (2016). Human Enhancement for Whom? In S. Clarke, J. Savulescu, T. Coady, A. Giubilini, & S. Sanyal (Eds.), *The Ethics of Human Enhancement: Understanding the Debate* (pp. 128–139). https://doi.org/10.1093/acprof:oso/9780198754855.003.0009

Steger, M. B., & Roy, R. K. (2010). *Neoliberalism : a very short introduction*. Oxford University Press. https://www-veryshortintroductions-com.uoelibrary.idm.oclc.org/view/10.1093/actrade/9780198849674.001.0001/actrade-9780198849674

Stramondo, J. (2017). Disabled by Design: Justifying and Limiting Parental Authority to Choose Future Children with Pre-Implantation Genetic Diagnosis. *Kennedy Institute of Ethics Journal*, *27*(4), 475–500. https://doi.org/10.1353/ken.2017.0039

Stramondo, J., & Campbell, S. (2020). Causing Disability, Causing Non-Disability: What's the Moral Difference? In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 139–153). https://doi.org/10.1093/oxfordhb/9780190622879.013.15

Stubblefield, A. (2010). The Entanglement of Race and Cognitive Dis/ability. In E. Kittay & L. Carlson (Eds.), *Cognitive Disability and Its Challenge to Moral Philosophy* (pp. 293–313). https://doi.org/10.1002/9781444322781.ch17

Taylor, S. (2017). *Beasts of Burden: Animal and Disability Liberation* (Illustrated ed.). The New Press.

Terzi, L. (2015). Vagaries of the Natural Lottery? Human Diversity, Disability, and Justice: A Capability Perspective. In K. Brownlee & A. Cureton (Eds.), *Disability and*

Disadvantage (pp. 87–109). https://doi.org/10.1093/acprof:osobl/9780199234509.001.0001

Thomas, T. (2021, April 26). *Inquest finds neglect contributed to woman's hospital death*. The Guardian. https://www.theguardian.com/uk-news/2021/apr/26/inquest-finds-neglect-contributed-to-disabled-womans-hospital-death

Tremain, S. (2020). Philosophy and the Apparatus of Disability. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 83–97). https://doi.org/10.1093/oxfordhb/9780190622879.013.5

Velleman, J. D. (2007). Against the Right to Die. *SSRN Electronic Journal*. Published. https://doi.org/10.2139/ssrn.1006992

Vorhaus, J. (2020). Respect, Identification, and Profound Cognitive Impairment. In A. Cureton & D. Wasserman (Eds.), *The Oxford Handbook of Philosophy and Disability* (pp. 400–412). https://doi.org/10.1093/oxfordhb/9780190622879.013.23

De, W. F. (2010). *The age of empathy : Nature's lessons for a kinder society*. ProQuest Ebook Central https://ebookcentral.proquest.com

Wagner, G. (2013). Levelling the Playing Field: Fairness in the Cognitive Enhancement Debate. In E. Hildt & A. Franke (Eds.), *Cognitive enhancement : An interdisciplinary perspective* (pp. 217–231). https://ebookcentral.proquest.com/lib/exeter/reader.action?docID=1206412&ppg=220

Waldschmidt, A. (2005). Who is normal? Who is Deviant?: "normality" and "risk" in genetic diagnostics and counseling. In S. Tremain (Ed.), *Foucault and the Government of Disability* (pp. 191–207). http://hdl.handle.net/10822/505981

Walsh, A. (2020). Distributive justice, equality and the enhancement of human cognition: A commentary on fairness and 'cognitive doping.' *International Journal of Drug Policy*, 102874. https://doi.org/10.1016/j.drugpo.2020.102874

Warren, M. A. (2000). *Moral Status: Obligations to Persons and Other Living Things (Issues in Biomedical Ethics)* (First Paperback Edition). Clarendon Press.

Wasserman, D. (2000). Stigma Without Impairment: Demedicalizing Disability Discrimination.". In L. Francis & A. Silvers (Eds.), *Americans with Disabilities: Exploring Implications of the Law for Individuals and Institutions* (pp. 146–162). Routledge.

Wasserman, D. (2012a). Devoured by our own children: the possibility and peril of moral status enhancement. *Journal of Medical Ethics*, *39*(2), 78–79. https://doi.org/10.1136/medethics-2012-100843

Wasserman, D. (2012b). Ethics of Human Enhancement and its Relevance to Disability Rights. *ELS*. Published. https://doi.org/10.1002/9780470015902.a0024135

Wasserman, D., & Asch, A. (2012). Selecting for Disability: Acceptable Lives, Acceptable Reasons. *The American Journal of Bioethics*, *12*(8), 30–31. https://doi.org/10.1080/15265161.2012.692445

Watson, N., & Vehmas, S. (2019). *Routledge Handbook of Disability Studies* (2nd ed.). Routledge.

Wendell, S. (1989). Toward a Feminist Theory of Disability. *Hypatia*, *4*(2), 104–124. https://doi.org/10.1111/j.1527-2001.1989.tb00576.x

Wikler, D. (2010). Cognitive Disability, Paternalism, and the Global Burden of Disease. In E. Kittay & L. Carlson (Eds.), *Cognitive Disability and Its Challenges to Moral Philosophy* (pp. 183–199). https://doi.org/10.1002/9781444322781.ch11

Williams, B. (2009). The Human Prejudice. In J. Schaler (Ed.), *Peter Singer under fire : the moral iconoclast faces his critics* (p. NA). Open Court.

Wilson, J. A. (2018). *Neoliberalism*. Routledge.

Wilson, J. (2007). Transhumanism and Moral Equality. *Bioethics*, *21*(8), 419–425. https://doi.org/10.1111/j.1467-8519.2007.00579.x

Wilson, J. (2011). Persons, post-persons and thresholds. *Journal of Medical Ethics*, *38*(3), 143–144. https://doi.org/10.1136/medethics-2011-100243

Wolfe, C. (2008). Learning from Temple Grandin, or, animal studies, disability studies, and who comes after the subject. *New Formations*, *64*. https://link.gale.com/apps/doc/A178452227/AONE?u=anon~b953b33&sid=googleScholar&xid=9649badb

Wolff, J. (2015). Disability among Equals. In K. Brownlee & A. Cureton (Eds.), *Disability and Disadvantage* (pp. 113–136). https://doi.org/10.1093/acprof:osobl/9780199234509.003.0005