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Disability and Human Enhancement

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Abstract

This thesis has three aims. Firstly, to make the case for considering disability and enhancement in parallel. There is an ethical need for debates on enhancement to incorporate disability perspectives, concepts of enhancement depend on concepts of disability, and drawing the two together can help us avoid biases. Secondly, to investigate which views on disability are consistent with which views on enhancement. It is difficult to oppose enhancement while holding that it is bad to be disabled. While some accounts that take a more positive view of disability or impairment, such as the strong social model, might imply that we should change society rather than using enhancements, other disability-positive views, such as the value-neutral model, leave room for the possibility that enhancement is beneficial for some people. Support for enhancement can thus be accompanied by a nuanced understanding of the relationship between disability and well-being, and enhancement need not be in conflict with disability justice. Third, to develop a substantive view on disability and enhancement. Disability, understood as socially salient limitation, is somewhat bad in general or on average, but the position defended leaves room for many cases in which disability is neutral or desirable. This view can thus capture what is right in both bad-difference and mere-difference views. Enhancements, understood as capacity-increasing technologies, are likely to be beneficial to many people, and are important to develop and make widely available. Nevertheless, individuals are not obligated to use them. Developments in these technologies should therefore be accompanied by concrete steps to ensure that society remains as accessible as possible for those who do not use them, just as we should promote accessibility for people considered disabled now.

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Various parts of the thesis, most notably portions of chapters 2 and 4, are published in: Chaproniere, L. (Forthcoming) 'Understanding the Relationship Between Disability and Enhancement', *Pacific Philosophical Quarterly*.

Author's Declaration

I declare that, except where explicit reference is made to the contribution of others, that this thesis is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.

Lysette Chaproniere

Introduction

0.1 Background and Aims

In a 2011 post on the rationality blog *Less Wrong*, a user by the name of Rubix poses an intriguing question: "Is it possible to identify as a happily disabled transhumanist?" (Rubix 2011). To many people, the thought of a happily disabled person of any sort would be surprising, to say the least. Common sense tells us that disability is a tragedy or a misfortune, and something that should be prevented or cured where possible. Yet some disabled people say they are happy being disabled, and that they wouldn't want a cure. Some philosophers and other theorists have argued that disability doesn't, by itself, make your life go worse than it otherwise would. A particularly influential example is Elizabeth Barnes's book *The Minority Body* (Barnes 2016). Barnes draws on a range of testimony from happily disabled people to argue that disability is neutral with respect to well-being.

There are happily disabled people, then, and people who believe that, in general, it's not bad to be disabled. But could such a person consistently be a transhumanist? I'll say more about what exactly transhumanism is later in this introduction; for now, I'll simply note that transhumanists are among those who advocate for the development of enhancement technologies. Eric Juengst and Daniel Moseley define enhancements as "biomedical interventions that are used to improve human form or functioning beyond what is necessary to restore or sustain health" (Juengst and Moseley 2019, sec. 1.1) Enhancements, according to this common way of understanding the term, can be distinguished from treatments for diseases and disabilities. Compare two students, both of whom are taking the stimulant medication Ritalin. The first student is taking it as a way to manage their ADHD symptoms. The second student does not have ADHD, or any other related disorder, but wants to improve their concentration while revising for exams. For those who accept the treatment/enhancement distinction, the first student is using Ritalin as a treatment while the second is using it as an enhancement. Not all authors accept the treatment/enhancement distinction; indeed, I will argue against it in chapter 2 of this thesis. [1] But whether we accept this distinction or not, disability and enhancement are commonly thought to be at opposite ends of a continuum, in that to become enhanced is to move away from the

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[1] For an overview of arguments against that distinction, see Resnik (2000).

corresponding disability state, and to become disabled is to move away from the corresponding enhanced state (Campbell and Wasserman 2020).

To return to, and rephrase, Rubix's question, then, if you think it's not bad to be disabled, would it be consistent for you to endorse enhancement? Theorists have already taken a range of positions on the compatibility, or otherwise, of enhancement advocacy with the aims and principles of the disability rights movement. However, a key contribution of the research arising from this thesis is that it systematically maps out which views on disability are consistent with which views on enhancement. I will argue, for instance, that opposition to enhancement is inconsistent with the view that it's bad to be disabled. If you think that disability is *not* bad for the disabled person, then whether you can consistently endorse enhancement is more complicated, since it depends on the details of your view about disability. Broadly speaking, if you accept that disability is bad for some people, even if it's neutral overall, and that those people would benefit from removing their disabilities, it's consistent with your view to say that some people might benefit from using enhancements. I will also develop my own conception of disability and enhancement, which will be described later in this introduction when I outline the content of each chapter. Before doing this, I will explore the benefits of bringing together perspectives on disability and enhancement. Thus, this thesis has the following three aims:

1. To make the case for considering disability and enhancement in parallel (chapter 1).
2. To investigate which positions on disability are consistent with which positions on enhancement (chapters 2, 3 and 4).
3. To develop a substantive view on disability and enhancement (chapters 5, 6 and 7).

0.2 Terminology

No terminology in this area is uncontroversial. Whichever terms I use, some readers will disagree with my choices. Perhaps I cannot persuade these readers to accept my uses of terms as correct, but I can at least explain my terminological choices and the reasoning for them.

I use the word 'disability' to pick out properties or traits of individuals. This does not mean I think disability is apolitical, or that it does not depend on society in any way. Indeed, on the view of disability I defend in chapter 5, which traits count as disabilities depends in part on the social context. It does, however, differentiate my view from the social model, which would refer to these traits as 'impairments', and reserve the term 'disability' for the societal injustice imposed upon people with impairments. I do not make a distinction between impairment and disability except where I am specifically discussing theories that do so. It also differentiates my view from that of Shelley Tremain, who understands disability as an apparatus of power (Tremain 2017).

I tend to use the term 'disabled people' rather than 'people with disabilities'. This is primarily because 'disabled people' seems to me a more natural, less awkward phrase. As Elizabeth Barnes notes, we talk of gay people, rather than people with gayness (Barnes 2016, p. 6). However, I am not averse to using 'people with disabilities' and similar phrases where these fit better into the sentence.

I use the word 'ableism' to refer to the oppression of or discrimination against disabled people. Some writers use the word 'disableism' for this, but I use 'ableism' simply because, in my experience, it is the more common term.

While the term 'disability', as I use it, refers to traits or properties of people, the term 'enhancement', as it is typically used in the literature, refers to processes or interventions that modify people's traits, rather than to the traits themselves. This creates a problem for comparisons between the two. It would be simpler to use both 'disability' and 'enhancement' to refer to traits, as do Campbell and Wasserman (2020), or, perhaps, to compare enhancement processes with interventions that cause or remove disability. However, this is not how these debates have usually been framed. The primary debate within philosophy of disability has been about the impact of disability traits on well-being; Andrew Schroeder even describes it as "the central issue in the philosophy of disability" (Schroeder 2018, p. 1). Meanwhile, the primary debate on enhancement has been about whether, or when, we ought to use enhancement processes. Adina Roskies, for instance, introduces the topic of enhancement by summarising arguments for and against the use of what I am calling enhancement processes (Roskies 2021, sec. 2.1). I am interested in whether claims commonly made about enhancement are consistent with claims commonly made about disability, and that requires me to attend to both processes and traits.

To overcome this problem, where it is important to make this distinction, I will use the terms 'enhancement processes' and 'enhancement technologies' to refer to interventions that add or increase capacities. Enhancement processes, then, take people further from disability. I use the term 'enhanced traits' to refer to the sorts of traits that one might expect to be the outcome of such processes, but I will particularly have in mind capacities that are above what is typical or average. By 'enhanced traits', then, I mean something like what Campbell and Wasserman (2020) mean by enhancements. I contrast these with unenhanced traits, which I understand as levels of capacity that are neither disabilities nor enhanced traits. By 'enhancement processes', I mean interventions that create new capacities as well as those that augment existing ones. Meanwhile, I will describe interventions that remove disability as disability-removing processes.

I will argue, in chapter 5, that on the most promising account, disability-removing processes count as a subset of enhancement processes. This approach does not respect the treatment/enhancement distinction. However, I have not yet argued against that distinction, so I will restrict my use of the term 'enhancement processes' to non-therapeutic interventions, so that I can explore how these interventions compare to disability-removing processes, and why it might not make sense to distinguish between the two categories.

Proponents of enhancement are sometimes described as transhumanists. This term clearly refers to some, but not all, enhancement advocates, but it is not always clear where to draw the line. Melinda Hall describes transhumanists as "the strongest promoters of human enhancement" (Hall 2020, p. 633), while Adina Roskies, after introducing the debate between transhumanists and bioconservatives, immediately notes that "[t]hese value-laden appellations may unnecessarily polarize a debate that need not pit extreme viewpoints against each other" (Roskies 2021, sec. 2.1). But stating that transhumanism is a "strong" or "extreme" view does little to clarify the difference between transhumanists and other enhancement advocates. I would suggest that, given the contexts in which the term is typically used, it makes sense to define transhumanists as those who endorse the more radical forms of enhancement, as opposed to those enhancement advocates, such as Nicholas Agar, who endorse enhancement only when it makes more moderate alterations. Importantly, though, as I understand the designation, transhumanists needn't hold that radical enhancement is obligatory for all individuals, or that it would be good for everybody, although some might take this view. The primary commitment of transhumanism, as I understand it, is that radical enhancement technologies should be developed and made widely available. Whether I talk of 'transhumanists', or use an alternative term such as 'enhancement advocates' or 'proponents of enhancement', depends on which terms are being used in the literature under discussion, how the authors being discussed identify their own views (or the views they are criticising), and whether I am primarily discussing moderate or radical enhancement. However, I will clearly differentiate between moderate and radical enhancement when I am discussing that distinction, so my choice of terminology here does not hold any real significance for the philosophical issues.

Transhumanists, as mentioned in the previous paragraph, are sometimes contrasted with bioconservatives. I do not use this term; the critics of enhancement I engage with in most detail are not best described as political conservatives, so adopting this term would be more confusing than clarifying.

0.3 Scope

This thesis cannot cover every property or intervention that might be classified as either a disability or an enhancement, or every philosophical issue that might arise in discussions of them. Both disability and enhancement are broad categories containing a variety of traits and medical interventions, perhaps some of which should be supported or valued and others should not. Given the heterogeneity of traits and interventions that might be classified as disabilities or enhancements, it might not make sense to talk about disability or enhancement in general without some sense of what unifies these categories. I will develop my own account of disability and enhancement in chapter 5, but it's worth noting here that I understand disabilities as a type of limitation of the body or mind, and enhancements as interventions that add or increase capacities. I will, therefore, be primarily concerned with disabilities and enhancements that can be understood in terms of limitations and capacities. This could include, for instance, physical, sensory, and cognitive limitations, as well as having a limited lifespan. I'm understanding capacities as directly the opposite of limitations.

Not all types of enhancement will be covered in detail. For the most part, I will not be covering moral enhancement. That's because the arguments for and against moral enhancement are likely to be quite different from the arguments for and against, for instance, cognitive enhancement. My arguments will primarily be concerned with the value of disabilities or enhanced traits for the people who have them, and the implications of this for which traits ought to be changed. These are not the primary considerations when evaluating moral enhancement. If I ought to use moral enhancement, that's because of the effect it will have on other people, and not, or not primarily, because it will increase my well-being. [2] If a cognitive enhancement increases well-being, that provides a strong reason for using it. If a cognitive enhancement decreases well-being, that provides a strong reason not to use it. That's not to say that the effect on the well-being of the enhanced individual is the only relevant concern in assessing the value or moral permissibility of cognitive enhancement, but it's much more centrally relevant than in the case of moral enhancement.

Debates about equality highlight another important difference between moral enhancement and the kinds of enhancement I discuss in more detail. Gyngell and Selgelid (2016) argue that interventions at the treatment end of the spectrum will, all other things being equal, tend to promote equality, since they improve the functioning of people who are worse off in the relevant domain, whereas interventions at the enhancement end of the spectrum tend to increase inequality, because they increase the capacities of people who are already at an average or high level of functioning. The same pattern probably does not hold for moral enhancement, they argue, because moral enhancement may make people more likely to sacrifice their well-being for others, which may promote equality. In chapter 2, I will argue that egalitarian concerns do not provide strong reasons against enhancement, and that in fact, interventions such as cognitive enhancement and lifespan extension can, sometimes, be part of a strategy for promoting equality. Robert Sparrow has argued against moral enhancement on egalitarian grounds (Sparrow 2014), but his objections are quite different from the kinds of egalitarian objections to enhancement I will consider. If moral enhancements reduce inequality, they do so by increasing the likelihood of equality-promoting behaviours and attitudes. When other kinds of enhancement either increase or reduce inequality, they do so by altering people's levels of capacity relative to others, or at least, these are the primary effects on equality I will be discussing. [3]

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[2] Carter and Gordon (2015) have argued that the distinction between cognitive and moral enhancement cannot always be as sharply drawn as has been thought. One thing that might make it easier for me to draw this distinction is that a cognitive enhancement, as I would use the term, is an intervention that adds or increases a cognitive capacity. An enhancement, then, needn't necessarily be an improvement in any broader sense than that.

[3] One might argue that cognitive enhancement, like moral enhancement, might make people behave in ways that either reduce or increase inequality, for instance, by inventing new technologies that have social consequences. However, I will not be discussing this kind of effect.

My final reason for mostly setting aside moral enhancement is that, as stated earlier in this introduction, many kinds of enhanced trait exist on a continuum with disabilities at the opposite end. The same is not true of moral enhancement; the opposite of a morally enhanced state is not a disability, or at least such states are not what I have in mind when I use the term 'disability', and nor are they among the paradigm cases of disability. As I will argue in chapter 3, where I do address an objection to moral enhancement, that difference matters when deciding whether moral enhancement is problematic from the perspective of disability justice.

I also will not discuss implementation issues such as ethical concerns arising from the risks associated with particular biomedical technologies, or the differences between different methods of treatment or enhancement. I will not discuss, for instance, whether the distinction between somatic and germline genetic editing is morally significant. More generally, a parent selecting embryos with particular genes raises quite different ethical issues than an adult choosing to take a performance-enhancing drug. In general, I will primarily have in mind cases where people are deciding for themselves whether to undergo a treatment or enhancement process. I only briefly address other kinds of cases, such as genetic selection, and do not address the ways in which these practices raise distinctive ethical issues.

0.4 How the Thesis will Proceed

Chapter 1 presents my case for thinking about disability and enhancement in parallel. We ought to evaluate views on disability and enhancement as combined positions, because the arguments for and against each position are likely to be quite different. The arguments against enhancement made by those who believe disability is bad, for instance, are different from the arguments against enhancement made by those with disability-positive views. There is an ethical need for debates on enhancement to incorporate disability perspectives, and for us to carefully evaluate both the benefits of increasing our ability to modify our traits and the risk that, in deciding which traits should be valued and which ones should be altered, our judgements will be tainted by ableism and other oppressive attitudes. Most concepts of enhancement already incorporate presuppositions about disability. Bringing together perspectives on disability and enhancement makes it easier to avoid bias by, for instance, allowing us to check our views for consistency.

My exploration of different combinations of views on disability and enhancement begins in chapter 2, where I consider the view that disability and enhancement are both undesirable, i.e. disabilities are bad for the disabled person and should be removed where possible, but that people's traits should not be enhanced beyond the norm. I suggest that arguments for the badness of disability work equally well as arguments for the badness of unenhanced traits, and arguments against enhancement work equally well as arguments against removing disability. Those who defend this view will need to find ways of making the distinction between enhancement and the removal of disability, or between disabilities and unenhanced traits. I critique several strategies for making this distinction, including the view, defended by Norman Daniels, that keeping people as close as possible to normal functioning helps to maintain equality of opportunity. I argue that enhancements can sometimes be a means of promoting equality, and that the interventions that bring disabled people closest to normal functioning are very often not the ones most likely to equalise opportunities. The view that we should remove disabilities while refraining from enhancement can only work, I argue, if the value of any given capacity depends primarily on whether others have it. This might be the case, for instance, if human capacities are positional goods. I suggest that, although some of the bad effects of disabilities stem from their statistical atypicality, the value of most capacities does not depend primarily on their distribution within the population. I therefore conclude that this combination of views is untenable.

In chapter 3, I turn to a different type of case against enhancement: one that, unlike the normal functioning view, does not depend on the treatment/enhancement distinction. This is a set of arguments according to which enhancement is in conflict with disability justice. The chapter responds to several arguments of this sort by Melinda Hall. Transhumanism, according to Hall, denigrates disabled people by devaluing interdependence and vulnerability, and implying that disabled people are dangerous. Hall is concerned that, in promoting enhancements such as radical lifespan extension, transhumanism devalues our vulnerability, thereby rejecting and making an enemy of the disabled body. At the same time, she rightly objects to unjust medical practices that leave disabled people at greater risk of death. This would suggest that bodily vulnerability is to be embraced in the one kind of case but avoided in the other. I argue, however, that it is hard to find a relevant distinction between these kinds of cases. Various possible ways of making the distinction, such as distinguishing between natural or biological risks, and those arising from social circumstances, are unsatisfactory. Hall argues that the transhumanist emphasis on autonomy presupposes an atomistic conception of the self, which devalues disabled people on the basis that dependence and interdependence are undesirable. I argue that nothing prevents us from understanding the relevant kinds of autonomy in relational terms, and that enhancements needn't necessarily make us more separate from one another. As well as responding to these and other arguments by Hall, I also address the argument that enhancements have bad consequences within oppressive social contexts. While this concern should not be entirely dismissed, making body-altering technologies more difficult to access can also be very harmful. Although enhancement can be used and promoted in ways that reinforce ableism and other oppression, transhumanism needn't be in conflict with disability justice.

Chapter 4 continues my investigation of whether enhancement advocacy is consistent with the various views promoted by disability activists and theorists. The chapter examines three different views of disability, all of which reject the bad-difference view: the social model, Shelley Tremain's Foucauldian account, and Elizabeth Barnes's value-neutral model. For each of these theories, I draw out its implications for enhancement, and then evaluate it as a combined view on both disability and enhancement. The social model distinguishes between impairments, which are traits or properties of the person, and disability, which is the social disadvantage imposed upon people with impairments. It is also often understood as claiming that all, or at least the most substantial, bad effects of being disabled are attributable to disability rather than impairment, and so we should change society rather than changing disabled people's bodies. Those who accept this strong reading of the social model cannot easily endorse enhancement, although the same does not necessarily apply to weaker versions of the social model that do not share all of its normative commitments. The Foucauldian account, like the social model, attributes the bad effects of disability to society, but rejects the social model's impairment/disability distinction. This account seems inconsistent with support for enhancement, given that it tends to downplay the significance of physical or psychological properties in favour of an emphasis on the effects of power and discourse. However, the view that we should reject biological alteration in favour of social reform depends on the idea that there is a reasonably clear distinction between the biological and the social, or between nature and culture, and it is not clear that the Foucauldian account has the theoretical resources to uphold such a distinction. Barnes's value-neutral model suggests that disability does have some bad effects that cannot be removed through social reform, but it is still neutral overall because it also comes with goods, some of which might be unique to disability. This view can accept that disability might be bad for some people, and some of these people might benefit from removing their disability. Likewise, it can accept that some people might benefit from enhancement. While it would not make sense for those who accept the value-neutral model to hold that enhancement of capacity reliably increases well-being for most people, they might, and probably should, think the availability of enhancement technologies could have significant benefits for people's freedom over their own body or mind, and/or for promoting valuable forms of diversity. Whether this means enhancement should, on balance, be endorsed depends on how one assesses the consequences.

Having investigated some existing accounts of disability in chapter 4, and drawn out their implications for enhancement, in chapter 5, I develop my own account of disability and enhancement. I suggest that we should endorse a family of views I call contextual functioning accounts. According to these views, to be disabled is, roughly, to be unable to function in ways that are, or are taken to be, typical, normal or default within a given social or environmental context. Disability, then, depends partly on the functioning or capacities of the body or mind, and partly on social and/or other contextual factors. This family of views includes Campbell and Wasserman's typical functioning account, and Jenkins and Webster's concept of marginalised functioning. I then develop my own version of this type of view, on which disabilities are limitations of the body or mind made salient within a given social context. While my arguments in previous chapters suggested that disabilities and unenhanced traits should be treated in the same way, this account tells us what it is that disabilities and unenhanced traits have in common: both are limitations. Furthermore, the account can help us to understand both the way that disability fits onto a continuum of human abilities, and the distinctive social situation of disabled people. After laying out this account of disability, I investigate how one might develop a corresponding account of enhancement in relation to it. I present three candidate accounts. The strongest of these, I argue, is that any intervention that adds or increases a capacity counts as an enhancement. In contrast with most of the literature, then, disability-removing processes would be a subcategory of enhancements. On this account, if enhancement technologies develop and become more widespread, so that more people can enhance their capacities to higher levels, and if society changes to reflect the commonness of enhanced traits, the people we now think of as merely unenhanced will count as disabled, and so our societal obligations to these people will be the same as our societal obligations to the people we currently consider disabled.

The concept of limitations will then be useful in understanding the relationship between disability, or enhancement, and well-being. Those who hold that disability is bad, and enhancement good, can often be understood as claiming that it is bad to have limitations and that limitations should be removed wherever possible, whether that means removing the limitations that count as disabilities, or removing the limitations we now consider normal. On the other hand, those who argue against enhancement, and those who argue that it is not bad to be disabled, are often arguing that limitations are sometimes good for us. Thus, it is possible to address debates on disability and enhancement simultaneously by asking, is it bad to have limitations?

In chapter 6, I answer this question by drawing upon debates from the disability literature about the relationship between options and well-being, and debates from the enhancement literature about the value of achievement. Limitations tend to reduce a person's options, and so a way to evaluate this view is to ask whether having more options increases well-being. This question has been discussed extensively in debates about the impact of disability on the well-being of the disabled person. On the one hand, those who hold that it is bad to be disabled argue that if you have reduced options, you might lack some options you would have wanted, and that, to the extent that disability appears to have benefits, people without the relevant disability have ways of accessing the same goods. On the other hand, those who hold that disability is *not* bad for the disabled person argue that there is no benefit in having options you didn't want, and that none of us can use all of our available options anyway. I argue that both of these perspectives are correct. It is true that, in many specific cases, the additional options brought about by added capacities are of no value to a given person, and do not, or would not, increase their well-being. Nevertheless, there is an important sense in which disabilities and other limitations are suboptimal; there is an important asymmetry between disability and non-disability, or between limitations and capacities in general: it is worse to lack a desired option than to have an unwanted option, so having a limitation you didn't want is worse than having a capacity you didn't want. In general or on average, then, it is better to have more options, but what is true on average is often not true of particular cases.

Turning to the debate about achievement, one of the more common arguments against enhancement is that it creates easy shortcuts which compromise the value of our achievements. This can be understood as an argument for the value of limitations. I suggest that arguments of this sort should largely be rejected, and that they do not provide a good reason against enhancement in general. However, some specific people may value certain kinds of achievement made possible by their limitations, such as the ways a disability might have led them to find creative solutions to problems, or to develop their other capacities. As with the options debate, these considerations in the achievement debate should lead us to conclude that, in general or on average, it is better to have more capacities and fewer limitations, and so we should expect enhancement to generally be beneficial. However, in many specific cases, people do value their disabilities and other limitations, and these preferences should be respected, not dismissed as obviously irrational or mistaken.

The view on well-being developed in chapter 6 does not distinguish between disabilities and unenhanced traits. One might think, however, that we should distinguish between moderate enhancement, that is, enhancement of capacities to levels within or close to what is currently possible for humans, and radical enhancement, that is, enhancement of capacities to levels significantly beyond that. Nicholas Agar argues for such a distinction, arguing that we should endorse moderate enhancement but reject radical enhancement. If Agar is right, my arguments from chapter 6 won't extend to radical enhancement. In chapter 7, I use L.A. Paul's concept of transformative experience to respond to some of Agar's arguments against the prudential value of radical enhancement. Agar worries that, since radical enhancement is a transformative change, we would be turning ourselves into something that it would be bad for us to become. Yet as Paul argues, some people might value such a transformation for the revelation it offers. Moreover, Agar's concerns don't seem to apply if we move towards radically enhanced states gradually, through a series of moderate enhancements. Agar's arguments might well count as good reasons for some people to enhance gradually, or not to enhance at all, but they do not succeed as arguments against the prudential value of radical enhancement in general. I thus argue that the view I developed on disability and moderate enhancement, on which capacity increases tend to be beneficial in general but can be rationally resisted in many specific cases, also broadly applies to radical enhancement.

Chapter 1: Why Disability and Enhancement?

1.1 Introduction

Before I begin to evaluate substantive positions on the relationship between, and the value of, disability and enhancement, I want to make the case for assessing perspectives on disability and enhancement in light of one another. Each section of this chapter presents a different type of reason for doing this, covering the benefits for our understanding of the ethics, epistemology, and conceptual nature of these phenomena.

1.2 The Advantages of Evaluating Combined Views

The connections between disability and enhancement are interesting in their own right, but evaluating views on them as packages, that is, as views on disability and enhancement, rather than as views only on disability or only on enhancement, can help to make our arguments more precise. Before explaining why this is, it will help to get a more precise sense of what each of the individual positions on disability and enhancement involves. In describing these positions, I don't mean to suggest that these debates can be reduced to simple binaries. Some positions on disability or enhancement are more moderate or qualified than the ones set out below. [4] Nevertheless, the following should give a good idea of what is involved in these debates.

Those who accept the bad-difference view of disability (BDV) hold that disability lowers well-being, and that this is not entirely attributable to ableist discrimination. They can acknowledge the existence of ableism and hold that it plays a large role in the reduction of disabled people's quality of life, but they hold that the disability itself also reduces well-being. This need not be a very strong claim, such as that life with a disability is not worth living, or even that disability always reduces well-being, regardless of the person's circumstances. The badness of disability might be understood probabilistically; one view might be, for instance, that any disabled person is likely to be worse off than a relevantly similar non-disabled person (Barnes 2016, p. 60). But since disability is, in some sense, bad for the disabled person, proponents of this view typically see disability as something to

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[4] See, for example, Harris (2011) and Agar (2013). Both of these authors are in favour of many types of enhancement, but Harris opposes moral enhancement and Agar opposes radical enhancement.

be avoided or cured, rather than valued or preserved. Not valuing disability, however, needn't mean not valuing disabled people. John Harris argues that choosing to remove disability, or select against disability in reproduction, does not imply that disabled people are any less valuable or worthy of respect than non-disabled people. All people are equal, and no disability can detract from a person's moral worth, but disability is nevertheless a harm which should be avoided where possible. (Harris 2001).

By contrast, some disability theorists reject the BDV, holding instead that being disabled does not make a person's life go worse, or at least that it wouldn't in the absence of ableism. This does not mean it is good to be disabled. Instead, these theorists have often argued for the mere-difference view of disability (MDV), which claims that disability is neutral with respect to well-being. Some defenders of the MDV might argue that there would be nothing bad about disability in the absence of ableism, but Barnes (2016) has developed a version of this position according to which, although disability is neutral with respect to well-being, it nevertheless has some bad aspects that would persist in the absence of ableism. Not all theorists who argue that disability does not reduce well-being would describe their position as an MDV. Shelley Tremain, for instance, argues that "disability should be understood as an apparatus of productive force relations rather than as a personal characteristic, an identity, a difference, or a form of social oppression." (Tremain 2017, p. 204). Yet like Barnes and other mere-difference theorists, Tremain is critical of the view that disabled people have lower quality of life (ibid, pp. 171-173). Although they are different in many ways, it makes sense to group these theorists together, at least for some purposes, on the basis of their rejection of the BDV.

Proponents of enhancement hold that people should be free to use biomedical technologies to extend their capacities or modify themselves, perhaps in radical ways, even if there is no identifiable disorder. This is not the view that every possible use of biomedical technology should be pursued, but it does generally mean that distinctions such as that between treatment and enhancement processes, or between enhancement processes and more traditional methods of self-improvement such as education, are not in and of themselves morally significant. Indeed, collapsing these distinctions is a common strategy for arguing in favour of enhancement. If it is good to treat those whose capacities fall below species-typical norms, why draw the line there? Isn't it also good to enhance people's capacities beyond that? If it is good to improve people's cognitive capacities through education, why wouldn't it also be good to improve people's cognitive capacities through technological means? [5]

To understand different forms of opposition to enhancement, it is useful to consider how these arguments for enhancement might be rejected. Consider the conditional: if it is good to treat conditions that fall below species-typical functioning, then it is good to enhance traits beyond that norm. On the one hand, some might hold that the conditional is false, and insist on maintaining the distinctions the proponent of enhancement attempts to collapse. There really is a significant distinction between treatment and enhancement processes, or between enhancement processes and education. This needn't involve a simple binary, where treatment is always good or permissible and enhancement processes are always bad or impermissible; instead, it might be that an intervention's being an enhancement process should act as a warning sign, or a reason to scrutinise it especially carefully (Daniels 2000).

On the other hand, some may accept the truth of the conditional, concurring with the proponent of enhancement in denying the significance of normal or species-typical functioning, while rejecting its antecedent. While few would entirely reject the practice of treating disorders, some have argued that cure is not always the best response to disability, and some of these people might have the same concerns about enhancement processes.

The above descriptions of the individual positions already begin to indicate the ways in which evaluating combined views can be helpful. I have already highlighted two distinct kinds of opposition to enhancement: opposition to enhancement in combination with the BDV, which relies on the treatment/enhancement distinction, and opposition to enhancement in combination with a disability-positive view, which does not rely on that distinction and generally rejects it. It might seem sensible to evaluate the case against enhancement by evaluating the distinction between treatment and enhancement. However, opponents of enhancement needn't rely on that distinction, since they could argue that reasons not to enhance also count as reasons not to remove disability. Those who wish to put forward, or critique, the strongest arguments against enhancement should therefore attend to both kinds of case.

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[5] See e.g. Agar (2004) and Bostrom and Sandberg (2009a) for arguments of this sort.

Similarly, in debates about disability, we might evaluate the BDV, but it should be noted that the BDV in combination with opposition to enhancement is importantly different from the BDV in combination with support for enhancement. The former values capacities or traits in the normal range, whereas the latter tends to hold that it is better to have more capacities, or at least that, for most traits, it is better to be at one end of the spectrum rather than the other. The arguments for or against these two positions are likely to be quite different.

Once the combined positions are understood, it becomes easier to answer questions that cross the boundary between these debates. When, if ever, is it good to have limitations? Are social changes always preferable to biological changes? That is not to say that, for instance, limitations are either always bad or always good, but rather that the distinction between good and bad limitations should not be assumed to coincide with the distinction between disabilities and unenhanced traits.

1.3 The Ethical Case

In saying that there is an ethical case for considering disability and enhancement in parallel, I mean to make two distinct but interrelated claims. Firstly, there are payoffs in ethical theory, and in applications of it, because debates on these two topics raise many of the same moral and political questions. My primary claim here is not so much that the same questions are raised within both literatures, though that is sometimes true, but rather that similar issues are relevant to both and so are worthy of discussion within both. Some of these questions are about reproductive ethics. Should parents select the child with the greatest chance of well-being, as Savulescu (2001) suggests? If so, does this mean that parents should select against disability, and for enhanced traits? Or conversely, are Asch and Wasserman (2005) right to say that parents who have selected against disability have not behaved as well as they could? Another set of questions concerns distributive justice, most obviously the allocation of healthcare resources. Is it true that the state is obligated to provide or subsidise treatments that remove or reduce disability, but is not obligated to, and perhaps should not, provide or subsidise enhancements? The answers to these questions about ethics and policy will probably depend partially on the answers to questions about the relationship between traits or capacities and well-being. Do disabilities tend to reduce well-being, and do enhanced capacities tend to increase well-being?

This thesis will not answer all of these questions in detail; for instance, as stated in the introduction, I will have little to say about reproductive ethics. But for the questions I do not address, I hope to provide a theoretical framework that may be useful in beginning to answer them.

Secondly, I mean to claim that morally, discussions of enhancement ought to incorporate disability perspectives. In part, this is simply because enhancement technologies raise issues of concern to all marginalised groups; we might, for instance, worry that our judgements about the value of various possible enhancements are tainted by racism and other forms of bigotry. But disability seems to be of special relevance. Trans experiences, too, seem to have a particular relevance for enhancement, given the interest of many trans people in body modification. This thesis touches on trans experiences and themes at several points, but it does not provide a detailed exploration of the relationship between transness and enhancement.

The relevance of disability, in part, is conceptual, as I will discuss later in this chapter. But disability activists have been particularly active in challenging common-sense ideas about which bodily and psychological traits are likely to improve quality of life. Eva Kittay asks, "Who decides which characteristics are worthy of value and should be enhanced?" She "argue[s] for extreme caution in proceeding to develop enhancements" (Kittay 2019, p. 24). This is an important question, and undoubtedly some amount of caution is necessary when developing enhancements, given the dangers of insufficient epistemic humility about which characteristics are valuable. Cautions of the sort expressed by Kittay often stem from worries about eugenics. Several authors have directed the charge of eugenics against proponents of enhancement (Sparrow 2011; Hall 2016, especially ch. 3; Levin 2021, especially ch. 5). Some enhancement advocates openly embrace the label of eugenics for their views, arguing that eugenics needn't be a bad thing if practiced by individuals, such as parents freely deciding on their children's traits, rather than coercively by the state (Harris 1993; Agar 2004). Others reject the label, differentiating their proposals from eugenics by suggesting that people should have the freedom to decide for themselves what would constitute their own improvement, and should thus be free to decide which enhancement technologies, if any, to use. (Bostrom 2005a). Whether the worries typically expressed in accusations of eugenics are justified, for any given enhancement proposal, probably depends on a number of things. Does the proposal allow people the freedom to decide which enhancement technologies to use, including the freedom not to use any at all? Does it recognise that whether people truly have such freedoms depends, at least in part, on external, social circumstances? Does it recognise the complexity of the science involved, for instance, that many of our traits are the results of complex interactions between our innate or biological properties and our external environment, rather than being controlled by a single gene? [6]

Yet, as Linda Barclay argues, while caution and humility are needed when making judgements about which traits are valuable and should be enhanced, this does not mean we should entirely refrain from making such judgements (Barclay 2016, p. 85). On the one hand, if we do not carefully examine our biases when making such judgements and listen carefully to people whose testimony might be surprising to the majority, we risk committing harms to which disabled and other marginalised people are particularly vulnerable. We might be attempting to eliminate traits we take to be obviously detrimental, when in fact they are a source of pride and joy for, and important aspects of the identity of, people who have them. On the other hand, if we entirely cease developing and using enhancement technologies and disability-removing processes, we risk allowing a great deal of unnecessary suffering. Some people do dislike their disabilities and other bodily or psychological states, and as I will argue in chapter 3, it cannot be assumed that the desire to modify one's body always stems from internalised oppression. Thus, we must answer questions about which traits are valuable, and which ones ought to be enhanced, in ways that incorporate disability perspectives.

Some might want to answer these questions simply by saying that people should be enabled to decide which of their traits are valuable to them, and which ones they want to change. This is an important part of the answer, and our theories about which traits are valuable must be able to accommodate a wide range of personal perspectives. For many disabilities, for instance, there are those for whom the disability is deeply valuable, those who long to have the disability removed, as well as those whose attitudes towards the disability are more ambivalent or complicated. Our theories should not presuppose that all cases of any of these attitudes can be explained away. Yet bodily autonomy cannot be the entirety of the answer to these questions. Some people either have not formed any preferences about these matters, or cannot communicate their preferences, including young children and some people with severe cognitive disabilities. In such cases, we need

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[6] For another perspective on what is and is not wrong with eugenics, see Buchanan et al. (2000) ch. 2.

theories that give us guidance about when to modify such people's traits, and when to leave them as they are. A commitment to bodily autonomy, and freedom over one's psychological or cognitive states, also cannot entirely answer questions about policy. It cannot tell us, for instance, which body modifications and cognitive alterations to prioritise developing, and whether there are modifications that are not worth developing at all. Most of us, for instance, can agree that the eradication of smallpox was entirely a good thing, and bodily autonomy does not give us any reason to bring it back. It's reasonable to assume that nobody would choose to have it. On the other hand, preferences for disability may be unusual, but do exist, so we should not make individual or policy decisions under the assumption that no one would want to be disabled. Likewise, we need to develop ethical and policy positions on enhancement, which requires us to have a general sense of which traits and capacities tend to be valuable, which in turn requires disability perspectives.

1.4 The Conceptual Links

Disability and enhancement are intimately linked conceptually. Most if not all accounts of enhancement depend on assumptions about the nature of disability, and/or face similar issues as do related accounts of disability. Often, interventions that remove disability are excluded from the category of enhancement. In these cases, we cannot know which interventions count as enhancements until we know which properties count as disabilities. Other accounts do away with the distinction between enhancement and the treatment of disorder, thereby creating an even closer link between the two. On many popular ways of conceptualising them, disability and enhancement are on a continuum, where enhancement takes people further from disability states. To substantiate and elaborate on these claims, I will discuss, in turn, each of the seven accounts of enhancement summarised by Gyngell and Selgelid (2016) drawing out its implications for disability. [7] At this stage, it is not my primary aim to argue for or against any of these accounts, although I do sometimes mention potential criticisms. I will critique various accounts of disability and enhancement in more detail, and then defend my own view, in later chapters. My aim in this section is, rather, to illustrate the conceptual connections between them.

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[7] I present the accounts in the same order as do Gyngell and Selgelid, with the sole exception that I have reversed the order of the first two. It makes more sense to describe normal functioning before explaining how constructivist accounts reject it.

1.4.1 The Normal Functioning Approach

Enhancements are typically understood as interventions into biology that go beyond what is necessary to treat disease (see e.g. Juengst and Moseley 2019, sec. 1.1). This way of understanding enhancement has been called the not-medicine approach (Savulescu, Sandberg and Kahane 2011; Earp et al. 2014). This approach uses a naturalistic account according to which a disease reduces a biological function to below its statistically typical contribution to survival and reproduction (Boorse 1977). An enhancement, then, would be an intervention that goes beyond the restoration of normal functioning. The normal functioning approach also serves as an account of disability. Disabilities and enhanced states both take people further from normal, and it's often thought that both of these departures from normal functioning are undesirable. This might be, for instance, because keeping people as close as possible to normal helps to promote equality (Daniels 2000).

This approach has received significant criticism within the disability literature (Silvers 1998; Barnes 2016, pp. 13-16). Disability-positive theorists, like proponents of enhancement, oppose the idea that a trait is necessarily good because it is natural or normal, and agree that normally functioning bodies and minds are not inherently better. As Linda Barclay notes, arguments against enhancement by authors such as Michael Sandel rely on claims about the value of normal traits which disability advocates reject (Barclay 2016). Similarly, Scully and Rehmann-Sutter (2001) argue that a treatment/enhancement distinction based on normal functioning further pathologises disabled people. Both disability advocates and transhumanists have argued for the right to have a body that deviates from the norm (Silvers 2008; Sandberg 2013). In addition to these debates over the normative significance of normal functioning, Amundson (2000) has questioned its scientific status. Proponents of the normal functioning approach to enhancement would therefore need to respond to this disability challenge.

1.4.2 The Constructivist Approach

Constructivist accounts of enhancement combine the not-medicine approach with the idea that what counts as disease depends on societal values. It might be that, for instance, particular states come to be classified as diseases because they are socially disvalued. Within this approach, the distinction between treatment and enhancement is relative to societal context and may change over time (Gyngell and Selgelid 2016, p. 113).

Disability, too, is often thought to be dependent on social context. What counts as disability, or impairment, depends, at least in part, on society in some way. I will be discussing several accounts of this sort in detail in chapters 4 and 5. For now, it suffices to say that, as with the accounts of disease just described, these accounts make disability relative to social context, so what counts as disability changes over time. It may even be that categories such as impairment and disability cannot usefully be applied to some times and places. As Tremain argues, "once one acknowledges that the category of 'normal' does not identify an ahistorical and universal internal state or characteristic, one should concede that the identity of a category—such as impairment—that is defined in terms of its departure from the normal is also a historically contingent construction." (Tremain 2017, pp. 115-116). Barclay speculates that in a possible future world without stigma and injustice, people will celebrate characteristics such as blindness, deafness and limb differences rather than disability or impairment per se (Barclay 2018, p. 27). Barnes's account of disability does not incorporate contingency in quite the same way as other constructionist accounts, but she suggests that, in 100 years, it's possible that our current disability category will be of primarily historical interest (Barnes 2016, p. 52).

If these constructionist approaches to disability are correct, and if our account of enhancement should exclude the removal of disability as well as the treatment of disease, then what counts as enhancement changes over time. It might even be that the enhancement category, if defined to exclude disability, will cease to be useful at some time in the future, assuming it is useful now (it may not be).

1.4.3 Beyond-Species-Typical Approach

As the name suggests, this approach counts as enhancements only those interventions that take people beyond what is typical for the species. Whereas the normal functioning approach distinguishes between therapy and enhancement based on what explains the states being altered, the beyond-species-typical approach draws the distinction in purely statistical terms. Gyngell and Selgelid discuss some of the counterintuitive implications of this account. Female athletes taking testosterone would not normally count as using an enhancement on this view, since they are usually staying within species-typical levels. Male athletes who take testosterone *would* count as using an enhancement, since they are going beyond species-typical levels. They note that this problem could be avoided by building reference classes into the account: an intervention counts as an enhancement only if it takes the person beyond what is typical for people of their sex and/or age. Yet, as they also note, it seems arbitrary to build reference classes based only on sex and age, given that many other factors influence our traits (Gyngell and Selgelid 2016, p. 115).

The problem of reference classes also arises within accounts of disability. In his exploration of the connections between disability and transness, Alexandre Baril notes that, in a cis man, the absence of or inability to use the penis would be understood as a disability. The same is not true of trans men, since they are taken by many people to be really women. Furthermore, in cis people, hormone deficiencies are understood as disabilities or health conditions, yet trans people, many of whom must take hormones for the rest of their lives, are not considered disabled because of it (Baril 2015a). Baril's point highlights that what counts as a disability, and who counts as disabled, depends on whether sex and/or gender are built into the reference classes, and if so, how people are sexed or gendered.

Age, too, presents a problem when deciding what counts as disability, given that both young children and older people often have attributes that are understood as disabilities when they appear in other age groups. In part because of the imperfect correlations between old age and impairment, ageism and ableism are deeply intertwined (Overall 2006). At the other end of the spectrum, in defending their account of disability as marginalised functioning, Jenkins and Webster note that, as is true of disability, many social spaces have norms which assume people have physical capacities children lack. This does not make children disabled, on their view, since the assumption is that children will navigate these spaces under the supervision of an adult. Adults, then, function as a kind of assistive technology for children (Jenkins and Webster 2021).

1.4.4 Beyond-Species-Maximum Approach

This is an even narrower definition than the previous two, counting as enhancements only those interventions that take people beyond the maximum naturally possible for the species. This conception may seem less directly connected to disability than the others surveyed here, as the corresponding account of disability, the below minimal functioning account, seems unpromising as a conception of disability (Campbell and Wasserman 2020, p. 563). The account works better as an account of radical enhancement, rather than enhancement per se. Nicholas Agar defines radical enhancement as "the improvement of significant attributes and abilities to levels that *greatly exceed* what is currently possible for human beings" (Agar 2013, p. xi), and Nick Bostrom defines a posthuman capacity as "a general central capacity greatly exceeding the maximum attainable by any current human being without recourse to new technological means." (Bostrom 2013, p. 28).

This account defines radical enhancement, and distinguishes it from moderate enhancement, by its endpoint, or the states it produces. It does not depend on any particular account of disease or disability. But moderate and radical enhancement could also be distinguished based on the degree of the change, in which case the starting point and the endpoint would both matter. A helpful example that illustrates the difference between these two ways of drawing the distinction is the cognitive enhancement undergone by Charlie Gordon in Daniel Keyes's 1966 novel *Flowers for Algernon*. Charlie starts out with a cognitive disability, but he has an operation that causes his cognitive capacities to dramatically increase over a period of weeks (Keyes 2012). At what point has Charlie undergone radical enhancement? According to the beyond-species-maximum approach, Charlie has undergone radical enhancement only when his cognitive capacities have reached a level beyond what is naturally possible for humans. But Charlie has undergone a drastic change long before that point. If enhancement becomes radical when it is a large enough change, then Charlie might be radically enhanced even when he is still within the range of what is naturally possible for humans. Agar endorses moderate enhancement but rejects radical enhancement, and as already noted, he defines radical enhancement according to the beyond-species-maximum approach. This would suggest that, on Agar's view, Charlie should want the capacity increase to continue until he has reached the top of the range of what is possible for humans, or slightly above that point. Yet Agar does not argue that the posthuman or radically enhanced state is a bad state to be in. His arguments against radical enhancement are best interpreted as concerns about the nature or degree of the change; it's not necessarily bad to be a posthuman, but it would be bad for beings like us to turn ourselves into posthumans. This might suggest that Agar should be concerned about the degree of change Charlie has undergone even before he has reached the species maximum, unless, perhaps, the degree of change undergone in radical enhancement is so great that the starting point becomes insignificant. I return to Charlie, and to Agar's critique of radical enhancement, in chapter 7.

1.4.5 The Welfarist Conception

This account, developed most fully by Savulescu, Sandberg and Kahane (2011), understands enhancements as interventions into biology or psychology that increase well-being. Kahane and Savulescu (2009) have developed a corresponding welfarist account of disability, according to which disabilities are biological or psychological properties that decrease well-being. [8] The welfarist account does not respect the distinction between treatment and enhancement; anything we might normally understand as a therapeutic intervention will count as an enhancement, so long as it increases well-being (Gyngell and Selgelid 2016, p. 117). The welfarist conception does, however, like the normal functioning approach, put disability and enhancement on a continuum where enhancements take people further from disability. In fact, the removal of a welfarist disability will always count as a welfarist enhancement.

This raises the question of which traits and capacities tend to promote well-being. As already discussed, this is an important question within the philosophy of disability, and parallel debates can occasionally be found in the enhancement literature. Savulescu (2001) argues that intelligence is likely to increase well-being on any of three major accounts. In response, Carter and Gordon (2013) argue that intelligence has negative as well as positive effects on well-being. The argument by Carter and Gordon resembles arguments in support of the mere-difference view of disability. Barnes develops what she calls the value-neutral model of disability, according to which disability is neutral overall with respect to well-being, but has both good and bad aspects. Barnes is discussing physical disability, but if Carter and Gordon are correct, a similar argument might extend to cognitive disability.

1.4.6 The Modified Welfarist Conception

Whereas the welfarist conception, in its original form, does not respect the distinction between therapy and enhancement, this modified conception adds to it the concept of normal functioning. A disease, on this view, would be abnormal functioning that reduces well-being, whereas an enhanced state would be abnormal biological functioning that increases well-being (Gyngell and Selgelid 2016, p. 117-118). This conception relies on two ideas about disability, that, as already discussed, have often been challenged: that it is abnormal functioning and that it reduces well-being. This account of enhancement, then, could be understood as the direct opposite of our folk concept of disability. Since I have already explored these ideas in my discussion of the normal functioning approach and the welfarist account, I will not analyse them any further here.

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[8] Harris (2007) endorses a very similar, although perhaps not identical, account of disability and enhancement.

1.4.7 The Functional Approach

This approach conceives of enhancement processes as interventions that increase some capacity. More broadly, it can be understood as also including interventions that add entirely new capacities. The corresponding idea about disability would be that it involves lacking or having relatively less of a capacity. Such an account needn't understand disability solely as an individual or medical matter; exactly what counts as disability might depend partly on social and/or other contextual factors. I will endorse a version of this approach in chapter 5. A key advantage of the approach is that it needn't entail any specific normative commitments. While one may think it is preferable to have more capacities, that assumption is not built into the account. It is entirely consistent to think that disability is, at least in part, a matter of lacking or having relatively less of certain capacities, while also holding that it is not bad to be disabled. Likewise, one could hold that enhancements increase capacities, but that these capacity increases are not always beneficial.

1.5 Biases and Epistemic Limitations

To illustrate how thinking about disability and enhancement in parallel can help us avoid biases, I begin with the reversal test developed by Nick Bostrom and Toby Ord. Bostrom and Ord (2006) suggest that much opposition to cognitive enhancement is driven by status quo bias, i.e. "an inappropriate (irrational) preference for an option because it preserves the status quo." (ibid, p. 658). Their reversal test is a heuristic to test consequentialist objections to cognitive enhancement. Suppose a method of genetic engineering has been developed that can safely increase a cognitive capacity such as abstract reasoning. Suppose you think using this new technology would have net bad consequences. To test for status quo bias, imagine using the same technology to safely *decrease* that capacity. Would that also have net bad consequences? If so, i.e. if a change in either direction would be bad overall, it would suggest that current levels of the capacity are optimal. The burden of proof is then on the defender of the status quo to justify this claim. [9]

As Nebel (2015) argues, not all preferences for the status quo are inappropriate or irrational. It may be that a change such as the introduction of cognitive enhancements will have risks or transition costs that outweigh the benefits. Bostrom and Ord do discuss these possibilities, and even develop an alternative version of the reversal test that takes

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[9] An alternative reversal test is provided in Sparrow (2015).

transition costs into account. They suggest that such costs and risks are unlikely to outweigh the benefits, and that cognitive enhancements can actually reduce certain kinds of risks. However, as Clarke (2016) argues, whether one finds these arguments persuasive is likely to depend on one's prior views about enhancement. But even if Clarke is right to suggest that the burden of proof on defenders of the status quo is less demanding than Bostrom and Ord take it to be, the reversal test is still useful as a way of checking for *irrational* status quo bias. It can help us to identify whether an option is preferred because it is the status quo, and if it is, we can go on to ask whether our justifications for preferring the status quo are reasonable in this instance.

Bostrom and Ord do not mention disability in their paper. Yet insofar as disabilities are the inverse of the states enhancements seek to create, the reversal test already uses disability as a lens for understanding enhancement. It can easily be restated so as to more explicitly incorporate disability. Suppose you think enhancing a cognitive capacity would have net bad consequences. Would the use of a procedure that produces the analogous cognitive disability also have net bad consequences? The reversal test, in this form, uses disability as a lens for assessing views of enhancement, but a similar test can also work in the opposite direction, i.e. using enhancement as a lens for assessing views of disability. If you think any given disability is bad and ought to be prevented or eliminated, would it be beneficial to enhance the relevant capacity to levels beyond the norm? [10] In chapter 2, I will draw on Bostrom and Ord's ideas to argue that it is generally inconsistent to hold that disabilities and unenhanced states are undesirable.

Status quo bias, which the reversal test is designed to detect, is closely related to adaptive preferences. This phenomenon can be illustrated by the fable about a fox who was trying to get a bunch of grapes from a tree. The grapes were too high, and the fox couldn't reach them, so he decided he didn't really want them anyway; grapes are too sour for foxes. When we prefer an option because it preserves the status quo, it may be that we are adapting to our current circumstances, in much the same way as the fox. Our situation

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[10] This is not really a reversal test. The reversal test asks: "If we shouldn't increase a parameter, should we reverse the direction and decrease it instead?" The test I have just proposed asks: "If we should increase a parameter up to a certain point, should we continue to increase it beyond that point?" Both of these tests are, however, based on the thought that the current value of a parameter, in this case, what we take to be normal levels of human capacities, are probably not at a local optimum. I will develop this idea more fully in the next chapter.

can't be changed, or we don't think it can, so we convince ourselves that bad circumstances are actually good for us. Some transhumanists have argued that this is what is happening when people claim to have accepted their own mortality. Bostrom (2005b) argues for this by way of a fable in which a dragon, representing death, demands a sacrifice of ten thousand people every evening. The people in the world of the fable get used to the presence of the dragon and resist efforts to kill it. Bostrom likens this to the way that many people resist efforts to slow or reverse aging so as to lengthen the human lifespan. The view that acceptance of death is sour grapes-style adaptation is also expressed by Eliezer Yudkowsky in his work of fan fiction *Harry Potter and the Methods of Rationality*. In one scene from this alternative version of the story, Harry explains to Dumbledore:

> If people were hit on the heads with truncheons once a month, and no one could do anything about it, pretty soon there'd be all sorts of philosophers, … who found all sorts of amazing benefits to being hit on the head with a truncheon once a month. Like, it makes you tougher, or it makes you happier on the days when you're not getting hit with a truncheon. But if you went up to someone who wasn't getting hit, and you asked them if they wanted to start, in exchange for those amazing benefits, they'd say no. And if you didn't have to die, if you came from somewhere that no one had ever even heard of death, and I suggested to you that it would be an amazing wonderful great idea for people to get wrinkled and old and eventually cease to exist, why, you'd have me hauled right off to a lunatic asylum! So why would anyone possibly think any thought so silly as that death is a good thing? [11]

Adaptation of this sort does occur, and the "deathist" preferences just described may well be an example of it, but we need to be careful about explaining away people's preferences in this way. Some disabled people claim, contrary to what most (non-disabled) people would unreflectively assume, that their disability has not made their life go worse. People without disabilities often rate the quality of life with a disability as being much lower than do disabled people. [12] It might be tempting to explain away this discrepancy in the same way that Yudkowsky explains away preferences for mortality. Surely, it might be argued, being disabled is a bit like getting hit over the head once a month. People invent reasons

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[11] Yudkowsky (2015) ch. 39). The chapter quoted here is available at http://www.hpmor.com/chapter/39

[12] For empirical work on this see, for example, Albrecht and Devlieger (1999) and Ubel et al. (2005)

why being disabled is not such a bad thing, and actually comes with benefits, but that's because people adapt to things they can't change. If you could travel to a world where nobody had ever been disabled, and you asked people there if they wanted to become disabled and gain those benefits, they'd say no.

Some philosophers do, indeed, argue that people who say they either like or don't mind being disabled are making a mistake. [13] Elizabeth Barnes explains the dangers in this way of reasoning about disability. She argues that the majority's intuitions about discriminated against minorities should not be trusted. Just as we now no longer believe things that once seemed obvious about women, racial minorities or gay people, we should be suspicious of intuitions that disability lowers well-being, and should not assume, by default, that it does. The testimony of disabled people who say they are happy with their disability should not be explained away without a very good reason for doing so (Barnes 2016 pp. 72-73) She goes on to argue that various ways of dismissing disabled people's testimony, including the adaptive preference model, are forms of testimonial injustice. [14]We have identity prejudices; disabled people are stereotyped as tragic or unfortunate. When a disabled person makes claims that contradict these prejudices: they are happy, and not merely in spite of being disabled, or even that they value their disability, their testimony is dismissed as irrational or mistaken and the prejudices remain intact (Barnes 2016, ch. 4). [15]

So far, I have discussed two kinds of bias or irrationality: firstly, our tendency to adapt to suboptimal circumstances because they are the status quo, and secondly, our tendency to dismiss the testimony of marginalised groups, including disabled people, when accepting that testimony would clash with our prejudices about those groups. Given that the preferences of happily disabled people are sometimes thought to be instances of irrational adaptation, and charges of adaptive preferences directed at disabled people are sometimes

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[13] See, e.g. Brock (2005) and Harman (2009). Note, though, that Harman's justification for thinking happily disabled people are making a mistake is not based on adaptive preferences.

[14] This is one of the two forms of testimonial injustice recognised by Fricker (2007).

[15] It's also worth noting that there's a significant amount of empirical work on implicit biases against marginalised groups. For a discussion of that research and its epistemological implications, see Saul (2013). These biases might be another factor contributing to people's tendency to dismiss disabled people's testimony. However, in recent years, many studies of implicit bias have failed to replicate. A detailed analysis of whether, or to what extent, the replication crisis undermines any philosophical conclusions that might be drawn based on this empirical literature would take me too far from the subject under discussion here, so I will not discuss implicit bias any further.

thought to be instances of testimonial injustice, it might seem difficult to recognise that we may be vulnerable to both kinds of bias when thinking about these issues. Yet we do sometimes adapt to the status quo when we would be better off if we made a change, and we do have identity prejudices that prevent us from listening to testimony we ought to be taking seriously. So how can we reconcile these two ideas? I will not develop a detailed theory of adaptive preferences here, but I'm inclined to think that whether a preference should count as adaptive, in the value-laden sense, has something to do with whether it is consistent with the person's other preferences. [16] To decide whether a preference is adaptive, then, we need to check for inconsistencies, and for arbitrary double standards.

One might also be inclined to be skeptical of some preferences regarding disability or enhancement because we don't know what it's like to have traits we do not in fact have. For some people, this may be another reason to dismiss disability-positive testimony: disabled people, or at least some disabled people, don't know what it's like to be non-disabled, so they're not in a good position to make the comparison. There's some truth to this, given that nobody knows exactly what it would be like to be someone else, or to be in significantly different circumstances. A congenitally disabled person does not know exactly what it would be like to not be disabled. Becoming non-disabled would be a transformative experience: it's the sort of change that gives you new information about what an experience is like, but also transforms what it's like to be you, perhaps altering your preferences in the process (Paul 2014). This presents a significant challenge for a disabled person evaluating whether it would be good for them to become non-disabled. However, all of this is also true of non-disabled people attempting to imagine what it would be like to be disabled. Becoming disabled, like becoming non-disabled, is a transformative experience. If disabled people are not in a good position to make the comparison, then neither are non-disabled people. In this respect, then, the epistemic position of disabled people is no worse than that of non-disabled people.

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[16] Views of this sort are defended in Bovens (1992) Bruckner (2009) and Barnes (2016, ch. 4). Note, however, that although all of these views characterise adaptive preferences in terms of inconsistency, this rough characterisation does not capture all of the nuances of or differences between these theories. On Barnes's view, for instance, a preference can count as adaptive if the person's reports of satisfaction are inconsistent with other pieces of evidence from her life, and so it is not only the person's other preferences that should be taken into account when judging whether a preference is adaptive.

It may even be that disabled people are in a better position to make these judgements. Tremain provides two arguments for this. The first argument is based on John Stuart Mill's contention that the best judges of the quality of pleasures are those who have experienced both sides of the question. People who become disabled later in life have experienced life both with and without a disability, and so they know both sides of the question, whereas people who have never been disabled do not. Secondly, taking feminist standpoint epistemology seriously should lead us to conclude that disabled people, whether their disabilities are congenital or acquired, are in a better epistemic position since they must develop an understanding of the circumstances and characteristics of the people to whom they are socially subordinated (Tremain 2017, pp. 172-173).

I want to suggest, then, that in addition to checking for inconsistency, we should assess claims about whether disabilities or enhanced states tend to be good, bad or neutral based on who is most likely to be in a good epistemic position. This might include, as Tremain suggests, those who have experienced both of the states being compared, and those whose social position gives them an epistemic advantage. For these reasons, in assessing whether it's bad to be disabled, considerable weight should be given to the preferences of disabled people. That doesn't mean such preferences should be accepted uncritically; disabled people are prone to the same forms of human irrationality as are non-disabled people, so some preferences for disability probably are adaptive, even if we shouldn't automatically assume they always are. But disabled people are in no worse an epistemic position, and are probably in a better epistemic position, to compare disability with non-disability.

Bostrom illustrates how both kinds of consideration can be used to argue that preferences against life extension are mistaken. Firstly, he argues that, just as people who are paraplegic are in a better position to know whether life with paraplegia is worth living, and typically judge that it is, older people are in a better position to know whether their lives are worth extending, and typically judge that they are. Secondly, he cites evidence that people's judgements about whether they would prefer to extend their lifespan depends on irrelevant features of the way the scenario is framed, thus giving us reason to think preferences against life extension are inconsistent. (Bostrom 2013, pp. 33-35).

From this discussion about bias, we can already see that preferences for mortality might be different from preferences for disability. When the non-disabled majority dismiss the preferences of happily disabled people, they are judging that the testimony of a marginalised group is systematically mistaken. It’s not impossible that this is the case, and if some inconsistency or arbitrary double standard can be found in the preferences of people who want to remain disabled, that would provide good evidence that such people are making a mistake. But as already discussed, such judgements by the non-disabled majority are themselves likely to stem from ableist biases, and disabled people are probably in a better epistemic position to compare disability with non-disability. If we judge that preferences for mortality are adaptive in the value-laden sense, it’s less obvious that we are dismissing the testimony of a marginalised or otherwise expert group. One might argue that the pursuit of longevity has its basis in stigma, and this is one aspect of Hall’s critique of transhumanism: “to those who would seek immortality, like transhumanists, stigmatized persons could represent a particularly painful reminder” of the inevitability of death (Hall 2016, p. 54). Some disabled people have medical conditions that shorten their lifespans, and this aspect of the disability may be stigmatised. But an opposing perspective comes into view when we consider how disability is sometimes represented as something that makes life not worth living. Alison Kafer comments on queer theory texts that critique the pursuit of longevity under any circumstances. She argues that while this critique does, in some respects, accord with disability perspectives, some disabled people do want to go on living “under any circumstances”, or, more precisely, they want to continue living even in circumstances that are thought by many non-disabled people to be worse than death. (Kafer 2013, pp. 40-42). There’s a case to be made, then, that listening to the testimony of relevant experts and marginalised people, including disabled and older people, will teach us that longevity is valuable under a wider range of circumstances than many people realise.

An awareness of these biases, then, can help us to assess the value of different types of disability or enhancement. Nevertheless, our inability to know what it’s like to have different characteristics and circumstances than our own remains a significant difficulty when making these judgements, and I don’t claim to have anything close to a complete solution. I do, however, want to end this section by noting one small way in which assessing the value of disability in light of enhancement might make it a little easier for some people to imagine what it would be like to have different traits. People tend to be risk seeking in the domain of losses but risk averse in the domain of gains, and whether an outcome is perceived as a loss or a gain can be manipulated by the way it is framed (Kahneman and Tversky 1984). If you have some particular ability and you are imagining what it would be like not to have it, if, for example, you are not deaf but you are asking yourself if you would want a cure if you were, you are probably framing the disability as a loss, and you might imagine that you would be willing to take risks to have the disability removed. Yet for those who do have the disability, particularly for people who have been disabled since birth, being disabled is the status quo, and so having the disability removed might seem more like a gain than the restoration of a loss. [17] If you are not disabled, or if you are thinking about a disability you do not have, that risk-aversion might become more understandable to you if you imagine enhancing a capacity, rather than asking yourself if you would want a cure if you did have the disability. If, for example, you are imagining what it would be like to have an extra sense, you are probably framing it as a gain, and it may seem less worth taking a risk to get it.

Although not all preferences for the status quo are irrational, we shouldn’t allow our own personal status quo to have too large an influence on our judgements about which traits and interventions are good for people in general. In the ways just described, assessing perspectives on disability and enhancement in light of one another can make it easier to avoid this mistake.

1.6 Conclusion

This chapter described and began to illustrate how evaluating perspectives on disability and enhancement in tandem can improve our understanding of the value, ethics, epistemology, and concepts of these phenomena. The remaining chapters of this thesis will further illustrate these benefits by applying the methodological points just made to the evaluation of the different possible positions on disability and enhancement.

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[17] Of course, not all disabled people would think of disability-removing processes as a gain. For some people, they might be a neutral change or even a loss. My point is simply that, even for those who do think that having their disability removed would be good for them, it won’t always seem as essential or necessary is it would for a non-disabled person trying to imagine what it would be like to be disabled.

Chapter 2: Against The Normal Functioning View

2.1 Introduction

This chapter begins the part of my project that investigates which views on disability are consistent with which views on enhancement. The focus of the chapter is the idea that disabilities and enhancements are both undesirable. Disabilities and disorders, on this view, should be prevented or eliminated wherever possible, but we should not enhance our traits beyond that. This view must be able to make a conceptually robust and morally significant distinction between treatments and enhancement processes. Often, this is based in a conception of normal functioning: disability states fall below normal functioning, enhancement technologies take their users above normal, or at least aim to improve upon states that are already in the normal range, and both of these departures from normality are undesirable. The reason might be that there is something good about what is natural (Fukuyama 2002; Kass 2003; Sandel 2004). As I will discuss later in this chapter, other arguments for this position appeal to egalitarian concerns (Daniels 2000).

Ideas of naturalness and normality can be challenged in at least two ways. Firstly, one might challenge the scientific basis for classifying some traits but not others as normal, as does Amundson (2000). I will not pursue this line of argument here; even if, contra Amundson, we can scientifically determine what counts as normal functioning, this does not show that the concept holds any normative significance. The second kind of critique, then, and the one that I will pursue, is that normal functioning does not provide an adequate normative basis for deciding which traits should be valued, and which ones ought to be changed. In other words, defenders of normal functioning need to be able to explain why we should value it.

My critique in this chapter is primarily about consistency; I am arguing that a bad-difference view of disability cannot easily be held alongside opposition to enhancement. The arguments in this chapter do not, by themselves, show that we ought to endorse enhancement, or reject the BDV. There are other arguments against enhancement, discussed in chapter 3, and other arguments for the BDV, discussed in chapter 6. Yet this critique does, if successful, show that certain sorts of arguments against enhancement, or for the BDV, should be rejected. We should not argue against enhancement, or for removing disability, on the basis that we should keep people as close as possible to normal functioning.

In the next section, I outline a challenge to the distinctions between disability-removing processes and enhancement processes, and between disabilities and unenhanced traits, upon which the normal functioning view depends. Each of the subsequent sections then examines a possible justification for maintaining the normal functioning view: traits in the normal range are optimal, we should retain normal functioning because we should preserve the status quo, keeping people as close as possible to normal promotes equality of opportunity, and the value of normal functioning is justified by the benefits of statistical typicality. I argue that these reasons do not succeed in justifying the normal functioning view. While there is a limited case for the desirability of being statistically typical, it is unlikely that this is the primary reason why we value our traits and capacities. It is thus difficult to maintain that both disability and enhancement are undesirable.

2.2 The Key Challenge for Normal Functioning

To justify the normal functioning view, and the distinctions on which it depends, we will need arguments for the badness of disability that don't work equally well as arguments for the badness of unenhanced traits. We will also need arguments for the undesirability of enhancement processes that don't work equally well as arguments for the undesirability of treating disability. Such arguments will be hard to find.

Suppose you think enhancement technologies should not be used because unenhanced traits are valuable in some way. Perhaps there is value in the difficulties and obstacles they create and removing them would allow easy shortcuts which compromise the worth of our achievements. Perhaps using enhancement technologies would be inauthentic. If arguments like these succeed against enhancement, why don't they also apply to disability? If a disabled person removes their disability, why don't their subsequent achievements become less valuable? If a person acquires a disability, why doesn't the value of their achievements increase? [18] Why isn't treating disability inauthentic? In short, why don't arguments for the

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[18] It might be argued that we do sometimes place greater value on the achievements of disabled people, and this can be seen in the tendency to treat disabled people’s ability to accomplish ordinary, everyday tasks as inspirational. I will discuss this phenomenon, sometimes known as ‘inspiration porn’, in chapter 6. For the purposes of the argument I am making in this chapter, it suffices to note that, although the value of unenhanced

value of unenhanced traits show that disabilities are also valuable? The proponent of normal functioning will need adequate answers to these questions.

Now consider arguments for the badness of disability, and arguments against disability-positive views, such as claims that people who say they are happy being disabled are making a mistake. Perhaps such people have adapted their preferences to a bad situation. If so, perhaps opposition to enhancement also stems from adaptive preferences. In both cases, some options are unavailable, or at least perceived as such, and so the person finds that they didn't really want it anyway. Similarly, perhaps some people value their disabilities because they don't know what they're missing, but those whose capacities remain unenhanced also don't know what they're missing. If the testimony of people who say they are happy being disabled can be explained away by ignorance or desires that are in some way problematic, then we ought to at least be open to the possibility that some opposition to enhancement can be similarly explained away. Thus, arguments such as these cannot be used by the proponent of normal functioning without some further argument for thinking that reasoning about disability does not apply to unenhanced traits, and that reasoning about enhancement processes does not apply to disability-removing processes. [19]

2.3 Is Normal Functioning Optimal?

As Bostrom and Ord (2006) suggest, one could respond to a challenge of this sort by arguing that capacities and traits in the normal range are optimal. [20] Having more of a given capacity is better up to a certain point, after which it ceases to be beneficial, and perhaps even becomes detrimental. It is certainly possible that having more capacities is better, but only until an upper limit is reached. However, an argument for normal functioning would need to establish more than just this general point. It would also need to show that the point at which more ceases to be beneficial is within the normal range. There

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achievement is sometimes taken as a reason why we shouldn't use enhancement processes, those who treat disabled people as inspirational don't usually take this as a reason why disabilities shouldn't be removed.

[19] Because of the distinction between traits and processes discussed in the introduction, one could hold that disabilities are bad for the disabled person, but that traits and capacities should not be enhanced, and disabilities should not be removed. The costs and risks, to the individual or to society, might outweigh the benefits of altering the trait. It would be inconsistent, however, to hold that disabilities are bad for the person who has them, but unenhanced traits are not, or that disabilities should be removed but normal human capacities and traits should not be enhanced.

[20] Or rather, are at a local optimum.

may well be particular capacities for which being in the normal range is about optimal, and arguments would need to be made with respect to those individual capacities. However, it would be a coincidence if capacities in the normal range were always or mostly optimal, unless there is a general principle that can explain why they would be. That explanation might be evolutionary: if the traits and capacities we have are suboptimal, why did we evolve with them? This challenge, however, can usually be easily overcome. We do not live in the environment in which we evolved, and what was optimal in our evolutionary environment is not necessarily optimal in modern environments. Furthermore, what evolution selects for does not necessarily coincide with what we value. [21]

2.4 Should we Value Normal Functioning if we Value the Status Quo?

I have been drawing on Bostrom and Ord's argument that opposition to enhancement often has its basis in status quo bias. The response discussed in the previous section, that traits in the normal range are optimal, is a way of arguing that we have reasons to value normal functioning that don't depend on its being the status quo. Another kind of response would suggest that preferences for the status quo needn't be irrational (Nebel 2015). Suppose that this is correct. If we have reason to value the status quo, does that provide a reason to value normal functioning? In this section, I argue that it does not.

Even if there is a good reason to preserve the status quo, or what is natural, it does not follow that there is a morally significant distinction between treatment of disorder or disability and enhancement. The status quo is that some people have disabilities, and most people have diseases at some time in their lives. If we should preserve the status quo, then we should preserve disability. [22] There can be good reasons to preserve one's own personal status quo, so a person with no disabilities might be justified in preferring not to become disabled, but also not wanting to enhance their capacities, but reasons to preserve society's status quo do not provide reasons to try to eliminate disability.

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[21] Bostrom and Sandberg (2009b) suggest this evolutionary challenge as a reason for caution about enhancement, as well as some ways in which the proponent of enhancement can overcome it. However, see Powell and Buchanan (2011) for an argument that even this evolutionary challenge does not provide a reason against enhancement.

[22] See Garland-Thomson (2012) for several arguments for conserving disability.

It might be objected that reasons to preserve the societal status quo do suggest that we should remove disabilities, but should not use new or emerging enhancement technologies, because we understand the consequences of not being disabled, but do not understand the consequences of having enhanced traits. We understand the benefits (And harms, if there are any) of being non-disabled, or of having non-disabled people in the world. Enhancement technologies are new, emerging or as yet hypothetical, so we don't understand the benefits and harms of being enhanced, or of having enhanced people in the world. According to this objection, it's better to play it safe and forego the development and use of enhancement technologies, but the injunction to play it safe does not require or recommend that we forego disability-removing processes. This argument only succeeds, assuming it succeeds at all, in cases where enhancement processes create traits or levels of capacity never before had by humans. It does not work in cases where the enhancement process in question results in traits and capacities that are above average, but already had by some people. Widespread use of such interventions would change the distribution of traits in the population, and it might be thought that this change could have unforeseen and unintended negative consequences. But widespread removal of disability would also change the distribution of traits in the population, so by the same reasoning it, too, might have unforeseen and unintended negative consequences. In short, if this argument succeeds, it succeeds only for radical enhancement, but not for moderate enhancement. The consequences of radical enhancement are indeed more uncertain, in that we probably don't fully understand what benefits we might be missing out on if we don't radically enhance, but we also probably don't fully understand the potential downsides or the ways it might be disappointing. I will explore how we should respond to this uncertainty in chapter 7. For now, I'll simply note that radical enhancements are not an entirely discrete category; the radicalness of an enhancement is a matter of degree. The more radical the enhancement, the more uncertain the consequences. This suggests that, if we are concerned by the uncertainty, we might be able to reduce it by taking a gradual approach to radical enhancement rather than foregoing it entirely. I will elaborate on this idea in chapter 7.

Another potential objection is that only some aspects of the status quo should be preserved, but not all. This argument would need to explain why unenhanced traits should be preserved, but not disabilities. The distinction between treatment and enhancement processes would no longer provide a reason to preserve the status quo; instead, it would provide a criterion for deciding which aspects of the status quo should be preserved, but there would need to be a further reason for making that distinction and using it as a criterion. In short, this argument would undermine the rationale of the distinction.

A third objection is that the status quo is to treat disorders and disabilities, but not to enhance, so deciding to preserve disability would be a significant alteration to social attitudes. Making this argument would amount to saying that the status quo is to make changes; in this instance, to change the bodies of disabled people; in other words, the status quo is to not preserve the status quo. The proponent of enhancement could make the same argumentative move: the status quo is that humans invent new tools and technologies and find ways to improve themselves and increase their capacities, and so refraining from enhancement would actually represent a significant change to our social practices. It may even be that, as Allen Buchanan suggests, enhancements may be necessary to preserve and protect valuable parts of the status quo (Buchanan 2011, ch. 4).

Even if we should value the status quo, then, this does not provide a justification for the treatment/enhancement distinction. In the next section, I turn to egalitarian justifications of it.

2.5 Egalitarian Justifications of the Treatment/Enhancement Distinction

One might think the treatment/enhancement distinction is justified not because naturalness or normality has any intrinsic value, but because treatments tend to promote equality whereas enhancements tend to exacerbate inequality. According to this way of thinking, treatments level up those who are worst off in the relevant respect, whereas enhancements improve the position of those who are already well off, or at least average, with respect to the capacity being enhanced.

In arguing for his theory of just healthcare, Norman Daniels provides a limited defence of the treatment/enhancement distinction (Daniels 2000). According to his view, a just healthcare system is obligated to treat diseases and disabilities, defined as adverse departures from normal or species-typical functioning, but in general, is not obligated to provide enhancements. [23] Keeping people as close as possible to normal functioning protects an individual's fair share of the range of opportunities a reasonable person would choose in a given society, defined with reference to the person's talents and skills (Daniels 2000, p. 315). The treatment/enhancement distinction does not exactly coincide with the boundary between permissible and impermissible, or obligatory and non-obligatory interventions, but has a useful, if modest, role to play. Firstly, if resources are insufficient to cover all treatments, it will be necessary to prioritise. Secondly, equality requires us to provide some medical interventions that are not treatments of disease; Daniels suggests, as an example, that, to respect the equality of women, abortions should be provided (ibid, pp. 313-314).

Given egalitarian aims, is normal functioning the right standard to use? Daniels does not argue that naturalness has any special metaphysical significance. Instead, he appeals to normal functioning because, he says, what counts as a disorder is relatively uncontroversial, and normality is a point of public convergence, a standard most people can agree upon (ibid, p. 318). His defence of the distinction, then, turns on the view that, while it is relatively easy to make value-free judgements about what counts as a disorder, it is harder to determine which enhancements are beneficial.

in some cases, however, there *is* controversy about what counts as a disorder. Many autistic people, for instance, would not consider autism a disorder. More generally, as I have already discussed, and as will be discussed in greater depth in subsequent chapters, many disabled people do not think of their disabilities as conditions that need to be cured. It should not be assumed, without argument, that these views are wrong and common sense is right. It might be argued that such views are held by a minority, so there is still public convergence, even if not unanimous agreement. But before concluding that the judgements of the majority are correct, we should consider the epistemic position from which these judgements are made. Recall from the previous chapter the arguments by Barnes and Tremain that dismissing disabled people's reports of high quality of life can be an epistemic injustice, and that disabled people may even be in a better epistemic position than are non-disabled people to compare life with and without a disability. At a minimum,

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[23] In defining disease as departure from species-typical functioning, Daniels is drawing on work by Christopher Boorse (see Boorse 1975 and Boorse 1977). However, it is Daniels who draws normative conclusions from this. On Boorse’s view, the classification of a characteristic as a disease is value-free.

we should be very careful about judging that the majority's judgements are right and the disabled minority's judgements are wrong, since we risk committing an epistemic injustice. More than that, disabled people, and others whose characteristics are pathologised, may be in a better epistemic position to judge the value of these traits and whether they should be considered disorders.

Daniels acknowledges that we have sometimes been wrong about what counts as a disorder, since prejudice can intrude into our judgements, but these errors do not show that the notion of disorder is entirely value-laden. There are pressures, he suggests, that tend to reduce these errors (Daniels 2000, p. 319). I would suggest, however, that by using a treatment/enhancement distinction based on normal functioning to decide what our obligations are, we might be working against those pressures. If people must have a disorder to get access to the medical interventions they want or need, there is an incentive to label ever more characteristics as disorders. Even if there are scientific truths about which characteristics are disorders, a social policy like this one could make them harder to detect.

Disability often brings disadvantages but bringing people closer to normal is very often not the best way to promote equality. Anita Silvers, in a critique of earlier work by Daniels, explains this in terms of a distinction between mode of functioning and level of functioning. The mode of functioning is the method by which a function is accomplished. The most typical mode of functioning for reading a book is visually, using the printed text, but books can also be read tactilely, through Braille, or aurally, using an audiobook or by having the words read by a speech synthesiser. Silvers does not explicitly define level of functioning, but her examples seem to indicate that it is the standard to which a function is accomplished. In the case of reading, the level of functioning would be the person's reading speed and comprehension. A person could use an atypical mode of functioning, but still achieve a typical, or higher than typical, level of functioning (Silvers 1998, p. 101).

Silvers argues that, for Daniels, restoring normal *modes* of functioning takes precedence over restoring normal *levels* of functioning (ibid). Daniels justifies his use of normal functioning by arguing that being as close to normal as possible protects a reasonable range of opportunities for each person (Daniels 2000, p. 315). Yet Silvers provides historical examples to show that alternative modes of functioning can often provide higher levels of functioning, and better opportunities, than can normal modes. Deaf children who were taught to speak orally, and discouraged from signing, who were not taught to write until they could speak intelligibly, had reduced literacy as a result. Children whose mothers took thalidomide when pregnant were given prosthetic limbs which allowed them to walk, but slowly and painfully, rather than being offered alternative modes which would have increased their mobility, such as wheelchairs (Silvers 1998, pp. 113-114).

These arguments do not show that it's never appropriate to provide disability-removing processes. They do, however, cast doubt on the view, upon which Daniels's proposal depends, that whether an intervention promotes equality largely depends on whether it brings the person closer to normal functioning. The intervention that brings people closest to normal might, sometimes, happen to be the one that best promotes equality, but in many other cases, it is preferable to make environmental changes, and/or to provide assistive technology or training that enables the person to function in an alternative mode.

Even where interventions into biology are the most appropriate response to inequality, these will sometimes count as enhancement processes. Giubilini and Minerva (2019) argue that egalitarians should embrace enhancement, at least for disadvantaged people. Inequality, they argue, stems from both social and biological factors, and social reform alone, without biological intervention, is unlikely to be sufficient to eliminate unfair inequality. Their specific proposal is that people from disadvantaged socioeconomic backgrounds should be given access to enhancements, while people from privileged socioeconomic backgrounds should be prohibited from using them. [24] While I don't endorse their specific proposal, I would agree that enhancement, as a supplement to social reform, can form part of a strategy to alleviate disadvantage.

The point can be made clearer when we consider how it applies more specifically to life extension. It might be thought obvious that a normal or sufficient range of opportunities requires a normal lifespan, and this is sometimes reflected in work on distributive justice. Martha Nussbaum includes on her list of capabilities to which all people are entitled "Being able to live to the end of a human life of normal length" (Nussbaum 2000, p. 78), and Roger Crisp asserts that "eighty years of high-quality life on this planet is enough, and plausibly more than enough, for any being." (Crisp 2003, p. 762). From this perspective,

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[24] See also Ray (2016) who argues that the use of stimulant drugs may be an appropriate way to remedy the disadvantages faced by some students, even if these disadvantages should be understood as social problems rather than medical pathologies.

dying of old age might appear to be, as journalist Mark O'Connell puts it, "The ultimate First World Problem" (O'Connell 2017, p. 218). Yet as Christine Overall argues in putting forward her feminist case for life extension, people have very different opportunities even across the same length of life. People from disadvantaged or marginalised groups, such as poor people, people of colour or disabled people, do not get a normal range of opportunities even in a long life. It cannot be assumed, therefore, that a life of 80 years or longer is already a full life. Allowing such people to prolong their lives may give them the chance to take up opportunities others take for granted. (Overall 2009, Overall 2011). Of course, simply extending lifespan is not enough, if over their lengthened lifespan the person continues to be disadvantaged. Life extension can promote equality only as a supplement to other societal changes, not as a replacement for them.

These considerations suggest that allowing people the opportunity to alter their biological traits may promote equality, even if the person has no identifiable disorder. Continuing on this theme, it might seem intuitive that we should provide such interventions to people with lower levels of important capacities, what might be thought of as a relative lack of talent in particular areas. Daniels, however, does not accept this. In his view, disorders should be treated, but generally talents should not be redistributed. In his discussion of prioritising treatments, he claims that dyslexia is a disability in any society, but it is important to treat it only in literate societies. (Daniels 2000, p. 315). Yet the example of dyslexia more plausibly shows the context-dependent nature of what counts as disability. In a hypothetical society where people's social and economic opportunities depend significantly on one's level of musical talent, people may write songs explaining that lack of musical talent would be a disorder in any society. It could certainly be argued that the people in the fictional world of musicians are erroneously allowing contingent features of society to influence judgements about what counts as a disorder, but Daniels, and those who share his view, might be making the same mistake. I am not necessarily arguing that talents should be redistributed. As Daniels says, inequality needs to be weighed up against other values, such as efficiency (Daniels 2000, p. 317). But arguing that a boundary must be set somewhere is not enough to justify the boundary being in any particular place. It is far from obvious, for example, that providing extra tutoring to someone whose mathematical difficulties are caused by a disorder would be more efficient than providing the tutoring to a person with the same difficulties but caused by lack of motivation (Bickenbach 2009). Efficiency, by itself, does not provide sufficient justification for either the treatment/enhancement distinction or for equalising the social, but not the biological, contributions to lack of talent (Holtug 2011).

I have argued that keeping people as close as possible to normal functioning is not the best way to promote equality, for three main reasons. Firstly, where a person has a disability, sometimes an intervention that takes them further from normal will more effectively give them access to opportunities than treating the condition. Secondly, providing enhancements to disadvantaged people can give them access to opportunities they would not otherwise have, which other people take for granted. Third, even granting that the scope of redistribution needs to be limited, it is not clear why the line should be drawn at lack of talent.

2.6 Statistical Typicality

Some readers may remain unconvinced of the possibility or practicality of promoting equality through enhancement or social accommodation. Some important opportunities can't be provided to disabled people by making social accommodations, and the benefits of enhancement are insufficient to outweigh egalitarian concerns. It really does matter that people's capacities are the same, and it matters more than people's absolute level of ability in any particular domain. The defender of this view might argue that human capacities are positional goods, i.e. individuals benefit from having more of it than others, but there would be no benefit in everybody having more. This would be true of sport: by taking performance enhancing drugs, an athlete increases their chance of winning, but if their competitors also enhance, their advantage is lost, and there is no collective advantage in the increase in performance. Height is also often taken as a paradigm case of a positional good, although the advantages of being tall are probably more the result of social attitudes than direct effects of one's height.

More generally, there are benefits to being statistically typical. On the human variation model, disability should be understood as a poor fit between person and environment. Consider, in this regard, Rosemarie Garland-Thomson's concept of a misfit (Garland-Thomson 2011). Disabled people's bodies do not fit into environments that are designed for the non-disabled majority. Garland-Thomson explains this lack of fit using the familiar metaphor of the square peg in a round hole. While Garland-Thomson states very clearly that it is the environment rather than disabled people's bodies that should change, some might argue that, if the environment is very difficult to change, it might be best to remove disability, bringing the person's traits in line with their environment. On this view, the badness of disability is explained (or partially explained) by contingent features of the environment. It might not be plausible to create an environment that works for everyone, so the lack of fit between disabled people and their environment arises (partially) because of disabled people's atypical embodiment.

One could also argue for the value of statistically typical traits by claiming that the primary benefit of having any given capacity is that it allows the person to participate in practices that most or many other people engage in. Since people often participate in games, art forms, and other activities that engage their capacities, lacking these capacities, and thus being unable to participate in these activities, results in the loss of social opportunities. The value of sensory and cognitive capacities, for instance, depends partially on what most people have. In a world where everybody was deaf, music would not exist. In a world where everybody was blind, visual art would not exist. Many games depend on cognitive capacities which not everyone has. Even if lacking access to these art forms, games, and other activities is not bad in and of itself, it might be bad to lack access to art forms or games that most people can access. These activities form a part of our social life, and so lacking access to them may be an obstacle to participating in the community. If much of what people talk about and do together depends on capacities you do not have, or have less of than is typical, your opportunities for social participation are diminished. To a large extent, this is the result of the ways in which the social world is organised without considering the abilities of all possible participants, and this sort of exclusion is very often unjust. Yet it is not wrong for people to use capacities that not everybody has and engage in social practices that depend on those capacities. It's not wrong for people to play music together simply because some people cannot access music, and so cannot as easily engage in this social practice. [25]

These arguments might show that it is bad to have capacities *below* the statistically typical level, but what about the idea that it's detrimental, or at least not beneficial, to have capacities *above* the statistically typical level? It seems unlikely that Garland-Thomson's misfit concept could straightforwardly apply to enhanced traits. This is because there is an

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[25] Actually, it’s not entirely accurate to say that deaf people cannot access music at all, since they can feel the vibrations produced by the sound. But hearing is nevertheless required to access much of what music has to offer.

asymmetry here: it would be easier for the enhanced person to operate in an environment that was not designed for their enhanced traits than for a disabled person to operate in an environment that was not designed for their disabilities. The enhanced person can always operate at a lower level of functioning than the maximum of which they are capable. A disabled person cannot use capacities they do not have, but a person whose capacities have been enhanced above typical levels needn't always make use of those capacities.

There may be disadvantages to having greater capacities than others. Having greater cognitive abilities than the people around you might be a lonely experience even if the abilities themselves are otherwise good. That might be a reason not to enhance if the people around you are unwilling or unable to do so, but it cannot be concluded from this that enhancement is, on balance, detrimental without considering whether it has benefits independent of its positional value.

If having statistically typical capacities is truly what matters, then the badness of the traits we currently think of as disabilities, or unenhanced traits, is contingent upon the distribution of traits in the population. To illustrate, imagine that, in a world made up entirely of deaf people, the people are debating whether their society should provide a new medical procedure that would give them hearing. If, in the actual world, people should not be provided with enhancement interventions, the inhabitants of the world of deaf people should not be given the hearing procedure. The proponent of normal functioning should also accept that the world of deaf people is not significantly worse than the actual world. They ought to think the value of hearing in the actual world depends only or primarily on the fact that most people can hear, and so hearing, in the world of deaf people, would have little to no value, and might even be detrimental. Similar considerations apply to scenarios where people have greater capacities than in the actual world. Consider a world where most people have significantly better memories than anyone in the actual world. A new treatment has just been developed to boost the memories of people like us, who are extremely forgetful by their standards. A proponent of normal functioning should welcome this development. If in the actual world, people should have access to disability-removing processes as a matter of justice, then the people in the scenario just described should have access to the memory treatment. [26]

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[26] Again, these thought experiments resemble the Bostrom and Ord (2006) reversal test. The difference is that, whereas Bostrom and Ord suggest that, if we think increasing a capacity will have bad consequences, we should ask whether it would be good to decrease

Thought experiments about hypothetical worlds with different distributions of traits are thus a useful tool for evaluating views on which disability and enhancement are both undesirable. It's consistent to hold that whether a capacity is beneficial for an individual, and whether justice requires us to provide it, depends on how that capacity is distributed within the population. Such a view simply claims that it is beneficial to be statistically typical. Those who hold that the badness of any given disability or enhanced trait remains constant across different worlds hold a view that is inconsistent, arbitrary, or accepts a double standard, unless a better reason can be found for thinking that the capacities we currently consider normal are optimal.

It's consistent, then, to hold that disability and enhancement are both undesirable because the relevant traits and capacities are valuable to people primarily because they are statistically typical. This would probably be the strongest justification for a normal functioning view. But is this claim about statistical typicality plausible? Undoubtedly there is some truth to it, as shown by the points already made about how our social practices depend on the capacities most people have. Yet it does not seem plausible that the most substantial benefits of our capacities stem from their statistical typicality. Practices that require, or greatly benefit from, the possession of specific capacities: music, visual art, sports, games that depend on specific cognitive abilities, are not valuable to people solely for the role they play in our social lives. These practices are often valued for their own sake. From the perspective of someone who values music, for instance, the people in a world where everybody is deaf are losing out on something valuable. Music, for many people, is valuable for its own sake, and not merely because it allows you to participate in social practices most people engage in. If the citizens of the world of deaf people began to acquire hearing, and then started making and listening to music, they would have gained something valuable, so the collective increase in capacity would not be entirely pointless. Likewise, it might be that, if we don't enhance, we will miss out on the valuable things we would gain from our increased capacities. For some people, even if not for everyone, the gains from those capacity increases may be quite substantial, and, as with the citizens of the world of deaf people, we might gain something significant from the collective increase in capacity. That doesn't definitively show that any given enhancement will be worthwhile, on balance, but it does cast significant doubt on the argument from statistical typicality.

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it, I am suggesting that we imagine increasing the capacity from a different starting point and/or in a context where the distribution of traits in the broader population is different.

Like the other arguments discussed in this chapter, then, this argument cannot easily justify the view that disability and enhancement are both undesirable.

2.7 Conclusion

The arguments in this chapter challenge the normative significance of the treatment/enhancement distinction. I have been arguing that various justifications for endorsing disability-removing processes but rejecting enhancement processes, or for taking disabilities to be bad for the person who has them but taking unenhanced traits to be neutral or good, do not succeed. We should thus reject the view that disabilities and enhancements are both undesirable. These normative arguments have implications for the concept of enhancement. In chapter 1, I described the not-medicine approach, which counts as enhancements only those interventions that do not treat a disorder. Insofar as disability-removing processes are taken as treatments for disorder, and thus a part of medicine, the arguments in this chapter cast significant doubt on the usefulness of the not-medicine approach. An enhancement concept that excludes disability-removing processes but includes otherwise similar interventions is unlikely to be a meaningful category. More generally, disability-removing processes should be treated in the same way as enhancement processes that do not remove disability. To the extent that we should endorse disability-removing processes, we should endorse enhancement processes. To the extent that we should be concerned about enhancement processes, we should be similarly concerned about disability-removing processes.

Chapter 3: Responding to the Disability Case Against Enhancement

3.1 Introduction

The arguments against enhancement examined in the previous chapter rely on a distinction between disability-removing processes and enhancement processes, or between disabilities and unenhanced traits. Showing that our normative views should not rely on such a distinction, however, does not show that all arguments against enhancement have been defeated. Perhaps enhancements are problematic, but so too are disability-removing processes. Considering the case against enhancement in its strongest form should therefore include engaging with arguments that do not rely on the treatment/enhancement distinction, or on dubious ideas of normal functioning. To that end, this chapter responds to criticism of enhancement from the perspective of disability justice. Some disability activists have criticised the practice of selecting against disabled embryos (Asch and Wasserman 2005) or, more broadly, the societal focus on disability cures (Clare 2017). Those who hold this view of disability needn't rely on a treatment/enhancement distinction in their criticism of enhancement.

A further reason why it is important to engage with these critiques is that, if some disability activists have concerns about enhancement, these concerns should be taken seriously, and, because ableist and other oppressive assumptions can be easy to miss, should not be dismissed without careful reflection. Whether these critiques are entirely successful or not, there are important lessons to learn from them.

Each section of this chapter responds to a disability-related objection to enhancement. An especially detailed critique of enhancement, especially of transhumanists, is presented by Melinda Hall, and I take her arguments to be representative of disability-related concerns about these ideas. Thus, Five of the six objections I discuss are drawn from Hall's work: that aiming to develop mind uploading and lifespan extension technologies devalues our vulnerability, rejecting and making an enemy of the disabled body; that the transhumanist emphasis on autonomy presupposes an atomistic conception of the self, thereby devaluing disabled people on the basis that dependence and interdependence are undesirable; that transhumanism denigrates people with cognitive disabilities; that it depoliticises the relationship between disability and well-being; and that the promotion of moral enhancement combined with the recommendation to use genetic selection implies that disabled people are dangerous and do not belong in optimistic visions of the future. Finally, I consider the idea that, even if enhancement is a good thing in the abstract, it will have net bad consequences within currently existing, oppressive social contexts.

In responding to these critiques, I am not primarily interested in evaluating whether particular arguments in the literature are ableist. Given the pervasiveness of ableism, and the close connections between disability and enhancement, it would be surprising if there were no ableism within transhumanist and other enhancement literature. Ableist arguments should of course be criticised wherever they are found, but where there is ableism in the arguments for a given position, it is worth asking whether the ableism is intrinsic to the view, or whether that element can be removed, keeping the core idea intact. My aim, then, will be to evaluate whether transhumanism, and other pro-enhancement views, are inherently ableist.

I will argue that the core commitments of transhumanists and other proponents of enhancement need not necessarily be in conflict with disability justice. That does not mean, of course, that there is no ableism within transhumanism, or no potential for enhancement to increase disability stigma. I suggest that the potential for ableism can be reduced by incorporating ideas developed within philosophy of disability and the disability rights movement, such as universal design, and taking seriously people's testimony about their quality of life.

3.2 Vulnerability

The first criticism I respond to is that the pursuit of enhancement involves a problematic attitude to vulnerability. Two types of enhancement, both advocated for by Nick Bostrom, will be especially relevant here. Firstly, the slowing or reversal of aging processes so as to delay death and extend lifespans as far as possible (Bostrom 2005b). Secondly, the more radical prospect of transferring a person's mind to a computer, often known as 'mind uploading'. (Bostrom 2005a, p. 7). The word 'vulnerability' has multiple meanings, and there are multiple senses in which we might think it desirable to accept or embrace it, not all of which are relevant to this discussion. We might, for instance, value emotional vulnerability, but I will not discuss that here because Hall is criticising transhumanists for their attitude to bodily vulnerability. It is also worth distinguishing between wanting to reduce vulnerability, on the one hand, and being in denial about it, on the other. It may be unwise, for instance, to ignore pain, or one's need for rest and sleep; treating one's body as invincible may actually lead to damage. We might also criticise social norms that treat our vulnerability as a taboo subject. Again, these senses of denying or avoiding vulnerability will not be relevant to the discussion.

Hall objects to transhumanism because it seeks to reduce, as far as possible, our bodily vulnerability to disease and death. This is because of what she takes it to imply about disabled people: according to her, the "enemy" of transhumanism is "the disabled body itself" (Hall 2013). By way of further explanation, she writes, "If the (traditionally, that is, unenhanced) abled body is figured as constraint and vulnerability to death, the (traditionally) disabled body likely symbolizes an even greater degree of unwanted constraint and vulnerability to death." (ibid). [27] Ladelle McWhorter echoes this objection when she says of transhumanist literature, "The body rejected in these texts is not merely a dependent body but a loser body—a slack body, a slow body, a body without the quick right answer, a penetrable body, a body riven by pain." [28] As Hall and McWhorter see it, then, the avoidance of vulnerability is a rejection of the disabled body, and presumably thus of disabled people. Hall contrasts this attitude with her own approach of "viewing human life as fundamentally vulnerable and interdependent in valuable ways" (Hall 2016, p. xxi)

It is certainly possible that some people have bad motives for using or desiring enhancement. Perhaps some people want to use enhancements simply because they want to avoid having a "loser body", out of disdain for what they perceive as the weakness of disabled people or other groups. But do enhancement practices necessarily express such an attitude? That seems unlikely, given how we so often treat our bodily vulnerability to disease and death as undesirable. Indeed, Hall treats it as such when she argues that bioethics literature on enhancement "*creates* and *directs* risk rather than identifying and mitigating it", and then lists examples of disabled people having difficulty accessing medical care (Hall 2020, p. 642). So, on the one hand, she criticises transhumanists for wanting to reduce vulnerability rather than treating it as valuable, yet on the other hand,

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[27] These quotes are from the section of the paper titled 'Vile Sovereigns of Bioethical Debate'

[28] Commentary by Ladelle McWhorter in Tremain et al. (2019)

she rightly criticises practices that leave disabled people "vulnerable to medical negligence and even death" (ibid, p. 642). Note that she is not merely arguing that transhumanists have failed by their own lights, in that they aim to decrease risk and vulnerability but have actually increased it, although that does seem to be part of her argument. She takes the ways in which disabled people are subjected to additional risk of disease and death to be unjust, as they of course are.

What, then, makes the kinds of risk and vulnerability that disabled people are subjected to through bioethics discourse, or society in general, different to the kinds of risk and vulnerability Bostrom seeks to overcome? Hall says very little about how she makes that distinction, but I will consider three possible differences.

Firstly, Hall argues that the risks associated with disability are significantly social and political, rather than primarily or mostly biological. (ibid, p. 645). If this is to work as a way of making the distinction, one would need to hold that, by contrast, the risks Bostrom is concerned with are primarily biological rather than social. However, Bostrom's claims about the problems with our bodies can be framed as societal issues, in that we have failed to put sufficient resources into, e.g. anti-aging research, and are morally blameworthy for this failure. Likewise, Hall's concerns can be framed as things that ought to be done to people's bodies; to make sense of the claim that subjecting disabled people to additional risk of medical negligence is unjust, we must accept that some bodily states are undesirable. Even if we reject the notion that disability states are especially risky, except insofar as social conditions make them so, we cannot make sense of the idea that it is unjust to refuse a disabled person an organ transplant, to take one of Hall's examples, without accepting that the risk and vulnerability from lacking a healthy heart or kidney ought to be avoided. In the end, both Hall and Bostrom are arguing that we have a moral obligation to change society so that there is wide access to medical interventions that reduce risk of disease and death, and so a distinction between social and biological risks cannot support Hall's position.

A second possible way of making the distinction comes from Hall's claim that one of the differences between the enhancements she critiques, and unproblematic enhancements accepted by everyone, is that the enhancements she critiques "refuse the body" (ibid, p.

645).[29] But what makes an enhancement a problematic refusal of the body? Does it simply mean doing away with or transcending our fleshly bodies? If so, mind uploading scenarios would certainly count. But suppose that, instead of mind uploading, I gradually replace my body parts with prosthetic alternatives. At what point have I refused the body? It would seem ableist to say that using a prosthetic leg rather than one's natural leg is a problematic refusal of the limb. But where else could the distinction be drawn? Either one has refused the body at some point in the gradual replacement scenario, or that scenario never counts as refusal of the body, even when most or all of the flesh has been replaced, but mind uploading does. In either case, it is not clear what makes the relevant difference. It must also be considered whether this criterion applies to other types of enhancement. If refusal of the body is supposed to be the reason (or a reason) why lifespan extension is problematic, then the same reasoning would seem to apply to ordinary, uncontroversial enhancements and treatments. Are vaccinations a refusal of the body since they make us less vulnerable to disease? Perhaps not, since Hall puts gene therapy to boost one's immune system on the unproblematic side of the line (ibid, p. 645). But if there is a problem with life extension because it aims to avoid death, which is just part of having a body, one could also argue that there is a problem with vaccinations because they aim to avoid disease, which is also just part of having a body. One could even argue that vaccinations reject the body with a weakened immune system. Refusal of the body, then, does not provide a helpful criterion for which enhancements are problematic.

Thirdly, it might be a matter of degree; the ways disabled people are put at risk makes them too vulnerable, but if Bostrom's dream became a reality, we would not be vulnerable enough, and we should strive for the optimal level of vulnerability. But how do we decide what the optimal level of vulnerability is? Setting a non-arbitrary threshold is often difficult, but it is an even greater challenge for those who reject the ideal of normality, as both Hall and I do, and as do many disability advocates. Some might argue, for instance, that we ought to give each person the opportunity to have a normal lifespan. Providing

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[29] The other criteria she offers for distinguishing between problematic and unproblematic enhancements are that the problematic ones “draw together positive and negative eugenics” or “attempt to decide what sort of people there should be.” (ibid: 645). It would be hard to argue that enhancements such as life extension “draw together positive and negative eugenics” or “attempt to decide what sort of people there should be” any more than do the enhancements and treatments she accepts. Presumably, she intends these criteria primarily to pick out enhancement via genetic selection, such as in Savulescu’s principle of procreative beneficence. For that reason, I will not address them in this section.

inadequate medical care to disabled people denies them that opportunity, but the forms of life extension Bostrom promotes take people beyond normal, and so fall outside that obligation, and may be unwise or even morally impermissible. But since Hall would not want to give so much significance to normality, if the distinction is meant to be a matter of degree, she would need to find an alternative way of setting the threshold.

My argument in this section does not necessarily show that, if we accept ordinary medical treatments, on pain of inconsistency we must also accept radical enhancement. Instead, I am arguing for something more specific: that the enhancements Hall critiques cannot be distinguished from medical interventions of the sort that almost everybody accepts based on how they treat our bodily vulnerability.

3.3 Autonomy and Interdependence

At first it might appear that those who are concerned with the problems enhancement might cause for disabled people would be keen to emphasise autonomy and individual liberties. In a world where capacities can easily be enhanced and bodies can easily be modified, one might worry about whether people who wish to remain disabled will be free to not use these technologies. Hall would appear to have this concern, arguing that "physically disabled persons who wish to revel in difference and explore the unique functionalities, modes, and desires of their bodies would not fit Bostrom’s schema for exploration of human potential." (2020, p. 637).

Several transhumanist thinkers have addressed this objection. Anders Sandberg, for instance, defends a right to morphological freedom. He stresses that, while this includes the right to use enhancement technologies, it also includes the right not to modify oneself, and notes the uniqueness of those who resist popular technologies. Moreover, he explicitly states that some disabled people do not wish to be cured of their disabilities, and suggests morphological freedom as a point of commonality between transhumanists and disability activists. (Sandberg 2013). Bostrom, whom Hall is critiquing, argues that "People should have the right to choose which enhancement technologies, if any, they want to use." He aims to distinguish transhumanism from eugenics, noting "the poor track record of centrally planned efforts to create better people". Rather than imposing a single standard to which everybody must conform, we should appreciate that "Humans differ widely in their conceptions of what their own perfection or improvement would consist in." (Bostrom 2005a, pp. 11-12).

Hall, however, is not satisfied with this response to her concern. She is troubled by Bostrom's emphasis on individual liberty, arguing that it "casts humans in an atomistic light" and that this way of understanding the self "tend[s] to devalue the lives of those with disabilities on the basis of the undesirability of dependence." (Hall 2016, p. 20). Hall does not explain exactly which of Bostrom's views commit him to an atomistic conception of the self, or to the undesirability of dependence. [30] It cannot merely be his advocacy of autonomy, since not all accounts of autonomy understand the self in this way. Feminist philosophers have developed relational theories of autonomy that do not rely on the atomistic conception of the self-thought to be presupposed in other accounts. [31]

Autonomy over which enhancements to use, if any, can be understood in relational terms. Stoljar (2018) notes that relational theories of autonomy can be classified as either causally relational, i.e. relationships and social circumstances influence the development of autonomy, or constitutively relational, i.e. interpersonal relationships and/or social circumstances are part of the defining conditions of autonomy (sec. 3). Both types of account would suggest that giving people autonomy over which enhancement technologies to use, if any, requires more than just making such technologies widely available and paying lip service to the value of liberty. People must also have the right kinds of interpersonal relationships and social circumstances, and so genuine choice is not always possible within an oppressive social context. Bostrom and Sandberg themselves do not, or at least do not explicitly, understand autonomy in relational terms. Sandberg understands morphological freedom as a negative right: you have the right to modify your body, and nobody has the right to prevent you from doing so. The right of morphological freedom does not, by itself, give you the right to have other people support you in the bodily changes you want to make, although other moral principles, such as compassion, might create an obligation to help (Sandberg 2013, p. 57). Bostrom does not, to my knowledge, discuss the social conditions under which people make choices about their bodies, or what,

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[30] Bostrom himself says very little on the subject. He very briefly responds to the objection that “A sense of vulnerability, dependence, and limitedness can sometimes add to the value of a life or help a human being grow as a person, especially along moral or spiritual dimensions.” (Bostrom 2013, p. 48). However, Hall’s objections are not about moral or spiritual growth.

[31] See, for example, Meyers (1987) and Friedman (2003).

if anything, we are obligated to do in support of other people's choices. It would be fair to say that transhumanists who want to promote individual liberties should do more to attend to social and other external circumstances, but I am aware of no reason why the core commitments of transhumanism would be inconsistent with relational autonomy. [32] In fact, feminism must be able to account for bodily autonomy issues such as reproductive rights, sexual consent, trans healthcare, or even the desire of some disabled people to remain disabled. It is not clear why a theory that can account for the importance of bodily autonomy in these cases, without relying on problematic ideas about independence, couldn't be extended to include the kinds of bodily autonomy Bostrom and other transhumanists are concerned with.

Perhaps there is something about enhancement itself that devalues dependence or presupposes an atomistic conception of the self. The objection might be to the claim that having more capacities leads to more opportunities, and thus to more autonomy. As Catherine Clune-Taylor puts this point:

> the transhumanist assumption that the possession of greater capabilities (particularly rational ones) necessarily leads to an increased opportunity range, which itself necessarily leads to greater happiness and a better life, strikes me as the kind of claim that only a fairly privileged philosopher (that is, likely a cis white man) could make. Or, at the very least, one who does not actually know *any* women philosophers. [33]

Clune-taylor is certainly correct to say that having any particular type or level of intellectual capacity is not a sufficient condition for gaining social opportunities such as becoming a professional philosopher. Many people with far less education and privilege than even the most marginalised philosophers are unable to take full advantage of their intellectual and other capacities because of their social disadvantage. But even if having some specific physical, cognitive, or other capacity is not sufficient for having a given opportunity, it will sometimes be necessary, or at least very helpful.

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[32] In her commentary on Hall's book, Jane Dryden discusses relational autonomy, while still critiquing what she calls "the transhumanist dream of self-sufficient independence" (Commentary by Jane Dryden in Tremain et al. 2019). It remains unclear, however, why transhumanism would necessarily be inconsistent with relational autonomy.

[33] Commentary by Catherine Clune-Taylor in Tremain et al. (2019).

It should also be noted that not all actual or proposed hypothetical enhancement technologies would increase our separateness and independence. As Hall herself notes, "We are many and porous, leaky and interactive." (2020, p. 644). If we especially value our leakiness and porousness, that might be a reason to develop technologies that blur the boundaries between persons, or more generally make us less separate from one another. Bostrom, for instance, explores the prospect of making telepathic communication possible by augmenting our brains with radio transmitters (Bostrom 2005a, p. 7). Savulescu, in his work with Brian Earp and Anders Sandberg, argues for the use of "love drugs" to enhance relationships (Earp et al. 2012). I do not intend to present these technologies as a solution to the stigmatisation of dependence and interdependence. I am suggesting that some of the technologies discussed in the enhancement literature would make us less separate rather than more self-sufficient, and so the proponent of enhancement needn't endorse an atomistic conception of the self on which separateness is desirable.

3.4 Devaluing of Cognitively Disabled People

Hall concedes that allyship between transhumanists and people with physical disabilities might at first appear possible, given the interest of both groups in incorporating technology into our lives and bodies (Hall 2016, p. 114). It is less plausible, she suggests, that transhumanists could ally themselves with cognitively disabled people. Transhumanism, according to Hall, "supports entrenched hierarchies between body and mind", which "serve as rationales for devaluing persons with disabilities, especially cognitive disabilities." (ibid, p. 20). Part of this devaluing has to do with the way the body and mind are treated in advocacy for technologies like life extension and mind uploading. Hall says of Bostrom, "his separation of the body and mind—attended by the desire to release the mind from the body—implies that Bostrom may ally himself with physically disabled persons who wish to overcome their bodies but would not ally himself with cognitively disabled persons whose minds he would perceive as defective." (Hall 2020, p. 637.)

With respect to life extension, Bostrom gave a Ted talk in which his primary argument for the badness of death was the knowledge lost as each person dies (Bostrom 2007). For Hall, this is a potentially dangerous way of understanding life and death: "If one concedes that knowledge is what makes life valuable, this implies that persons whose knowledge is discounted or disqualified—people with intellectual disabilities, along with other vulnerable people around the globe—do not have lives worth living." (Hall 2016, p. 2).

This does not follow, for at least two reasons. Firstly, the loss of knowledge needn't be the only, or primary, reason why death is bad. Although it is the main argument for that view in Bostrom's talk, it is not the only possible argument for it, or even the primary argument for it in his work as a whole. Recall Bostrom's arguments from the testimony of older people, as discussed in chapter 1, and Christine Overall's feminist case for life extension, as discussed in chapter 2.

Secondly, even if knowledge production is a large part of what makes life valuable, that would suggest that epistemic injustice is an especially grievous harm. Miranda Fricker in fact holds that epistemic injustice wrongs a person "in a capacity essential to human value" (Fricker 2007, p. 5) The connection Fricker draws between cognitive capacity and human value could be criticised for what it implies about people with cognitive disabilities, but we can also notice the epistemic injustices so often committed against such people. It should not be controversial that epistemic injustice lowers quality of life, even if it does not rise to the level of making life not worth living. Indeed, we can think of all the people who died without getting to contribute their knowledge to the world, because they were disabled, or because they were women, or because for any other reason they were thought by their culture to have nothing of value to say, or because they did not have the resources to leave records. And the sort of knowledge that is lost when people die is not only, and perhaps not primarily, knowledge of abstract concepts. It is also autobiographical, first-person experience, such as knowledge of what it was like to live with a cognitive disability in a particular time and place. Thus, the death of a cognitively disabled person *does* represent a loss of valuable knowledge, and so an argument for life extension based on the knowledge lost when people die needn't devalue cognitively disabled people.

Some readers might agree that arguments for enhancements such as life extension needn't be especially harmful to cognitively disabled people but worry that arguments for cognitive enhancement pose a more direct threat. As Hall expresses this point, "Bostrom’s primary concerns involve improvement of the intellect as a way to improve quality of life, indicating that the two are necessarily positively correlated. So, he would likely refuse any contention that cognitively disabled persons enjoy a high quality of life." (Hall 2020, p. 641). I turn to the more general issue of what the promotion of enhancement implies about disabled people's well-being in the next section.

3.5 Well-being

As just indicated, Hall is critical of the assumption, which she takes to be prevalent in the enhancement literature, that disabled people have lower well-being than their non-disabled counterparts. In reality, she argues, if this is the case, it is political, and not just a natural fact about the body. In response to these concerns, I would suggest that those who believe traits sometimes ought to be changed needn’t be committed to a strong view about the badness of disability.

It would be wrong to say that any attempt to improve well-being by altering biology assumes that our well-being is *determined* by our biological traits, with no room for social and other contextual factors. It might be that our biological traits *influence* our well-being. A person might wish to remove a disability, or enhance a capacity, without holding that the same change would be right for everybody, or even most people. To illustrate how this might work, Elizabeth Barnes argues that disability does not by itself make people worse off. Nevertheless, she notes that some people do not like being disabled and would continue to dislike being disabled even in a non-ableist society. (Barnes 2016, p. 78). These people might wish to remove their disabilities, even if many other disabled people would not share that desire.

Parents wishing to change the traits of children who are too young to express a preference of their own are perhaps making more assumptions about the relationship between disability and well-being in general but needn't hold that disability is straightforwardly bad for everybody. They might believe that most but not all people are better off not being disabled, or that disability introduces a greater risk of low well-being. Parents who hold these views might think their children’s disabilities ought to be removed, while nevertheless acknowledging that many disabled people are happy with their disabilities.[34]

Even those who believe disability is very likely to lower well-being needn’t take their view to be, as Hall puts it, “a neutral, apolitical description that refers merely to facts about the body” (Hall 2020, p. 639). It could refer, instead, to the likely effects of the disability on well-being within the current context. Hall suggests that "Savulescu does not appreciate the

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[34] I do not mean to suggest that views of this sort are the norm. Many people do, of course, hold a more extreme view about the badness of disability. I am only suggesting that one needn’t hold the more extreme view to think traits sometimes ought to be changed.

contingency of well-being, treating it as static." (Ibid, p. 639) Yet Savulescu, in his work with Guy Kahane, has argued that the impact of traits on well-being is context-dependent, but that the traits we typically describe as disabilities generally do lower well-being within current contexts. (Kahane and Savulescu 2009; Kahane and Savulescu 2016) [35] If the relevant contextual factors are more difficult or costly to change than the biological traits, changing people's traits might be the best response. One could of course object to this; perhaps our prejudice, ignorance, or lack of imagination makes changing the relevant contextual factors seem more difficult than it is, or perhaps changing the context should always or almost always take priority over changing the person. I do not mean to dismiss these objections; I think at least some versions of them have force. The point here is simply that if we wish to argue that changing a person's biology in an attempt to increase their well-being is objectionable, we will need to do more than show that the impact of traits on well-being is often context-dependent.

It is also not enough to simply argue that judgements about quality of life are tainted by prejudice. Our belief that certain disabilities and other traits lower well-being can of course be driven by prejudice; because we stigmatise certain traits and then overestimate how bad they are. We should not, however, assume that if we believe a trait, even a stigmatised trait, lowers well-being, it is only because we are prejudiced against people who have it. That belief should perhaps act as a warning sign that prejudice might be operating, but some stigmatised traits do lower well-being. People with sexually transmitted diseases, for instance, are often shunned and ostracised, and there is much that should be done to change attitudes about these diseases. Yet it remains the case that it is better not to have these diseases and changing social attitudes cannot entirely remove their negative effects. I do not mean to say that the same is necessarily true of disability in general, or any particular disability. The fact that a trait is stigmatised is a reason to be careful when judging whether it decreases well-being but is not a reason to automatically conclude that it does not. Nor is it a reason not to come to any conclusions on the matter.

As Linda Barclay argues, some advocates of enhancement are overly confident about what promotes well-being, but although we should be humble about our ability to judge the impact of traits on quality of life, we shouldn't entirely refrain from making such judgements (Barclay 2016, pp. 84-85). Enhancement advocates should be criticised where

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[35] Hall is actually discussing earlier work by Savulescu, but as these two papers show, one can hold that it is bad to be disabled without viewing well-being as static or apolitical.

their judgements about which traits promote well-being are mistaken or overconfident, but that does not mean biological traits should never be changed. It does, however, mean these enhancement advocates have something important to learn from disability activism.

Several philosophers of disability have noted, and criticised, the tendency within bioethics, and broader society, to disbelieve disabled people's reports of high quality of life and called for a greater willingness to believe these first-person reports (Amundson 2005; Goering 2008; Barnes 2016, ch. 4). This insight should be applied more broadly, to traits that might be enhanced. Since we can so easily be wrong about which traits promote well-being, and which body modifications are beneficial or necessary, those who promote the value of enhancement technologies should do so with an openness to surprises about which traits are conducive to well-being. These questions should be approached with epistemic humility, with openness to the possibility that we might learn something new from people's reports about their quality of life. That is not to say these reports should be believed uncritically; the reliability of testimony about well-being is a complicated issue, and a detailed discussion of it is beyond the scope of this chapter. It is to say that disabled people's reports about their quality of life should not be held to a higher standard than the reports of non-disabled people, and, at a minimum, it should not be assumed, without argument or evidence, that disability lowers quality of life.

Before ending this section, I should clarify the scope of its argument. Firstly, I remain neutral on whether my argument would apply to genetic selection. Much of Hall's criticism of attitudes towards the well-being of disabled people in the enhancement literature is directed at Savulescu's principle of procreative beneficence (PPB), i.e. his view that parents should select for embryos on the basis of which child will have the greatest chance of well-being. The PPB recommends selecting for particular embryos, rather than changing the traits of existing people, and some may think that makes a morally significant difference.

Secondly, my arguments in this section do not show that traits ought to be changed. Any benefits of altering, or selecting for, particular traits would have to be weighed up against potential negative consequences. These might include the effects of genetic technologies on women (Overall 2012, ch. 7), and their potential to increase prejudice. Moreover, just as the view that traits sometimes ought to be changed needn't entail a strong view about the badness of disability, the view that a trait lowers well-being does not automatically entail that it ought to be changed. The costs of changing a trait, such as painful or risky medical procedures, might sometimes outweigh the benefits. My argument in this section is only intended to show that the belief that traits sometimes ought to be changed can be accompanied by a more nuanced understanding of the relationship between disability, or unenhanced states, and well-being.

3.6 Disabled People as Dangerous

As discussed in the previous section, Savulescu recommends that parents select for embryos with traits likely to increase well-being. Separately, in his work with Ingmar Persson, he has argued that moral enhancement is necessary to avoid existential risk (Person and Savulescu, 2008; Persson and Savulescu 2012). Hall takes this combination of views to imply that disabled people are dangerous. As she explains her objection:

> prenatal testing and genetic selection are the technologies of choice for creating the best child, and creating the best child is a key human enhancement strategy. Meanwhile, enhancement is required to avoid species extinction. This means that Savulescu suggests, at root, that genetic abnormality is linked to existential risk. These arguments strongly suggest that justice requires that the future not include disabled people, or that disabled people do not belong in hopeful visions of the future. (Hall 2020, p. 640).

The two views of Savulescu's that Hall discusses here are arguably inconsistent, so they cannot be treated as a package. In his work on the PPB, Savulescu (2001) recommends selecting for intelligence, since he argues that it is one of the key traits that increases well-being. By contrast, in their work on moral enhancement, Persson and Savulescu (2008) argue that we shouldn't develop cognitive enhancement without first developing moral enhancement, which would seem to suggest that, at present, we should not be creating more intelligent people. Far from conceiving of people with cognitive and other disabilities as uniquely dangerous, Persson and Savulescu argue that it is our increasing cognitive capacity, combined with our immorality, that poses existential risk. [36]

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[36] To be clear, I don't endorse either the PPB or the specifics of Persson and Savulescu's proposal for moral enhancement. I simply don't think these specific objections to them are successful.

Furthermore, Hall's argument ignores an important difference between moral and other types of enhancement. As discussed in the introduction and chapter 1, disability and enhancement are opposing concepts, in the sense that to become enhanced is to move further from, i.e., toward the opposite end of the continuum from, those who are disabled in the relevant respect. This is not the case for moral enhancement. To illustrate why this difference matters, consider the idea that, to avoid species extinction, we must take up cognitive enhancement. It might make sense to object to this proposal since it implies that people with cognitive disabilities are dangerous, and that we must become less like them to guarantee our survival as a species. This objection cannot succeed against Persson and Savulescu's proposal for moral enhancement, because moral enhancement does not involve moving further from, i.e. becoming less like, any particular group of disabled people. [37]

As with the other types of enhancement I have considered, it is of course possible that ableism and other oppressions will influence our ideas about what counts as moral enhancement, and so people with particular disabilities will be seen as especially morally deficient and in need of improvement. In support of this sort of critique, one could point to the ways in which disability has historically been linked with sin or moral vice and suggest that such associations have not been entirely excised from public consciousness. That would be a good reason for caution, but whether it constitutes a decisive case against moral enhancement is questionable. These potential problems would need to be weighed against the potential positives, such as the possibility that moral enhancement would decrease prejudice.

3.7 Bad consequences in Oppressive Societies

Thus far, I have primarily been considering whether there is something ableist about the values of transhumanists and other enhancement advocates. I now turn to a different sort of disability-related objection to enhancement: that it will have bad consequences for disabled people.

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[37] Although whether that sort of objection succeeds against the cognitive enhancement proposal would depend on the details. If, for example, it was suggested that, to avoid existential risk, a small percentage of the population must take up cognitive enhancement, that needn't necessarily imply that cognitively disabled people are dangerous. The suggestion that we need to have some cognitively enhanced people would even be consistent with the suggestion that we also need to have some cognitively disabled people.

To help us understand the objection, I will draw on Elizabeth Barnes’s discussion of disability cures. Why is it, Barnes asks, that if a scientist is developing a cure for a disability, we think she is doing something good and hope she succeeds, but if a scientist is developing a “cure” for being gay, we think she’s doing something horrible and hope she fails? (Barnes 2016, p. 162). Barnes’s answer to her own question is that these two cases may not be all that different. (ibid, p. 163). It’s not that there’s anything inherently wrong with a drug or other treatment that could change people’s sexual orientation. In fact, it would be good if people could freely modify their sexual orientation as they saw fit. It’s just that, since we live in a homophobic society, we expect the availability of such a treatment to have negative consequences. Gay people would be coerced or pressured into taking the treatment, or so the thought goes, and there would be less acceptance of those who would prefer to remain gay. Likewise, there’s nothing inherently wrong with developing methods for making disabled people non-disabled. In fact, since bodily autonomy is a positive, it’s a good thing if disabled people who would prefer not to be disabled have the option of removing their disability. As with being gay, however, we might worry that the existence of such technologies would lead to less acceptance of people who would prefer to remain disabled. And, just as most of us would think it inappropriate to talk of a ‘cure’ for being gay, many disability activists object to the language of ‘cure’ for disability, even if making it possible for disabled people to become non-disabled is not objectionable per se. (ibid, pp. 162-166).

Now let us extend Barnes’s analysis to enhancement. Some people wish to extend their capacities, or otherwise modify themselves, and from the perspective of bodily autonomy and cognitive liberty, it is good if they can freely do so. The physical and mental changes caused by enhancement will increase well-being for some people. These seem like strong reasons in favour of making enhancements available. Yet even if those reasons are accepted, we might worry about the negative consequences of enhancement within current social contexts. Will people be pressured into using enhancements in ways that reinforce oppressive social norms? Will we really have more freedom over our own bodies and minds? Do these potential negative consequences outweigh the positives?

Those who accept this way of thinking may be tempted by the following line of thought. Enhancement is a good thing in the abstract, but not in the oppressive societies that exist now. Therefore, until we have created a less oppressive, more equal society, enhancement should be banned or strongly discouraged. This will not work, however. Enhancement is not a well-defined category, so proposing to ban enhancements, even temporarily, immediately raises the question of which specific technologies or practices ought to be banned. Enhancement technologies also have treatment uses, so it would have to be the enhancement uses of the technologies, rather than the technologies themselves, that were banned. Even if some interventions typically classified as treatments, such as removing particular disabilities, also ought to be banned, presumably some treatments would still be morally permissible, even required, so we would still need a principled way of making the distinction between permissible and impermissible interventions. Determining what goes either side of that line can itself cause problems, as ever more disorders are invented so that desired medical interventions can be put on the treatment side of the line.

Furthermore, the thought that enhancement should be banned until we have created a less oppressive society assumes that enhancements are something of a luxury. Many transhumanists would disagree with this, since they would argue that the development of enhancement is a moral obligation. Bostrom, for instance, would have you reflect on how many people have died since you started reading this chapter, [38] and urge us to put our resources into researching ways to delay or eliminate aging. According to him, research into lifespan extension is not merely something that would be nice to do, when we get around to it. All the time we delay it, people are dying. (Bostrom, 2005b) Persson and Savulescu would argue that we cannot create a sufficiently moral society quickly enough using only familiar methods of social reform, and that these must be supplemented by moral enhancement (Persson and Savulescu, 2012). If they are right, perhaps we cannot end oppression, or end it quickly enough, without using moral enhancements that would make us less prejudiced. Such claims would have to be evaluated before enhancement could be banned. Even if these arguments are rejected, there is an additional reason for not conceiving of enhancements as luxuries, which has to do with our limited ability to know what it is like to inhabit another person's body.

To some cis people, the hormonal treatments and gender confirmation surgeries opted for by many trans people may seem frivolous. Why, they might ask, would anybody want to modify a healthy body? Such people are not taking into account the distress of gender dysphoria, or the benefits to well-being that can come from modifying one's body to more closely align with one's gender. That is not to say that trans healthcare should necessarily

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[38] As he does in his Ted talk (Bostrom, 2007).

be placed in the enhancement category. Those who would advocate for banning enhancement, at least temporarily, might say that, in the interest of trans rights, trans healthcare should be permitted. But if we can be so wrong about the body modifications required by many trans people, in what other ways could we be wrong about people's desires for their own bodies?

This idea should be familiar to disability activists; as discussed in section 5, disabled people say they enjoy high quality of life, and these claims are surprising to the non-disabled majority, who often disbelieve them. As with the desires of trans people, this is a case where the majority is wrong about what it is like to have a certain sort of body. Even if disability sometimes does lower quality of life, it is not the inevitable tragedy so often depicted.

Since we can so easily be wrong about what people require to live comfortably in their bodies, a blanket ban or social censure of enhancement may do more harm than good. Denying people body modifications can do great harm, even where that denial stems from a desire to prevent people from buying into oppressive norms. With respect to trans healthcare, consider the harms done by the idea that the desires of trans men for surgery and other aspects of transition are the result of internalised misogyny, the way that trans people of all genders are expected to be absolutely sure before being accepted for medical care (Lester 2017, p.39), and the stressfulness and invasiveness of medical gatekeeping for trans healthcare (Pearce 2018, pp. 136-139). As Jamison Green suggests, “The theory that if trans people had some other culturally constructed option, a place to be socially male (or female) while remaining physically female (or male), then we would categorically refuse body altering technology is pure utopian conjecture” (Green 2020, p. 191). Similarly, Kim Hall criticises "the assumption that the body with which one is born is unambiguously one’s own and that oppression is the only thing that prohibits this realization" (K. Hall 2009, p. 122). Just as we cannot assume that trans people would no longer want to alter their bodies in a society without restrictive gender roles, we cannot assume that people would no longer want to become non-disabled, or enhance their capacities, in a world without ableism and other oppression. Nor can we assume that these body modifications are frivolous, or nice to have but inessential to the well-being of those who desire them. It is true that oppressive norms can distort people’s desires about their own bodies but insisting that all such desires are so distorted risks dismissing other kinds of oppression and suffering. Social justice movements are better served by accepting that people have different desires and needs for how their bodies or minds should be, whether that is trans people needing hormones and/or surgery, people wanting to remain or even become disabled, disabled people wanting to remove their disability, or people wanting to enhance their capacities beyond what we currently consider the norm.

There may be some enhancements that will do more harm than good in the current social context, and any future developments in enhancement technology will have more positive consequences in more equal societies. The consequentialist objection should not be entirely dismissed; the worries it raises are important. But before concluding that some particular type of enhancement ought not to be pursued within currently existing societies, the risk that people will be pressured to use it, even if they do not want it, should be weighed up against the harms of making body modifications more difficult to access for those who do desire them. This would need to be decided on a case-by-case basis, and we cannot make this judgement about the entire category of enhancement. The best course of action, then, is to work out how best to reduce the likelihood and severity of harmful consequences from making enhancements available.

To minimise these consequences, and to make genuine choice possible, we must reject arguments and other discourses that frame disabled people as a burden on resources, and which imply that people have a responsibility not to be disabled. Many people would acknowledge that requiring or coercing people to use either disability-removing processes or enhancement processes would be a violation of bodily autonomy. But it's common to think that there's something wrong with being disabled if you could choose not to be. Those who want to acquire a disability are often criticised on the grounds that they are taking up resources that should be given to people who cannot help being disabled. [39] The same attitude can be seen in the idea that people whose disabilities are linked to obesity are less deserving of disability accommodations, since they brought it on themselves. The broader point behind this reasoning, then, is that resources are scarce, so they should be given to those who truly need them. If it's your own fault you're disabled, you shouldn't expect society to accommodate you. Likewise, it might be thought that those who don't enhance shouldn't expect society to accommodate them.

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[39] Criticisms of this sort are documented, but not endorsed, in Baril (2015b) and Martino and Andrejek (2019). I will discuss desires to become disabled in chapter 5.

This resource-based argument is fundamentally at odds with the aims of the disability rights movement in several ways. Firstly, it perpetuates the harmful stereotype that disabled people are a drain on public resources, and that most people who claim welfare benefits and other assistance are fraudulently attempting to get more than they are entitled to. Because of this false perception, disabled people are often expected to go through lengthy and onerous-bureaucratic procedures before having their access requirements met.

Secondly, it harms disabled people who might find certain resources helpful even if, at least according to popular perception, they don't absolutely require them. Here I am thinking of, for instance, people who use a wheelchair much of the time because walking is difficult or painful for them. Such a person shouldn't be expected to forego their wheelchair just because, strictly speaking, they are capable of walking. Yet, if they do decide to stand or walk in a particular situation, they may well be perceived as faking, as though they are not really disabled.

Thirdly, it is at odds with the idea that disability is, at least for some people, something to be celebrated. It's not much of a leap from that idea to the thought that disability might sometimes be a desirable choice, and one that we shouldn't try to prevent. This argument does not depend on acceptance of the mere-difference view. As Crawley (2022) argues, the bad-difference view is best understood probabilistically. Its defenders should, and usually do, grant that some people benefit from their disabilities, even if such cases are very rare. Yet, it might be argued, we can't just hand out scarce disability-related resources like assistive technology to everybody who wants it, whether they truly need it or not. Some resources can be used by everyone without being depleted. If, for instance, more people begin using the accessibility features on their phones, nobody is deprived of those features. In fact, if more people use the software, there are more people who can report bugs, and the developers have more incentives to work on improving the software.

The same considerations might seem inapplicable to the physical tools and devices used by disabled people, which must be manufactured and cannot be copied in the way software can. But assistive technologies are often very expensive precisely because few people use them, and if they are used by more people, they may well become cheaper. The same does not apply, it might be objected, to services that must be provided by human workers. This is true, but often those services are necessary because of failures to create accessible environments. The call for greater accessibility is sometimes expressed in the ideal of universal design, i.e. for buildings, institutions, technologies, and other aspects of the physical and social environment to be designed so that, as far as possible, they are accessible to everybody. The more fully we can realise the ideal of universal design, the less there is a need to provide accommodations to each individual disabled person.

This does not, of course, exhaust the ways in which disabled people require extra resources. Some human services, for instance, may be required however accessible the environment is. I have three responses to this point. Firstly, the extent to which this is a problem depends on how common it is for people to voluntarily remain or become disabled. If such choices are rare, those who do make this choice will not take up large amounts of resources. Secondly, in making arguments like this, it's important to make sure we're not employing an ableist double standard. We typically allow people the personal liberty to make socially costly decisions (Stramondo and Campbell 2020, pp. 151-153). My third response is something of a concession. Where an accessibility provision is very costly, but there is a much cheaper but slightly less effective alternative, it may be better overall to use the cheaper alternative. Yet although this may sometimes be necessary, it's important not to jump to the conclusion, without adequate justification, that accessibility provision is unaffordable.

Moreover, the ideal of universal design does have some important limitations. It is not clear that a society can be made simultaneously accessible to people with all disabilities (Barclay 2010; Barclay 2011; Shakespeare 2013, ch. 2). For that reason, it would be unrealistic to suggest that, to avoid the potential bad consequences of enhancement, we should create a society in which being unenhanced is no disadvantage. Indeed, within such a society, if it could exist, enhancement would arguably be pointless. Instead, I am making a more modest claim: that discussion about how to reduce pressure to use enhancements, or inequalities between the enhanced and the unenhanced, would benefit from drawing on work done in the context of disability rights.

There is much for enhancement advocates to learn from the disability rights movement, given that disability activists have paid so much attention to working out how the world can be made more inclusive to people with diverse physical and mental traits. There are also things to learn from movements for other marginalised groups. Trans activists, for instance, might have something to teach us about how to make enhancements widely available and socially acceptable, without pressuring people to change. This is because they campaign for access to hormones and surgery so that trans people can modify their bodies to more closely match their identified gender, but also for the right of trans people not to use these modifications. Thus, trans activists share in common with many transhumanists the commitment to wide access to body-altering technology, and to the right not to use such technology. [40] These movements may not be able to provide a final answer to the question of how to avoid the potential bad consequences of introducing enhancement technologies, but they can provide a starting point for thinking about these issues.

3.8 Conclusion

In conclusion, I would like to turn to the claim, which Hall explicitly argues against, that transhumanists are the natural allies of disability activists. I would suggest that 'natural allies' is not the best term for the relationship between these groups. Being a transhumanist or enhancement advocate does not automatically make a person an ally in the fight for disability justice. Far from it. Enhancements can be developed, promoted, and used in ways that reflect ableist bias and increase stigma. If enhancement advocates do not examine the ways prejudice can distort judgements about which traits are conducive to well-being, or what would constitute moral enhancement, if they are insufficiently attentive to the social contexts in which people make choices about their bodies and minds, disability activists have good reasons to be critical.

I would, however, make the more modest claim that these groups can work together, and that doing so is a way to solve some of the ethical problems connected to enhancement. Questions such as how to reduce inequalities between people with different capacities, and how to ensure that people are genuinely free to have a body or mind that differs from what we take to be the norm, are already being addressed within the disability rights movement. The solutions being developed there can feed directly into the discourse about how best to solve these problems with respect to enhancement.

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[40] For a discussion of the connections between transhumanism and trans issues, see Rothblatt (2013).

Chapter 4: Enhancement in Three Theories of Disability

4.1 Introduction

In this chapter, I will consider how questions about enhancement might be answered from within three different theoretical approaches to disability: the social model, Shelley Tremain's Foucauldian account, and Elizabeth Barnes's value-neutral model. All of these theories reject the common-sense idea that the traits we typically call disabilities or impairments are bad for the person who has them. Beyond that, these three approaches have quite different theoretical commitments. For the purposes of this chapter, I am primarily interested in the normative commitments of these theories, rather than their metaphysical commitments, but some discussion of the metaphysics will be necessary. Many accounts of disability are designed with specific normative commitments in mind, and so discussion about the value of disability, or its relationship with well-being, cannot always be cleanly separated from discussion about the metaphysics of disability. Moreover, to understand how and why these theories differ in their normative commitments, we need to understand how they differ in their metaphysical commitments. These theories needn't deny that, within currently existing social contexts, it's often bad to be disabled. They do suggest, however, that the badness of being disabled is contingent upon our ableist circumstances. If it wasn't for ableism, it wouldn't be bad to be disabled. [41] Each theory has a different way of specifying exactly how this works, depending on how it understands the relationship between, on the one hand, the bodily or psychological properties we understand as disabilities or impairments, and on the other hand, our ableist social circumstances. I want to investigate what each of these theories of disability implies about the ethics of enhancement. To do this, we need to know when, if ever, each theory would find it acceptable to alter people's bodies, as opposed to changing society, and that will partly depend on how the theory understands the relationship between the biological and the social.

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[41] Or at least, that’s the standard way of understanding the difference between theories according to which it’s bad to be disabled, and theories according to which disability is not bad. However, as I will briefly discuss in section 4 of this chapter, this way of understanding the distinction has some important problems.

In each of the below sections, after deciding what view of enhancement should be taken within the theory of disability under discussion, I evaluate it as a position on both disability and enhancement. The remainder of the chapter is structured such that each of the latter two theories solves a major problem of the one preceding it. The social model draws a sharp distinction between the biological and the social, arguing that we should change society rather than disabled people's bodies, which suggests that enhancement should be rejected in favour of social reform. The insights of the social model have been important in the history of disability activism, but it draws too sharp a distinction between the biological and the social, when in fact these things can be rather difficult to pull apart. The Foucauldian account is an improvement on the social model in that it does not rely on this crude dichotomy, and recognises that impairment, rather than being wholly natural, is socially constructed. This account goes even further than the social model in drawing attention away from the natural or biological and towards the social and political, and so it may seem that, like the social model, it would straightforwardly reject enhancement in favour of social reform. Yet this account makes it difficult to say that we should change society rather than biology, since it cannot easily make the required distinctions. Proponents of this account might want to reject enhancement on the grounds that it normalises people, but it is not clear that enhancement actually does this. The Foucauldian account has difficulty accepting that the body can be a source of suffering, whereas the value-neutral model can accommodate this idea, even while holding that disability is mere-difference rather than bad difference. On this account, disabilities are, in general, neutral with respect to well-being, but can nevertheless be harmful in some contexts, or with respect to some aspects of life, and may even be bad overall for some people. This suggests that enhanced traits are similarly neutral in general, but that some people may nevertheless benefit from using enhancement technologies. The value-neutral model is the strongest of the three approaches I consider in this chapter but is not exactly the same as the theory I defend in later chapters.

4.2 The Social Model

The term 'social model' requires some clarification. Barnes and Tremain each distinguish between two uses of the term. Tremain notes that it is sometimes used broadly, to indicate any sociopolitical, as opposed to medical, conception of disability, and sometimes more narrowly to indicate a specific view within this family, on which disability is the social oppression imposed upon people with impairments, where impairments are understood as neutral human characteristics (Tremain 2017, pp. 9-10). Throughout this section, I will understand the social model in the narrower of the two senses that Tremain identifies, with the exception that I will consider approaches to the social model which hold that impairments are not entirely neutral. Meanwhile, Barnes distinguishes between a reading of the social model which is committed to the impairment/disability distinction but makes no commitments about whether it is bad to have impairments, and a stronger reading on which all, or at least the most substantial, bad effects of being disabled are the result of disability, rather than impairments (Barnes 2016, pp. 26-27). I will consider both of these readings and will begin with the stronger of the two. As I understand it, the strong social model is committed to the impairment/disability distinction, and to two additional claims: firstly, in the absence of disability, impairments would have few if any substantial bad effects. Secondly, we should change society (disability) rather than removing impairments. [42] The group of theories I will call weak social models accept the impairment/disability distinction but reject, or remain neutral on, one or more of the strong social model's other commitments. This section will primarily be concerned with theories that endorse, or at least are compatible with, a naturalistic account of impairment. Some theories distinguish between impairment and disability but regard both as social properties. I will discuss these in the next section.

The implications of the strong social model for enhancement seem quite straightforward. The bad effects of being disabled are attributable to disability (society) rather than to impairment (biology) and so we ought to change society, rather than disabled people's bodies. If impairments really are neutral characteristics, there would seem to be little basis for distinguishing between impairments and unenhanced traits. To the extent that enhancement has worthwhile benefits for people, it is because social practices make certain traits appear advantageous, and those benefits should be distributed more widely by changing society.

This simple view has some crucial weaknesses. It draws too sharp a distinction between the biological and the social, when in fact the two are intertwined and interact in complex ways. Social model advocate Colin Barnes is sceptical of this critique: "to claim that the impairment/disability distinction is false is to suggest that the division between the biological and the social is false. Whilst such assertions may be of interest to philosophers

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[42] I borrow the term ‘strong social model’ from Shakespeare (2013).

and some social theorists, they have little, if any, meaningful or practical value in terms of research, policy and practice." (C. Barnes 2012, p. 22). I would suggest that a sharp distinction between the biological and the social, and thus between impairment and disability, should be criticised precisely because it is not useful in research, policy or practice.

The sociologist Tom Shakespeare has described how the social model is difficult to operationalise in empirical research due to the difficulty of distinguishing between impairment effects and the effects of disability. He gives the example of a person with MS who is experiencing distress from multiple sources: pain, limitations, and other physical symptoms; depression resulting from the neurological condition; anger and distress because of social barriers or the negative reactions of friends, family and employers, all of which may be exacerbated by cultural representations of MS. These factors are likely to be inextricably linked within the individual's life, so it does not make sense for researchers to try to classify each of this person's reports of distress as resulting from either impairment or disability. (Shakespeare 2013, p. 23-24).

Advocates of the strong social model also need to be able to distinguish between interventions that remove or treat impairment, and interventions that remove or mitigate disability. This distinction is sometimes made difficult to draw by the lack of clear boundaries between different types of technology. Disability activists who argue against the necessity of cures are generally not opposed to technology per se; they simply want resources to be invested into assistive rather than curative technology. But as Joseph Stramondo points out, this preference, whether as an individual or a policy choice, presupposes an adequately clear distinction between the two (Stramondo 2019, p. 1126).

Stramondo illustrates the problems with two possible ways of making this distinction. Firstly, it might be that curative technologies give people a normal mode of functioning, whereas assistive technologies increase the person's level of functioning, but in an alternative mode. But what counts as a normal mode of functioning depends on the level of analysis we adopt. Stramondo imagines that a quadriplegic person might be implanted with a brain-computer interface (BCI) that bypasses their spinal cord injury, allowing them to move their limbs and restoring full sensation. In some crucial respects, the BCI restores the normal mode of functioning: the person mobilises on two legs, rather than, for instance, by using a wheelchair. Yet, stramondo argues, controlling one's body by having one's brain signals relayed by a computer is not a normal mode of functioning for the human species (ibid, pp. 1129-1132). Secondly, it might be that cures are incorporated into the body whereas assistive technologies are external to it. This becomes more complicated when we note that there is disagreement about what it means for something to be incorporated into the body (ibid, pp. 1132-1133). Andy Clark argues that humans are "Natural-born cyborgs"; our sense of body ownership can extend beyond the skin; the non-biological, ostensibly external tools we use can come to seem like parts of ourselves, and we use them as though they are incorporated into the body. (Clark 2003).

Stramondo goes on to develop a third way of making the distinction: assistive technologies confer a disability identity on the user. A person's identity, in the relevant sense, does not depend solely on how she understands herself. Whether use of a given technology confers a disability identity, then, depends on broader cultural factors. He gives the example of cochlear implants, which were once thought to be curative, but have come to confer a deaf identity on their users (Stramondo 2019, pp. 1133-1137).

Stramondo's proposal is interesting and to an extent helpful, but I doubt that, on its own, it can draw the distinction as clearly as the social model requires. [43] As Stramondo acknowledges, and as the cochlear implant example shows, his proposal has the implication that what counts as assistive or curative depends on context (Ibid, p. 1139). But notice that this, in turn, implies that we can change whether the technologies disabled people tend to use are assistive or curative by changing the relevant contextual factors. Rather than campaigning for investment of social resources in technologies that, in the current context, are assistive rather than curative, disability activists could work to change discourses and other aspects of social reality so that technologies that are currently being widely promoted come to confer a disability identity on their users. I doubt this will be very satisfying to proponents of the strong social model, who need to be able to clearly distinguish between removing impairment and removing disability. Perhaps Stramondo's proposal can be supplemented by the other ways of drawing the distinction he considers.

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[43] To be clear, Stramondo is not defending the social model, so if his way of drawing the assistive/curative distinction cannot uphold the social model’s impairment/disability distinction, I don’t necessarily take that to mean his proposal has failed. It only means that it won't be useful for social model advocates who might want to use it to defend the distinction between removing impairment and removing disability. Stramondo's proposal may well be perfectly adequate when combined with different theoretical commitments, so what I have said about it here should not be taken as a general purpose critique of it.

We might say that cures tend to give people a normal mode rather than level of functioning, to be internal rather than external to the body, and do not confer a disability identity on their users. This makes the distinction rather more complicated, so it probably won't support the distinctions the social model requires.

A proponent of the social model might still want to maintain the assistive/curative distinction, and the more general distinction between removing impairment and removing disability. The discussion so far, they might argue, shows that there are some difficult or borderline cases, but this does not prevent the distinction from being useful most of the time. Even if this is true with respect to currently existing technologies, the distinction will probably become more difficult to draw as these technologies develop further. If technologies become more closely integrated with our bodies, this could blur the boundaries between assistive and curative technologies on all three ways of drawing the distinction. And as Minerva and Giubilini (2018) argue, assistive technologies may come to count as enhancements if they provide levels of functioning significantly beyond the norm. Even if these arguments apply only or primarily to future technologies rather than present ones, they matter now for those who want to influence the trajectory of technological development. If we ought to develop assistive technologies rather than cures or enhancements, does this mean, for instance, that we ought to discourage technologies that are integrated with the body? If so, does that only mean we should discourage devices that go under the skin, or should the body be understood more expansively? When do prostheses, or wearable devices, count as part of the body? Those who want to promote assistive technologies rather than cures will increasingly face questions such as these.

Given these problems with the impairment/disability distinction as understood within the strong social model, the view that we should change society rather than altering people's bodies, although not entirely false, is far too simple.

Weak social models, as already mentioned, do not endorse all of the commitments of the strong social model. Some might reject the claim that it is always or usually society, rather than disabled people's bodies, that should change. Samaha (2007), for instance, argues that, even if one accepts the social model's claim that disabled people's disadvantages can be attributed mostly or entirely to societal conditions rather than to impairments, this needn't have any particular policy implications. [44] Similarly, one could accept the social model's impairment/disability distinction but nevertheless maintain that impairments are (probabilistically) bad for the person who has them, or at least that impairments have bad effects, even if they are neutral overall. These theories do not insist that societal change is always preferable to removing impairment, and so they needn't insist that social change is always preferable to enhancement. Weak social models, then, or at least some of them, are compatible with endorsing enhancement.

Weak social models reject the more implausible assumptions of the strong social model, but they are in danger of not saying anything substantive. They distinguish between impairment and disability, but this by itself tells us nothing about what makes a trait or property an impairment, or whether impairments, separate from disability, are bad for the people who have them. Weak social models need to be combined with theories of impairment and/or disability, and it is the theories with which they are combined that will end up doing most of the interesting conceptual work. If, for example, impairment is defined in terms of departure from normal functioning, the theory will inherit the problems of normal functioning accounts of disability, except that these will be problems for our theory of impairment, rather than for our theory of disability. As Barnes puts this point, "The upshot of this reading of the social model is that we’ve moved the goalposts of inquiry (or perhaps simply renamed them)." (Barnes 2016, p. 27).

More sophisticated weak social models aim to respond to some of these problems. As an example, Howard and Aas (2018) develop a revised social model inspired by Sally Haslanger's accounts of gender and race (Haslanger 2012a). On their view, disability is prejudice and exclusion directed at those who have a bodily or psychological property taken to be an impairment within the dominant ideology. In contrast with more traditional approaches to the social model, it’s not quite accurate to say that impairment is a necessary condition for disability; the dominant ideology could be wrong about whether a given condition is an impairment, or about whether impairment exists at all, so you could be disabled in virtue of having a property that is not, in reality, an impairment. However, in contrast with Haslanger's accounts of gender and race, this account will classify you as disabled only if you actually have one or more of the bodily or psychological properties in

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[44] See also Barclay (2011) who makes the more general point that models of disability, including the social model, do not necessarily have the normative implications we usually take them to have.

question, but not if you are merely taken to have it. Howard and Aas provide an account of disability and its relationship with impairment, but their account leaves open questions about the precise relationship between impairment and well-being, and about when, if ever, it is acceptable or desirable to remove impairment. For that reason, it also leaves open questions about the permissibility and desirability of enhancement.

4.3 The Foucauldian Account

At first Shelley Tremain's Foucauldian account may seem like an even stronger form of the strong social model, but there are actually some crucial differences. [45] This account, like the social model, attributes the bad effects of disability entirely to society. It goes further than the social model in viewing not only disability, but also impairment, as socially constructed. Unlike the social model, however, the Foucauldian account does not make a distinction between impairment and disability: "impairment has been disability all along" (Tremain 2001, p. 632). [46] Impairment, on this view, is not a transcultural, transhistorical property that some people possess, but rather is brought into being through discourse, as an effect of power. Even what might be thought of as impairment effects are socially mediated. In response to the objection that the social model neglects the lived experience of embodiment, and that Foucault's work is unsuitable for use within disability theory for the same reason, Tremain argues that "the materiality of the body per se... is precisely what philosophy of disability and disability theory must examine rather than straightforwardly assume to be the basis from which inquiry should proceed." (Tremain 2017, p. 119). Moreover, "Even the idea of pain and the experience of it are historically and culturally relative and interpreted." (ibid, p. 116). We might think that some aspects of disability (or impairment) are unambiguously attributable to the body, and not to social circumstances, but Tremain is claiming that the way we experience our bodies, and our ideas about what constitutes the body, profoundly depend on discourse and other aspects of the social world.

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[45] ‘The Foucauldian account’ is my term for the view and is not a label Tremain herself ever uses. Although I use this label for simplicity, this section is intended as a discussion of Tremain’s view, and not a discussion of Foucault’s work per se.

[46] In her 2017 book, she adds the clarification “or rather, an element of the apparatus of disability” (Tremain 2017, p. 93). While this implies that impairment is not strictly speaking identical to disability, it does still mean that they are not separable.

Turning to the implications for enhancement, since this account tends to downplay the effects of physical and psychological traits in favour of an emphasis on discourse and power relations, it might seem that those who accept it ought to reject enhancement, holding instead that any benefits of having a certain sort of body or mind should be brought about by social reform rather than by changing people's bodies. Tremain herself has been explicitly critical of enhancement, as have other Foucauldian thinkers (Tremain et al. 2019), and Hall, whose critique of transhumanism I examined in the previous chapter, draws heavily on Foucault in her work. [47] However, the relationship between the Foucauldian account and enhancement is not as simple as the preceding discussion would suggest. This is because it collapses the distinctions that would allow us to make sense of the claim that we should change the social environment rather than altering people's natural or bodily properties. If enhancement is to be opposed on this account, it must be for another reason. I make a suggestion as to what that reason might be towards the end of this section.

This feature of the account does not arise simply because of the idea that impairment is socially constructed. To explain why, and to bring the Foucauldian account into sharper focus, I want to show how it differs from other social constructionist views of impairment. I begin with Christine Overall's view. Unlike Tremain, Overall retains the impairment/disability distinction; impairment and disability are both constructed, but they are nevertheless distinct (Overall 2006). Overall identifies two ways in which impairment is constructed. She refers to these as material and conceptual construction, but these correspond well to what Haslanger (2012b) calls causal and constitutive construction respectively. Impairment is causally or materially constructed in that circumstances such as maternal malnutrition and unsafe practices in the workplace cause impairments, and broader social forces such as classism, racism and sexism influence the distribution of impairments across the population. (Overall 2006, p. 128). Impairment is constitutively or conceptually constructed in that it is defined with reference to social circumstances. What counts as an impairment depends on context. Particular characteristics are picked out as supposedly abnormal or defective, but the same characteristic might not count as an impairment in a different context. (Ibid, pp. 127-128.) It may even be that any physical or

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[47] Although Hall, like Tremain, understands impairment as socially constructed (Hall 2016, pp. 48-50), she endorses the cultural model, which is not exactly the same as Tremain's account. In contrast with the exclusive focus on the social and political within Tremain's account, the cultural model "responds critically to the false choice of either the social world or the body as an explanatory mechanism" (ibid, p. 46).

psychological property could count as an impairment, given the right social context. Overall does not make this stronger claim about impairment, but she does make an analogous claim about old age, with which she is exploring the similarities to impairment. Any number of years lived could count as old age, because oldness is always defined with reference to human purposes and environments. The age of 30 is too old to learn a language well enough to pass as a native speaker, whereas 50 is generally considered too young to retire (ibid, p. 130).

Another useful comparison is with Ásta's conferralist account. This is a theory about the metaphysics of social categories in general, but here I'm going to focus on what Ásta says about sex and gender. Although Ásta does apply her account to disability, she does not discuss in detail how impairment gets conferred, or whether there is a distinction between impairment and disability. In comparing her view with that of Judith Butler, Ásta suggests that "The conferralist paradigm can help us make sense of the value-ladenness of a property or category, without denying that there is anything prior to the conferral" (Ásta 2018, p. 70). This makes it a particularly illuminating point of comparison with Tremain's account, since Tremain's claims about impairment and disability are intended to directly parallel Butler's claims about sex and gender (Tremain 2001). Ásta wants to maintain a distinction between sex and gender, but nevertheless thinks that both are social properties. Sex, on her view, is a status conferred by legal authorities who are attempting to track as many physical sex characteristics as possible (ibid, p. 72). So, although sex is a conferred status, biology imposes some limits on what can count as sex (ibid, p. 68). If something roughly analogous is true of impairment, then the property of being a person with an impairment is a conferred social status and not a natural property. Yet we do have natural properties that exist prior to the conferral, and nature might limit what can count as an impairment.

By themselves, models such as these do not tell us whether we ought to remove impairments, or whether enhancement is morally permissible. The realisation that impairment is conceptually or constitutively constructed might lead us to question whether impairment needs to be removed, given that characteristics aren't classified as impairments solely because they have negative effects on the people who have them, independent of the social circumstances. This, in turn, might lead us to question our convictions about which, if any, enhancements are beneficial. On the other hand, Overall notes that an account such as hers needn't deny that the characteristics we classify as impairments can involve suffering (Overall 2006, p. 127).

Although these accounts suggest that impairment is socially constructed, they can still maintain some degree of separation between the biological and the social. The conferralist account, for instance, can maintain a distinction between, on the one hand, the conferred social status of being a person with an impairment, and on the other hand, the base properties for the conferral, i.e. the various physical, psychological, and other characteristics the conferrers are attempting to track. These views can make sense of the thought that we should eliminate the social oppression while retaining the physical and psychological traits. There might be a sense in which we should eliminate impairment, i.e. we should dismantle the social structures that classify some traits as impairments, or some people's bodies as impaired, but we might want these traits to continue to exist, even if we want them to not count as impairments, and even if we want to eliminate the category of impairment entirely.

Tremain's account, however, does not have the theoretical resources to make these distinctions. Unlike the social constructionist views of impairment just described, Tremain "eschews the assumption... according to which there exists a prediscursive material body that disability theory can identify, articulate, and accurately represent." (Tremain 2017, p. 85). In the context of a discussion about the sex/gender distinction, Tremain criticises structuralist analysis on the grounds that it "presupposes that nature is prediscursive", arguing that "it cannot interrogate what counts as nature within a given cultural and historical context, in accordance with what interests, whose interests, and for what purposes." (Tremain 2017, p. 112). The more difficult it is to distinguish between nature and culture, the less it makes sense to argue that we should change culture rather than nature. The more we blur the distinction between a person's body and their environment, the more difficult it is to sustain the view that we should alter the environment rather than modifying disabled people's bodies.

Indeed, this rejection of a dichotomy between things that are natural and inevitable on the one hand, and things that are cultural, contingent and changeable on the other, has something in common with views expressed by many proponents of enhancement. While I very much doubt that Tremain and others who endorse similar views would be willing to accept the significance of these parallels, the discussion of these similarities that follows will allow me to identify which aspects of the account should be accepted.

Donna Haraway famously uses the figure of the cyborg to blur the distinction between nature and culture (Haraway 1991). Invoking Haraway in this context is controversial. On the one hand, Nick Bostrom, in a discussion of feminists' mixed response to transhumanism, suggests that Haraway is among those who have welcomed the liberatory potential of biotechnology (Bostrom 2005c, p. 18). On the other hand, Cary Wolfe argues that Haraway's cyborg has little in common with the forms of enhancement promoted by transhumanists; while transhumanism draws on ideals of rationality inherited from the enlightenment, Haraway is rather more suspicious of reason (Wolfe 2009, p. Xiii). Hall, drawing on Wolfe's work, argues that Haraway questions stigmatising norms, whereas transhumanism supports and expands these norms and ideals (Hall 2016, pp. 12-13 and 18). If Haraway is inappropriate as an example here, consider instead Andy Clark's idea of natural-born cyborgs, as discussed in the previous section of this chapter, and the extended mind thesis developed by Clark along with David Chalmers (Clark and Chalmers 1998). According to the extended mind thesis, the mind can extend beyond the brain. The information stored on your phone (Or a notebook, to use the original example given by Clark and Chalmers) can, under certain conditions, count as part of your mind. In suggesting that some of the tools and technologies we take to be external to us can actually count as part of the body or mind, these ideas cast doubt on familiar ways of drawing the distinction between a person's body or mind and their environment.

The development of enhancement technology also casts doubt on the familiar idea that what is natural is inevitable and unchangeable (or at least that changing it is beyond the scope of political and social institutions) whereas the social world can and in many cases should be changed. If technological developments increase our ability to modify our biology, then justice may require us to make such modifications widely available. This idea is expressed directly in the xenofeminist slogan: "If nature is unjust, change nature!" (Laboria Cuboniks 2015). Elaborating on this, Helen Hester argues that "Biology is not destiny, because biology itself can be technologically transformed, and should be transformed in the pursuit of reproductive justice and the progressive transformation of gender." (Hester 2018, p. 22). A similar idea, although framed differently, is that social inequalities, as opposed to natural inequalities, are those that can be ameliorated by human intervention. This would imply that, as enhancement technologies develop, ever more inequalities become social rather than natural (Lewens 2009).

Before returning to the Foucauldian account, I want to address two objections to the line of thought I have just been pursuing. Firstly, Michael Hauskeller objects to the idea that nature is the sort of thing that can be unjust. He argues that, since our genetic and other biological properties were not designed by an agent, they are not the sort of thing that can be either fair or unfair. If my talents command less respect or financial compensation than the talents of famous sports stars, I can perhaps claim that my talents are just as valuable as theirs and so this lack of esteem is unfair, because respect is given or withheld by human agents. I cannot, however, claim that my lacking the natural endowment's that would help me to achieve sporting success is unfair (Hauskeller 2016). Yet in many cases, bodily differences between people are caused by social systems that *are* designed by humans. Social groups differ in their access to healthcare, exercise and nutritious food, and one's access to these goods profoundly affects one's bodily properties. Even in cases where no social processes can clearly be identified as the cause of a physical or psychological trait, social circumstances make it easier or more difficult to alter one's body. Human agents decide which body-altering technologies to develop, which ones health policy should count as treatments as opposed to enhancements, which ones are legal and widely affordable, and which ones medical professionals are trained to use. These social circumstances will often be unjust, and so it will sometimes be unjust that people are unable to alter their bodies in the ways they want or need. It might be argued that, since these are social circumstances, they are not really ways in which nature per se is unfair, and I don't want to insist on framing it in this way. The important point is that we shouldn't be too quick to dismiss the possibility that differences in physical and cognitive abilities are unjust.

Secondly, this talk of altering the body may seem rather troubling from the perspective of disability justice, as it may appear to neglect the perspectives of those disabled people who do not want to change their bodies. But I think we can acknowledge that some bodily states are straightforwardly bad for everybody or almost everybody who has them, even if the ones we call disabilities or impairments are not among them. As Barnes points out, "People march in disability pride parades, but they don’t march in cancer pride parades." (Barnes 2016, p. 118). Barnes also argues, and I will discuss this in detail in the next section, that even if a disability is a mere-difference rather than a bad-difference overall, it may still be bad in some respects or for some people. The thought that justice sometimes requires us to change biology needn't mean we ought to bring people as close as possible to some blueprint of the perfect body. Instead, it might mean that people should have more control over their own bodies. And, of course, social norms requiring people to alter their bodies are also unjust.

Ideas such as these show that we can accept what is right in Tremain's account (the lack of a sharp division between nature and culture, and the sense that much of what we take to be fixed and immutable is in fact changeable) without endorsing her reluctance to identify the body itself as a potential source of suffering, or at least something we might want to alter. I agree with Tremain that we should, as she puts it, "interrogate what counts as nature" (Tremain 2017, p. 112), but if anything, breaking down the boundary between nature and culture would seem to suggest that enhancements, which alter things we typically count as natural, are sometimes appropriate. The blurring of this boundary would also count against enhancement proposals that reduce complex human traits to simple biological causes, while ignoring social and environmental factors. We need theory that is attentive to the biological and the social, and to the complex interactions between them. This may seem unsatisfying to a proponent of the Foucauldian account. I have already mentioned that Foucauldian thinkers, including Tremain, have argued against enhancement from a disability perspective. Before concluding that they are simply wrong about the implications of their views, it would be wise to consider what else might be wrong with enhancement from this perspective.

The problem with enhancement, from the perspective of the Foucauldian account, is perhaps what might be understood as a tendency towards normalisation. This is not the worry that people are, or will be, coerced into using enhancement technologies; indeed, people may enthusiastically participate in practices that aim to normalise them. Nor is it precisely a worry about distortion of preferences. If you want to use some enhancement technology that might be seen as problematic from this perspective, it's not because your true, authentic desires have been distorted or obscured by ideology or social circumstances. Instead, it's because power has produced you as the sort of subject that wants these things. In a discussion of prenatal testing and screening, Tremain argues that "practices of neoliberal governmental power produce people with certain kinds of subjectivities, that is, these practices have constituted subjects whose actions are governed through the exercise of their own capacity to choose in accordance with the norm(al)." (Tremain 2017, p. 190). Presumably similar, if not the very same, practices of neoliberal governmental power would be operating in cases where people are choosing for themselves to undergo enhancement processes.

I would agree that we should be attentive to how power is operating in contexts where enhancement technologies are being used and/or promoted, and it may be helpful to ask who really benefits from enhancement practices, but I doubt that this constitutes a good argument against enhancement in general. The fact that an intervention brings people closer to what is considered normal does not provide a strong reason to avoid it. Even the idea that enhancement is convenient for a power regime does not, by itself, show that we ought not to enhance, although it might provide a basis on which to reject certain sorts of arguments. Consider, for instance, the view that people ought to enhance, and to remove disability, so as to be more economically productive, to take up fewer resources, and to be less burdensome to the taxpayer and to the rest of society in general. As stated in chapter 3, I think we should reject these ideas. If these were the only or primary purported benefits of enhancement, then arguments against such claims would significantly weaken the case for it. But as I will argue in the remainder of this thesis, there are many ways in which enhancements might be beneficial to individuals that don't depend on their possible benefits to a regime of power. Enhancement technologies, as with many things, can be either oppressive or liberating, depending on how they are used. I would suggest, then, that to distinguish between good and bad enhancement practices, and to guide our use of these technologies, we will need to rely on testimony.

Tremain is critical of "disability theory that unquestioningly assumes disabled subjectivities, identities, and experiences to be self-evident, transhistorical, and foundational." (Tremain 2017, p. 84). She does not entirely reject the use of disabled people's testimony, but she does caution that "our current subjective experience is not a decontextualized and inherent property or manifestation of our (minority) identities" (ibid, p. 107). I don't want to unquestioningly assume anything about disabled people's subjective experiences, much less that they are transhistorical or decontextualised inherent properties. But disability theory that significantly relies on testimony and subjective experience needn't make these assumptions. Testimony is fallible, subject to external influence, and should not be accepted uncritically as unquestionable truth. But without relying significantly on disabled people's reports of their subjective experience, I doubt that the idea of normalisation will be helpful in distinguishing between problematic and unproblematic enhancement practices.

I don't necessarily dispute that bodily sensations, including pain, are interpreted within a cultural context, but I don't take this to have any specific normative implications. We don't need to rule out the possibility that the way we experience our bodies is socially mediated before we can consider altering the body. It's often true that we should change society rather than disabled people's bodies, to the extent that the two can be distinguished, but this should not be treated as an absolute rule. Most of the criteria we could use to decide which type of intervention is best (what the person themself would prefer, what is most effective, what is most likely to reduce stigma) will sometimes recommend bodily alteration, and sometimes recommend social change (J. Wolff 2009). And, as discussed in the previous chapter, I worry that any theory that does not sufficiently recognise that some people need or desire body alteration will have bad consequences for trans people in particular. So, I want a theory that can recognise that the body is a potential source of suffering, and that changing the body is sometimes an appropriate response to this. Yet our theories should recognise that many people value and celebrate their disabilities, and that much of what is bad about disability in the current world is socially contingent. In the next section, I turn to a theory that can do both.

4.4 The Value-Neutral Model

The social model and the Foucauldian account both attribute the bad effects of disability to society. Barnes wants to retain the idea that disability would not reduce well-being in the absence of ableism, but nevertheless acknowledges that disability has some bad aspects that cannot be changed by any amount of social reform. To do this, she argues that disability is still neutral with respect to well-being, even if it has some bad aspects, because there are also goods unique to disability (Barnes 2016, ch. 3). The value-neutral model is not a concept or definition of disability, but rather a theory about the relationship between disability and well-being. Although Barnes does offer a theory about what disability is, the value-neutral model is separate from it, and could easily combine with a different definition of disability.

Barnes, like Tremain, rejects the impairment/disability distinction, although her reasons are very different. She worries that the distinction makes our theories more complicated than they need to be, and that it leads to an overly disembodied understanding of disability

(Barnes 2018). Endorsing the value-neutral model, however, does not require rejecting the impairment/disability distinction. For those who do accept the distinction, the value-neutral model is best understood as a theory about impairment rather than disability. Nevertheless, I will continue to use the word 'disability' to refer to what some theorists would call 'impairment', as Barnes does.

The value-neutral model is one way of holding a mere-difference view of disability. Mere-difference views, as Barnes defines them, are those views holding that disability would be neutral with respect to well-being in the absence of ableism. A bad-difference view, by contrast, would suggest that disability would still lower well-being in the absence of ableism. The mere-difference view, then, is the denial of both the bad-difference view and the analogous good-difference view (Barnes 2016, p. 69).

The value-neutral model does not attribute all the bad effects of disability to societal rather than bodily or biological factors, and so, unlike the strong social model, it does not need to draw a sharp distinction between the biological and the social. However, if characterised as a view about the effects of disability in the absence of ableism, it needs to distinguish between, on the one hand, bad aspects of disability resulting from ableism, and on the other hand, bad aspects of disability resulting from either the body or features of the environment that are not ableist. If we can't make that distinction, we won't be in a position to make confident assertions either way about the effect of disability after ableism is subtracted. Yet this, too, is a difficult distinction to make.

I have two main worries about characterising the MDV and BDV as views about the effects of disability in the absence of ableism. Firstly, Barnes wants to take seriously the testimony of disabled people about their own quality of life, as do I, yet it's doubtful that any of us are in a good position to judge how our lives would've been different had we lived in an ableism-free society, or to separate the effects of ableism from other disability-related effects on our lives. A possible world without ableism is distant enough from the current world, and the effects of ableism are pervasive enough and pernicious enough, that our judgements about the effects of disability in its absence are likely to be questionable.

Secondly, there is no agreed upon conception of what ableism is, and this muddies the debate about disability and well-being with issues that are not always acknowledged. Mere-difference and bad-difference theorists disagree not only about the relationship between disability and quality of life, but also, potentially, about what justice requires. When participants in this debate disagree about whether disability would still lower well-being in the absence of ableism, they are probably not imagining the same hypothetical non-ableist society and disagreeing about the impact of disability in that world. They might also be disagreeing about what sort of society would be sufficiently just to count as non-ableist, and thus about how to draw the distinction between ableist social circumstances and those social aspects or effects of disability that are not ableist. [48]

The difficulties with this distinction need not pose a serious problem for the value-neutral model, so long as it is characterised in a way that does not refer directly to ableism. With that in mind, the value-neutral model can be described as follows: disability does have some harmful aspects, but it is still neutral on the whole, because "the very same thing that causes you to lose out on some goods (unique to non-disability) allows you to participate in other goods (perhaps unique to disability)." (Barnes 2016, p. 57). If some goods are unique to disability, and other goods are unique to nondisability, this implies that disability and nondisability both come with tradeoffs: disability comes with one set of goods, non-disability comes with a different set of goods, and the two sets of goods cannot easily be had simultaneously.

As I'm interpreting it, the value-neutral model would say that, for instance, hearing comes with unique goods, such as the ability to hear the human voice, but deafness also comes with unique goods, including, perhaps, being able to fully appreciate the benefits of a signed language. This implies that you can either get the full benefits of hearing the human voice, or you can get the full benefits of signing, but you can't easily have both. Since the value-neutral model is a mere-difference view, i.e. it denies both the bad-difference view and the analogous good-difference view, it would probably need to say that the goods unique to disability and the goods unique to non-disability are about equally valuable. Other MDVs, perhaps including the strong social model, might say that there are no unique goods associated with either disability or non-disability. The bad-difference view, by contrast, would say that the goods unique to non-disability outweigh any goods unique to disability. Returning to the example of deafness, the bad-difference view might say that

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[48] For further discussion of the idea that not all social disadvantages faced by disabled people are ableist, and the difficulty of distinguishing between ableism and these non-ableist social disadvantages, see Kahane and Savulescu (2009); Barclay (2010); Barclay (2011) and Andrić and Wündisch (2015)

signing has no particular benefits, or that its benefits can also be enjoyed by hearing people, or that it does provide benefits unique to deafness but that these goods are insufficient to outweigh the bad aspects of deafness.

Now that I have considered how best to characterise the value-neutral model, I can discuss its implications for removing disability and, by extension, for enhancement. Although the value-neutral model would claim that the goods lost from being disabled are about equally as valuable as the goods gained from being disabled, it needn't claim that being disabled has a net neutral impact on well-being for everybody. Barnes notes that some people dislike being disabled and would continue to dislike being disabled even in a world without social prejudice. These people's preferences, she says, should be listened to and respected, and not dismissed as internalised ableism, just as we should listen to and respect the preferences of those who do value their disabilities (Barnes 2016, p. 78). A proponent of the value-neutral model could therefore easily hold that, if, for you, the bad aspects of your disability outweigh the good aspects, so that it is a net bad for you even if it is neutral or a net good for some other people, you might benefit from removing your disability.

These ideas about disability should straightforwardly apply to enhancement. Barnes suggests that mere-difference theorists are typically committed to the view that "Disability is not a defect or departure from ‘normal functioning’" (ibid, p. 70). Those who do accept this view would probably not want to make a sharp distinction, based in normal functioning, between disabilities and unenhanced traits, or between disability-removing processes and enhancement processes. With that in mind, the following is the sort of view of enhancement that should be adopted by those who accept the value-neutral model. Enhancement processes should not be expected to reliably increase well-being for most people. Just as we shouldn't adopt a bad-difference view of disability, we shouldn't adopt a good-difference view of enhanced traits. Just as disabilities come with gains as well as losses, enhanced traits come with losses as well as gains. This is not merely the idea that current or plausible near future enhancement technologies are imperfect and have some unwanted side effects. We might hope to develop better technologies that don't have these problems, but if the value-neutral model is correct, enhanced traits have downsides, inherent to the traits themselves, that can't be avoided by improving the technology. Nevertheless, just as disability does come with some significant bads and losses, enhanced traits come with some significant benefits and gains. Enhanced traits might be neutral on average, just as disabilities are, but they are a net benefit for some people.

To further unpack these ideas, it is useful to draw on the distinction made by Savulescu, Sandberg and Kahane (2011) between functional enhancements, i.e. interventions that increase capacity, and what I will call welfarist enhancements, i.e. interventions that increase well-being. [49] I have already suggested that a proponent of the value-neutral model would probably argue that most of the interventions we would normally describe as enhancements are not welfarist enhancements in general, although any particular one of these interventions might be a welfarist enhancement for a particular person. They might also claim that most of these interventions are not functional enhancements, on the basis that reductions in capacity in one area always or usually lead to increased capacities in other areas. However, they need not make this claim. Although the value-neutral model suggests that disability comes with goods as well as bads, Barnes notes that these goods needn't be what we would ordinarily think of as abilities (Barnes 2016, p. 57). It is consistent with the value-neutral model that disability involves a net reduction in capacity, so long as this reduction in capacity is not reliably correlated with a reduction in well-being. Likewise, it is consistent with the value-neutral model to say that most of the interventions typically understood as enhancements are indeed functional enhancements, but that there is no correlation between functional enhancement and welfarist enhancement. In other words, there is no correlation between increases in capacity and increases in well-being. As Earp et al. (2014), who do not endorse the value-neutral model argue, even interventions that diminish capacities can sometimes be welfarist enhancements.

Proponents of the value-neutral model cannot, therefore, argue for enhancement on the basis that it reliably increases well-being. They should, however, recognise that it has some important benefits. Unenhanced traits might be bad for some people, just as disability is bad for some people. And just as some people might benefit from removing their disability, some people might benefit from using enhancement processes. If some of your unenhanced traits are bad for you, even if they are neutral or good for others, you might benefit from enhancement. Different traits are good for different people or in different circumstances (Silvers, 2008). On the same basis, some disabled people might desire enhancements of

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[49] Savulescu, Sandberg and Kahane distinguish between functional enhancements and human enhancements, the latter defined as interventions into biology or psychology that increase the chances of living a good life in the relevant circumstances, which they understand in welfarist terms. It is well-being that I am interested in here, so I am using the term ‘welfarist enhancements’ for clarity and simplicity.

some sort, but ones that are not directly connected to their disability. Consider, for instance, a person who prefers to remain physically disabled but wants to take up cognitive enhancement, or disabled people who, contrary to the idea that life with a disability is not worth living, want to take up lifespan extension.

The availability of enhancement technologies, then, would seem to have benefits for bodily autonomy, in that they allow people to choose for themselves which traits to have. A further potential benefit might be an increase in diversity. Barnes notes that mere-difference theorists tend to be committed to the view that "Disability is a valuable part of human diversity that should be celebrated and preserved." (Barnes 2016, p. 70). Those who hold this view might extend it to enhancement: just as disability is a valuable part of human diversity, so too are enhanced traits.

Proponents of the value-neutral model could even hold that enhancement is a moral obligation, at least on one way of understanding that idea. The phrase "enhancement is a moral obligation" is ambiguous. It could mean that there is a societal obligation to develop enhancement technologies and make them widely available. This would be consistent with disability-positive views like the value-neutral model. Alternatively, it could mean that individuals have an obligation to enhance themselves and/or their children. This idea cannot really be maintained alongside the value-neutral model. Views of this sort tend to see disability as something to be celebrated, and enhancement processes tend to move people further from disability states. [50]

On this view, there would be nothing special about capacity-increasing interventions. The sorts of reasons a proponent of the value-neutral model might have for supporting the development and availability of enhancement technologies would also speak in favour of giving people access to disabling processes, i.e. ways of becoming disabled.

Those who accept the value-neutral model should recognise the potential benefits of making enhancement technologies available to those who want to use them, but this does not mean they must necessarily be committed to thinking enhancement is a net positive.

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[50] Strictly speaking it’s not inconsistent to hold both that disability is neutral with respect to well-being, and that individuals have a moral obligation to enhance, but belief in such an obligation goes against the broader spirit of the MDV and is at odds with other commitments associated with it, including, as just indicated, the idea that disability should be celebrated.

There is also room for more moderate or ambivalent views, such as the view of Campbell and Wasserman (2020) that “enhancements are neither a simple threat to people with disabilities, ... nor a simple panacea” (p. 576). Some may think enhancements ought not be used in current contexts, based on the sorts of consequentialist concerns discussed in the previous chapter. As argued there, while I think we should take seriously the potential negative consequences of enhancement within oppressive societies, restricting access to enhancements can also be deeply harmful.

There is much that is appealing about the view of disability and enhancement I have been describing in this section, but it is not quite my view. I would agree that different people will have different preferences and needs for how their body or mind should be, and from mere-difference views we should learn epistemic humility about what promotes well-being. We should respect and take seriously people's differing preferences: those who want to remove a disability or enhance their capacities, those who are happily disabled and do not want a cure, and even those who want to *become* disabled. Yet the view I want to defend is not exactly a mere-difference view because I doubt that disability is exactly neutral with respect to well-being. I would expect that, probabilistically, capacity-increasing interventions, including both disability-removing processes and enhancement processes, are more likely to increase well-being than those that diminish capacities, but this probabilistic view leaves room for plenty of exceptions. I will develop and defend my own conception of disability and enhancement in the remaining chapters of this thesis.

4.5 Conclusion

In evaluating these three theories of disability, and drawing out their implications for enhancement, I have argued that our theories should take into account the impacts of both our biological traits and our social circumstances and should not assume that the two can always be sharply distinguished. Bodily or biological properties can be harmful, cause suffering, or may simply not be the attributes the person would prefer to have, and so it is appropriate in many cases to make it possible for people to alter their traits. At the same time, our theories should recognise that many traits normally taken to be harmful, including disabilities, are valued by some of the people who have them. People differ in their needs and desires for how their bodies and minds should be, so we cannot always assume that people will want to remove disability or enhance themselves in predictable ways. We can and should endorse the view that alterations to bodily and cognitive states are sometimes desirable or even necessary, without reverting to a straightforwardly medicalised conception of disability such as the normal functioning view discussed in chapter 2. Cures are not always the right solution, but neither is societal change always preferable to bodily alteration. The view of disability and enhancement I develop in the remaining chapters aims to take account of these points.

Chapter 5: Disabilities are Limitations, Enhancements Increase Capacities

5.1 Introduction

This chapter will develop an account of disability, as well as a corresponding account of enhancement. My arguments from the previous chapters suggest that disability is both biological and social. Many of the effects of disability are the result of the environment or social context. At the same time, the body also has an important role. Whether you are disabled or not, there are limits to what your body and mind can do, which are not entirely attributable to your social context. An account of disability, then, should be neither entirely naturalistic nor entirely social constructionist, but should be a hybrid account incorporating both elements. Moreover, the biological and the social are often difficult to tease apart, so the account should not draw a sharp distinction between the two. That is not to say that nature and culture are entirely indistinguishable, but they are rather more intertwined than some accounts recognise. Similarly, the account should not draw a sharp distinction between the effects of ableism and those aspects or effects of disability that would persist even in an ableism-free society. Again, I am not suggesting that these categories are entirely inseparable. When someone is being bullied just because they are disabled, that is an obvious instance of ableism, but many other cases are far less clear-cut.

I have also discussed the close conceptual relationship between disability and enhancement, arguing against the significance of the distinctions between disability-removing processes and enhancement processes, and between disabilities and unenhanced traits. Our account should recognise that human abilities exist on a continuum, and so neither disabilities nor enhanced traits are discrete categories.

Finally, I said in the introduction that if we want to make claims about the value or desirability of disability or enhancement in general, rather than limiting such claims to specific disabilities or enhancements, we need to have a sense of what unifies these categories. In other words, we need to know what disabilities have in common with each other, and what enhancements have in common with each other. It would be helpful, then, if we can find an account that can allow for such unification.

In the rest of this chapter, I will describe and develop an account that I believe can meet these criteria. Sections 2 and 3 of the chapter focus primarily on disability, and then section 4 turns to enhancement. In section 2, I will describe two accounts of disability (and also of enhancement, in one of the two cases) which belong to a family of views I will call contextual functioning accounts. In section 3, I go on to develop my own account within the contextual functioning approach to disability, called the salient limitations account. Although I don't want to say that this is the only useful account of disability, or the best account of disability in all contexts, I want to highlight here some of its advantages. I have argued that disabilities and unenhanced traits should generally be treated in the same way, but what is it, exactly, that disabilities and unenhanced traits have in common? My account answers that question: both disabilities and unenhanced traits are limitations. This is helpful not only for those who want to think about disability in conjunction with enhancement, but for anyone who wants to understand disability as being on a continuum of human variation in ability. The account also aims to capture a certain sort of asymmetry between disability and non-disability: environments can be inaccessible to disabled people, but an environment designed for disabled people is not thereby made inaccessible to non-disabled people.

In section 4, I consider three different ways one might develop an account of enhancement in relation to it. The strongest of these accounts is that any intervention that adds or increases a capacity should count as an enhancement, even if it removes disability. Thus, rather than conceiving of disability-removing processes and enhancement processes as entirely separate categories, this approach would understand disability-removing processes as a subset of enhancements.

5.2 Contextual Functioning

In this section I will describe a growing family of views, which I will call contextual functioning accounts. Like naturalistic accounts, these theories understand disability as having to do with physical or cognitive functioning; more specifically having relatively less of some ability or functioning than is typical or assumed to be the norm. However, unlike naturalistic accounts such as the normal functioning account, the relevant norms are defined relative to social and/or environmental context, and so whether you are disabled depends not only on your body, but also on your social environment. According to the contextual functioning approach, then, a person is disabled if they are unable to function in ways that are, or are taken as, normal, default or typical within a social context or environment. This family of views includes Jenkins and Webster's concept of marginalised functioning (Jenkins and Webster 2021) and Campbell and Wasserman's complex typical functioning account (Campbell and Wasserman, 2020). In the next section, I will set out a third view of this type, which I call the salient limitations account. In the rest of this section, I will explore the above-mentioned views in more detail. It's not my intention to argue that these other two accounts are wrong and my account is right. The three accounts are similar in many ways, but each one gives us a slightly different angle on disability, and each of those perspectives is useful in different ways. It may be that, as Jenkins (2016) argues with respect to gender, we need multiple concepts of disability because no single concept can do all of the work we want it to do.

5.2.1 Jenkins and Webster on Marginalised Functioning

Katharine Jenkins and Aness Webster introduce the concept of marginalised functioning. A person has marginalised functioning if they are unable to function in ways that are assumed to be the default within the relevant set of social norms. One of these norms, for example, is that people can climb stairs. Since our social norms assume that people can climb stairs, as shown by the fact that buildings often have stairs but not ramps, and wheelchair users cannot climb stairs, wheelchair users have marginalised functioning. Some buildings do have ramps, of course, but these are typically conceptualised as special accommodations, so climbing stairs remains the expected default way of navigating between floors (Jenkins and Webster 2021).

Jenkins and Webster use this concept to develop three models of disability. The account I will defend is most similar to what they call the simple model, which holds that disability is marginalised functioning (ibid, pp. 743-744). Before going any further, I shall address the other two models they propose. Their revised social model equates marginalised functioning with impairment, and so disability is the discrimination faced by people with marginalised functioning (ibid, p. 744-745). This model is an improvement on the traditional social model, since it provides a clear, unified explanation of what impairment is, and recognises that what counts as impairment is in part socially determined. However, a social model-style impairment/disability distinction is unnecessary because the concept of marginalised functioning, and the simple model which equates it with disability, already incorporates both the bodily and social aspects of disability. The impairment/disability distinction adds an extra unnecessary layer of complication (Barnes 2018). On this model, it may be difficult to determine which social practices contribute to impairment and which ones contribute to disability. The existence of indeterminate or borderline cases does not necessarily prevent a distinction from being useful, but in this case there is relatively little benefit in working out how the distinction should be drawn. And if we want to separate marginalised functioning itself from the oppression or discrimination faced by people with marginalised functioning, the concept of ableism already captures the latter. However, it's important to note that the account I will develop is an answer to the question "which traits or properties count as disabilities (or impairments)?" It does not necessarily fully answer the question "who counts (or should count) as disabled?" It may be that having at least one impairment/disability is both necessary and sufficient for being a disabled person, but my account is also compatible with views on which the relationship between these two questions is more complicated. And although I don't think we need an impairment/disability distinction of the sort proposed within the social model, my account is compatible with such a distinction, although it would be an account of impairment rather than disability.

Their final model, the restricted model, equates impairment with marginalised functioning, as does their revised social model, but equates disability with lasting marginalised functioning. This model is intended to fix some of the counterexamples faced by the simple model. Pregnant people, and people who are using a wheelchair because of a broken leg, have marginalised functioning, but we might not want to classify them as disabled. A person who expects to use a wheelchair for the rest of their life has a more weighty interest in having ramps added to public buildings than does someone who expects to stop using a wheelchair in a month, and so people with lasting marginalised functioning form a significant social kind, around which it makes sense to build a movement. (Jenkins and Webster 2021, pp. 745-746) One reason to say that people with temporary marginalised functioning are not disabled is that they have not experienced lifelong patterns of ableist oppression. However, the same is true of those who have recently become disabled.

Notice, also, that much of what can be said about the duration of one's marginalised functioning can also be said about its severity and stability. A person who always uses a wheelchair has a greater interest in ramp access than does someone who uses a wheelchair some of the time but can walk short distances. Just as people with lasting marginalised functioning have a greater interest in accessible design than do people with temporary marginalised functioning, people who can never function in line with a default social norm have a greater interest in accessibility than do those who can function in line with that norm to some degree, or at certain times or under certain conditions. Consider their example of a person who cannot visit an inaccessible museum because they are currently using a wheelchair. However, their use of the wheelchair is temporary; they have a broken leg from which they expect to recover soon. They do not have the same interest in accessibility as does a person who must always use a wheelchair. The person who is temporarily using a wheelchair can always wait until their broken leg has healed and visit the museum then. Compare this with a person who uses a wheelchair some of the time, due to a fluctuating impairment. This person can visit the museum on a day when they are able to walk. Admittedly this case is not exactly the same as the case of a person with temporary marginalised functioning; fluctuating conditions can be hard to predict, so it might be difficult to plan a visit. However, it’s not my intention to say that there’s no difference between temporary and fluctuating impairments; I am arguing, rather, that the difference is not significant enough to justify putting people with lasting marginalised functioning into a separate, discrete category.

As I will discuss later, disability is on a continuum. There is no specific threshold at which having less vision than is (assumed to be) typical becomes a disability; instead, 20/200 vision is more of a disability than 20/70 vision. Those who wish to incorporate duration into their model of disability should say something similar. Rather than distinguishing between impairment, i.e. marginalised functioning and disability, i.e. lasting marginalised functioning, it would be better to say that the more long-lasting the marginalised functioning, the greater the disability. I do not find this idea implausible, but I will not explore its implications any further.

I also do not find the contrary idea implausible: that one can be temporarily disabled, and so one's membership of the relevant social category can change. My interest in developing a model that links together disability and enhancement provides me some additional reasons to embrace this view. Firstly, some enhancements provide only a temporary boost in performance. If one can be temporarily enhanced, it makes sense to at least be open to the possibility that one can be temporarily disabled. Secondly, as biotechnology develops, it may become easier to remove impairments. Yet some people value their impairments and would not remove them even if the cure came in the form of a risk-free magic pill. These people would have lasting impairments by choice. It might be tempting to say that such a person is not disabled; they could always take the cure, and then they would be able to access the museum. But I want to say that they are under no obligation to take the cure, and that they have a right to accessible provision just as do those whose impairments are involuntary. That seems to speak against putting them in a separate category.

The simple model, which equates disability with marginalised functioning, might not be entirely in competition with the salient limitations account I will propose in section 3, and the two accounts may even be able to illuminate each other in useful ways. For instance, the concept of marginalised functioning is helpful in clarifying what exactly it means to describe a limitation as socially salient. The concept of limitations, in turn, might provide a partial explanation for why some ways of functioning that deviate from the norm come to be marginalised, while others do not. Presumably, some of the factors that cause some ways of functioning and not others to be marginalised are purely social, having little to do with what our bodies are like. But it's also the case that unusual limitations often become instances of marginalised functioning, but unusual capacities do not. Even if not all cases of marginalised functioning are best understood as limitations, the asymmetries between limitations and capacities are important. Recall my point from chapter 2 that Garland-Thomson's concept of misfitting can apply to disabilities but would not apply to capacities enhanced above the norm. A similar point applies here: a person might be unable to function in line with the dominant norms because they have an unusual (or socially salient) limitation but having an unusual capacity wouldn't make a person unable to function in line with these norms.

5.2.2 Campbell and Wasserman's Typical Functioning Account

Stephen Campbell and David Wasserman define disability as "a capacity to achieve a given outcome through a given mode of action or function in a given environment at a level significantly *below* what is typical for one’s kind." (Campbell and wasserman 2020, p. 571). Their account has been specifically designed as a symmetrical model which places disability and enhancement as opposing concepts, and so they define enhancement as "a capacity to achieve a given outcome through a given mode of action or function in a given environment at a level significantly *above* what is typical for one’s kind." (Ibid). Unlike most of the literature, this account conceives of enhancements as traits, rather than technologies or processes. On most accounts, an enhanced person would be a person who has used an enhancing technology; on Campbell and Wasserman's account, one can be enhanced without having used any particular technology. Since disability and enhancement are defined relative to mode, outcome and environment, nobody can be described simply as disabled or enhanced. We are perhaps all disabled, and enhanced, in different ways, although it is not possible to be simultaneously disabled and enhanced in exactly the same respect.

This is a fine-grained account, intended to address the worry that it might not make sense to define capacities in very general terms. General capacities such as sight or mathematical ability are, Campbell and Wasserman argue, made up of more specific capacities which might not contribute to the more general capacity in a straightforward, additive way. Instead, an enhancement in one of these more specific capacities might produce a disability in another capacity. (ibid, pp. 569-570). I would suggest that it matters whether observed tradeoffs of this sort are inherent to the traits in question, or whether they are produced by contingent factors such as limitations of current technologies, i.e. current enhancement technologies tend to increase one specific capacity while decreasing another, but in the future it might be possible to develop enhancements that can increase the general capacity. If the latter, then it still makes sense to talk of general capacities, because we have a practical reason for asking whether such capacities should be increased. My account does operate on the idea that we can talk of general capacities, but this does not mean I think there are no cases of tradeoffs that are inherent to the traits in question. It's just that these won't necessarily count as disabilities on my account.

The focus on very specific capacities means that disability and enhancement will be very broad categories. Most personality traits, for instance, would probably count as disabilities, or enhancements, or perhaps both in different respects or in different contexts. Campbell and Wasserman acknowledge that their account is revisionary in this way, that on their view most people can claim to have disabilities, and that their account includes as disabilities traits normally thought too trivial to deserve that label (ibid, pp. 573-574). But the account would still include traits not normally thought of as disabilities even if we modified it so it was restricted to what Campbell and Stramondo (2017) call high-impact traits, or to those that figure prominently in people's identities. Some people, for instance, strongly identify as introverts, and introversion could plausibly count as a disability (Or an enhancement) in some contexts. I do not take this, in and of itself, to be an objection to the account. I think we should be open to surprises about what does or doesn't count as a disability. The question, rather, is whether such a broad category is likely to be useful. Take, for instance, the question of well-being. Campbell and Wasserman suggest, and I agree, that the relationship between disability or enhancement and well-being is complex, and that we cannot assume that disability necessarily reduces well-being, or that enhancement increases well-being. Nevertheless, it might be useful to ask whether there is any general tendency for disability to reduce well-being, or for enhancement to increase it, even if there are many exceptions. The typical functioning account might not be helpful in answering this question since very little can be said about disability or enhancement in general. That doesn't count as a reason to reject the account entirely; its fine-grained nature might make it useful in other contexts.

An important limitation of this account is that it might not fully capture the social dimension of disability. While it does make disability relative to environment, it does not capture the specific social consequences of having a disability. Campbell and Wasserman's account of enhancement is exactly the same as their account of disability, except that enhancements are abilities above rather than below what is typical. But as already discussed at the end of the section on marginalised functioning, and as will be discussed in further detail later in this chapter, the social consequences of being above and below typical functioning are very different.

5.3 Disability as Socially Salient Limitation

I will now develop a third type of contextual functioning account, according to which disabilities are limitations made salient within a social context. I will first explore the idea of limitations, then social salience. I will then compare this account with the other two contextual functioning accounts.

5.3.1 Limitations

We all have physical and cognitive limitations. Here I am specifically referring to limitations of the body or mind, rather than those that are more clearly socially imposed such as the ways the law can limit our freedom. Some limitations are universal to all humans, such as the inability to fly, and some apply only to some, such as the inability to walk. Some limitations have a significant impact on our lives, perhaps including the ones already mentioned, and some are quite trivial. It's physically impossible to lick your own elbow. That's a clear case of a limitation, although it's one that few people would care about.

I want to suggest that disabilities are limitations, i.e, being a limitation of the body or mind is necessary but not sufficient for a characteristic to count as a disability. The term 'limitation', as I'm using it, does not merely refer to entirely lacking an ability or capacity. Being entirely unable to walk is a limitation, but so too is being able to walk only at certain speeds or for certain distances, or on some days but not others. Being entirely unable to see is a limitation, but so too is having good vision only under certain lighting conditions, or having enough sight to read text in large fonts but not smaller fonts. The account can thus accommodate the fact that capacities may fluctuate, or change depending on environmental conditions, and that many disabilities come in differing levels of severity.

The concept of limitation being used here should not be confused with the idea that a disability is defined as a characteristic that limits one’s ability to carry out daily tasks. Whether one is limited in such activities, and what we would put in the category of 'daily tasks', often depends at least as much on societal factors as on one’s physical and mental capacities, whereas what counts as a limitation, as I use the term, does not depend on society in quite the same way. I don't mean to suggest that limitations are not socially constructed at all. Clearly, they can be causally constructed: poverty leading to malnutrition, or lack of resources for road safety leading to high numbers of traffic accidents, which in turn causes certain bodily characteristics which would count as limitations. In addition, what counts as a limitation, as I'm using the term, depends on what counts as part of the body or mind. I will explore this thought in more detail later, but for now I want to note that the account does not depend on any particular view about this. It simply says that disabilities are limitations of the body or mind, whatever the body and the mind are. It also does not presuppose anything about the relationship between the two. Some authors within critical disability studies use the term ‘bodymind’ to indicate that body and mind are significantly intertwined (See Price 2015). For those who prefer this approach, disability can be understood as bodymind limitation. I don't claim to have engaged with the bodymind concept in any depth, but as far as I am aware, nothing about my account is contrary to it.

Suggesting that disabilities are limitations does not, by itself, entail that disabilities are bad in any way. A limitation needn't be a flaw, a defect, or a way of being broken. And while limitations can be sources of suffering, suffering and limitation are not the same. Schroeder (2015) suggests two primary ways in which diseases and disabilities can affect us: they can cause pain and other negative phenomenological states, or they can place limitations on our capabilities. Schroeder argues that, while pain and distress reduce well-being most of the time (and always do, on some theories of well-being) the relationship between limitations and well-being is much more contingent. Limitations might preclude valuable options, but this need not reduce well-being if the person can find equally valuable substitutes. I think this is correct, and it provides a good reason to separate states that primarily cause limitations from states that primarily cause pain and suffering. It might be objected that pain and limitation cannot so easily be separated in practice. Some conditions cause both pain and limitations, and sometimes limitations are the result of pain, as is the case, for example, for a person who cannot walk very far because walking is painful. But it can nevertheless be useful to keep them conceptually separate. Perhaps you don't mind being unable to walk, but you do dislike the pain you experience when you attempt to do so. If so, that might be a reason to always use a wheelchair rather than trying to walk, even if walking is painful only some of the time. Or if the pain associated with your condition is less easily avoidable, you might seek out medical treatments that will end the pain, but actively want to keep the limitations.

I have been suggesting that limitations do not have the same straightforwardly detrimental impact on well-being as do states that directly cause pain or distress, and that it is worth distinguishing between these two categories for that reason. But I also want to suggest that limitations can be bad for us in ways that other traits are not. Limitations, as already mentioned, tend to reduce options. That does not lead to an automatic reduction in well-being by any means, but states that reduce options are more likely to reduce well-being as compared to states that increase options, leave one's options unchanged, or open up as many valuable options as they close off. I will argue for this in detail in the next chapter.

If this normative view is right, then limitations are in a middle ground: they do not have the relatively straightforward negative impact on well-being had by bodily and mental states that directly cause suffering, but nor are they entirely neutral or positive. This normative view can come apart from the conceptual view being defended here, but it does provide a justification for why we might find the category of limitations interesting and useful.

The unification this offers does, however, have the consequence that some paradigm disabilities might not count as disabilities on my account. If it's not best understood as a limitation, it won't count as a disability. This might be the case, for instance, for the conditions within the purview of the neurodiversity movement. I suspect that, if most people were autistic, and if the social world was set up in the ways that work best for the autistic majority, the non-autistic minority would face difficulties similar to, or roughly the opposite of, the difficulties faced by autistic people in the current world. We often think of autism as a relative lack of ability to interpret social situations or other people's mental states, but there's actually empirical evidence suggesting that neurotypical people have difficulty interpreting the mental states of autistic people (Edey et al. 2016; Sheppard et al. 2016). If what I have just said about autism is right, then autism is not a disability; autism is no more of a limitation than is being neurotypical. [51]

Some might worry that the same could be said of all of the characteristics we call disabilities: any disability comes with capacities, and so is not only or primarily a limitation. Think of the blind or deaf person who learns to make better use of the senses they have. Has this person not developed capacities they wouldn't have had without their sensory limitations? Blind and deaf people certainly use different modes of functioning than their sighted and hearing counterparts, and often do so with greater skill, but this skill comes from practice. The limitation makes practice necessary, but the increased skill is not an automatic result of the limitation. A newly blind person will be no better at using their senses of hearing and touch than they were when they were sighted. Suppose that a sighted person, accustomed to the world as it is now, goes to live in a world where everything has been adapted for blind people. Information is always presented in Braille or audio, and never through visual means such as printed text. A sighted person in this scenario might at first struggle to adapt, but they could eventually learn the necessary skills. The same is not true of a blind person in a world where everything is visual, where alternative modes of functioning are unavailable. An environment that requires the use of vision is inaccessible to blind people, but an environment set up for blind people is not inaccessible to sighted people.

I want to suggest, however, that if we lived in a world where everybody was either blind or deaf, neither blindness nor deafness would count as a disability, since this scenario would be more symmetrical. Creating a world that worked for everyone would require us to attend to the needs of both groups. We would need to either create an environment in which the predominant modes of functioning require neither sight nor hearing, or in which

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[51] Or rather, not everything that gets diagnosed as autism counts as a disability; it might be that some of the states normally understood as types of autism count as disabilities, while others do not (Wakefield, Wasserman and Conrad 2020).

each group can use the modes of functioning that work best for them. Neither group could be expected to adapt to the modes of functioning that work best for the other group. An environment that is accessible to blind people is not necessarily accessible to deaf people and vice-versa.

With this final point, I have begun to explore the social dimension of disability, to which I turn explicitly in the next section.

5.3.2 Social Salience

All disabilities are limitations, on my view, but not all limitations are disabilities. Being unable to walk and being unable to fly are both limitations, but we usually think the former is a disability, while the latter is not. Is this difference justified? If so, what explains it?

A first attempt to answer these questions might be that disabilities are limitations most people don't have. This is a partial answer, but I don't think we should classify all limitations most people don't have as disabilities. Some limitations most people don't have are trivial. Even if, for example, you can't extend your tongue as far as most people can, this is unlikely to be something many people would care about. The relevant capacity plays no important role in our social practices, so that limitation will usually not be very noticeable. For a limitation to count as a disability, then, it needs to hold some significance. [52]

My suggestion is that disabilities are limitations made salient by the social context. What makes a limitation socially salient? In answer to that question, I would point to the familiar examples given in discussions of social constructionist accounts of disability: buildings having stairs but no ramps on the assumption that people can walk, information being presented in formats that assume people can see, government or health information being written in ways that assume certain cognitive capacities, or workplaces and educational institutions organising activities in ways that assume people can continue working for a certain length of time without a break. Social practices make these limitations salient in that they are not taken as normal or default, so they tend to become more noticeable and are marked out as different. Some limitations may not always be immediately apparent, but may still become salient because, for example, your friends or employers don't take into

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[52] I borrow this example from Kahane and Savulescu (2009).

account the limits to how much you can do before becoming fatigued, and they don’t have the same limitation to the same extent themselves, so your need for more frequent breaks stands out.

By contrast, other limitations, those that would not count as disability on this account, are taken for granted as normal and unremarkable. Whereas being unable to walk is a disability because we live in a world where most people can walk and it is expected that you can walk, being unable to fly doesn’t make you disabled because all of the people around you are also unable to fly, and you do not live in a world where flying is expected. Even when we use tools or social arrangements to meet the needs arising from these limitations, this is taken as entirely unremarkable and often not really noticed. Consider, as an example, how normal it seems to use your phone to store contact details, appointment reminders, and other information on your phone, as a way to accommodate the limitations of your memory. We don't normally think that, if you use your phone in these ways, you are using it as an assistive technology. Tremain helpfully explains the contrast I have in mind:

> [T]he requirements of a certain group of people are taken for granted and naturalized as "normal," regular, and typical, the preferential allocation of resources for which is rendered invisible precisely insofar as these requirements are considered "standard" and basic. ... [T]he requirements of certain other people are "special needs," idiosyncratic, and extraordinary, the allocation of resources to which is supererogatory and supplementary, [and] regarded as "accommodation" (Tremain 2017, p. 30).

In deciding whether any given characteristic counts as a disability, then, the extent to which it can be considered a limitation of the body or mind, the rarity of that limitation, and the extent to which social practices make the limitation salient by, for example, assuming that most people do not have that limitation, all contribute to making it a disability. There is no precise threshold that separates disabilities from characteristics that are not disabilities, or disabled people from non-disabled people.

As with the other accounts in the contextual functioning family, what counts as disability will depend on what we take to be the relevant context. Jenkins and Webster (2021) provide an example of a Deaf person who does not have marginalised functioning with respect to Deaf culture but does have marginalised functioning with respect to the city where she lives. My account can say something similar: the limitation of deafness is socially salient within the city but is not socially salient within Deaf culture.

The context might also change as enhancement technologies develop and become more widespread. If ever more people use ever more radical enhancements, so that the average levels of various capacities within the population increase, society may change to reflect these developments. If this happened, traits which we now understand as normal human limitations, which we take for granted as unremarkable, may come to count as disabilities. If, for example, cognitive enhancement becomes widespread, society might change to take advantage of that, so the limitations of those with what we now consider normal cognitive ability will become salient, making them disabled. For example, jobs may require a level of cognitive ability that, for most people, can only be achieved through enhancement. The education system may change so that schools challenge the enhanced majority, leaving the unenhanced behind. Even ordinary communication and leisure pursuits may change to reflect the abilities of the enhanced majority. If this happened, those who we would now consider to have normal cognitive capabilities would be in a similar position as are those with cognitive disabilities in our current society. [53]

I do want to insist, however, that disability should be defined relative to the *social* context in particular, rather than relative to the physical environment. This distinction can be illustrated by posing the question: If we moved to a different planet and had to use special equipment to breathe, would we all then count as disabled? In one sense, our inability to breathe in certain atmospheres would have become much more salient, i.e. it would be much more obvious and apparent. Nevertheless, I would suggest that this would not make everybody disabled, because it would not make our limitations socially salient in the right way; we would still be assuming that everybody has those limitations. Our needs for special equipment would probably soon become no more remarkable than the needs arising from the limitations we take for granted now. If we define it broadly enough, our physical environment is already not set up for human limitations. Most of the earth's surface is covered in water, yet we cannot breathe under water. The other planets in the solar system

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[53] Gregor Wolbring makes a similar point but thinks that in the scenario where unenhanced traits become disabilities, human abilities will not be distributed on a bell curve; instead, there will be a sharper divide between those who have used enhancement technologies and those who have not (Wolbring 2008).

are not suitable for human habitation. Yet these facts about our physical environment do not make us disabled. Some physical features of the environment do contribute to making limitations into disabilities, including, as already mentioned, the presence of stairs rather than ramps. But these physical structures contribute to disability because of the role they play in the social world. If, by contrast, we lived in an interplanetary society where most people had used body modifications that allowed them to live on any one of a number of planets, it would make sense to describe those without such modifications as disabled, and to say that other planets are inaccessible to those people. [54]

A variety of social practices can create disabilities. Although discrimination through lack of accommodation is one thing that can make a limitation into a disability, it is not the only factor, because the social arrangements that make for disability are not necessarily entirely bad or unjust. As I argued in chapter 2, some of what is bad about disability stems from its statistical atypicality, and the development of social practices that depend on capacities most people have. These are not ways in which disabilities are intrinsically bad, but nor are they always obviously unjust. This is not to deny the role of discrimination. Undoubtedly many social practices are ableist, but this model does not assume all of them are. This account, then, does not hold that all of the social aspects of disability are unjust, although many of them certainly are. In this way, it can avoid the problem of having to sharply distinguish between the effects of ableism and those aspects or effects of disability that are not clearly ableist.

It might nevertheless be objected that my account does require us to sharply distinguish between the biological and social aspects of disability since, to determine whether a property is a disability, we need to know whether it is a limitation. Limitations, as I have defined them, are properties of the body or mind. Yet as mentioned in the discussion of assistive and curative technologies in the previous chapter, there is disagreement about what it takes for a technology to be incorporated into the body. If we don't know whether a technology that a disabled person is using has been incorporated into the body, we don't know whether to classify it as an external tool they're using as an accommodation for a limitation they still have, or as something that has become part of their body, thereby removing the limitation. If a person uses prosthetic legs that provide as much functionality as do fleshly legs, it would be reasonable to say that these prostheses have become part of

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[54] For more on disability in the context of space exploration, see Schwartz (2020).

the body, and so the person no longer has the limitation. But even if you want to say that these prostheses are importantly separate from the body, it would still make sense to say that the person is no longer disabled, because the limitation is no longer salient in the right way. It might be that people who use these prosthetic legs are stigmatised, but not all stigmatised traits, and not all socially salient traits, are disabilities. For a trait to count as a disability, it must be the limitation itself, that is, the inability or relative lack of ability to function in particular ways, that is socially salient. If it seems counterintuitive to say that being stigmatised for using prostheses does not by itself make a person disabled, compare this example with typical attitudes towards glasses. If your level of vision is such that, without glasses, you would be classified as having a visual impairment, but your glasses bring your vision into what is taken to be the normal range, it's reasonable to say that, because of your glasses, your visual condition is not a disability. Either your glasses are incorporated into your body, in which case they remove your visual limitation, or they are separate from your body, in which case your limitation is not salient.

None of this answers the question whether, in these cases, the person still has the limitation. But depending on why we want to concept of limitations, answering that question might not be important. If we are using it primarily as a way to unify the category of disability, because limitations tend to have certain features in common relating to, for instance, their impact on well-being, answering that question does not matter. We already know that some limitations are trivial and so neither good nor bad. So, in these cases, either the person has a trivial limitation, which does not impact their well-being, or the limitation does not impact their well-being because they do not have it.

5.3.3 Comparison with Other Contextual Functioning Accounts

I think the account I have been developing is useful, but I don't want to suggest that it's the single, objectively correct theory of disability. It might not be able to do everything we want a theory of disability to do, and in those cases it may need to be supplemented with other theories of disability.

I now want to use an example from fiction to illustrate how my account differs from the other two contextual functioning accounts.

In *The Galaxy, and the Ground Within*, the fourth and final novel in the Wayfarers series by Becky Chambers, it's widely assumed within the galaxy that all sapient species breathe oxygen. But the Akarak are a methane-breathing species for whom oxygen is fatal, and so in environments where other species live they must wear specialised suits. The Galactic Commons, the authorities within the galaxy have not granted them a planet on which to settle and are refusing to work with a species whose bodily differences they find difficult to accommodate (Chambers 2021). In many respects, this is strikingly similar to real-world cases of ableism. [55] Are the Akarak disabled according to the contextual functioning approach? The answer to that question will depend both on which of the three accounts we adopt, and on what we take to be the relevant context.

On the marginalised functioning account, the Akarak would probably count as disabled with respect to galactic society. There is a social norm within the galaxy that sapients can breathe oxygen, the Akarak cannot function in line with this norm, and so the Akarak have marginalised functioning. This is enough to make them disabled according to the simple model. It seems fair to say they are oppressed on the basis of their marginalised functioning, given their treatment by the Galactic Commons, so they would also count as disabled according to the revised social model. And since their inability to breathe oxygen lasts for the entirety of their lives, they would be disabled according to the restricted model.

On the typical functioning account, whether an Akarak's inability to breathe oxygen is a disability depends on what we take to be the relevant kind. If the species is the relevant kind, it is not a disability. But if the relevant kind is sapients within the galaxy, then the Akarak are disabled with respect to their ability to breathe within oxygen-rich environments. They are also enhanced with respect to their ability to breathe within methane-rich environments.

On the salient limitations account, the Akarak wouldn't quite count as disabled. Although the Akarak's inability to breathe oxygen is not shared by the other species in the galaxy, the scenario lacks the asymmetrical character of other cases of disability. Unlike other cases of disability, the scenario could easily be reversed. If the majority of species breathed methane but there was one species that breathed oxygen, the oxygen-breathing species might well find themselves in the same situation as do the Akarak in the original story. Methane is just as toxic to other species as oxygen is to the Akarak, so any environment

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[55] The scenario also has important parallels with some forms of racist oppression, although I won’t explore that here.

that works for the Akarak would not work for other species. If the Galactic Commons decided to meet the needs of the Akarak, they couldn't do so by making all planets accessible to them. The Akarak will always require different environments than do the other species, unless one or the other group wears suits that allow them to breathe. By contrast, if the other species could breathe either oxygen or methane but the Akarak could only breathe methane, the Akarak would count as disabled, and an accessible planet for the Akarak would be an accessible planet for everyone.

Understanding these differences can help us to better understand the purpose of each of these three accounts. The typical functioning account is fine-grained enough to recognise that the very same property could count as a disability in one respect but an enhancement in a different respect. This makes it particularly good at handling cases where there are tradeoffs between different capacities, where increasing one capacity decreases another. However, it counts even trivial properties as disabilities or enhancements. It does not distinguish between those disabilities (or enhancements) that are socially significant and those that are not. Both the marginalised functioning account and the salient limitations account recognise that there is something important about the social norms within a given context. Each of these accounts is useful in different ways when thinking about how to make accessibility provisions. The marginalised functioning account tells us that disabled people are unable to function in line with the default norms within a society. This implies that, to make the world more accessible, disabled people will require alternative modes of functioning. The salient limitations account does something similar, but also draws attention to the asymmetry between disability and non-disability. While disabled people have limitations that make it difficult or impossible to function in default or typical ways, non-disabled people *can* function in ways typical of disabled people, although functioning competently in these ways might take some practice. To put it simply, non-disabled people have more modes of functioning available to them. This implies that, if the world is accessible to disabled people, it will also be accessible to non-disabled people.

5.4 A Corresponding Account of Enhancement

Now that I have proposed an account of disability, I want to develop an account of enhancement in relation to it. I have already suggested the very general idea that disability and enhancement are at opposite ends of a continuum. This would mean that, since disability is understood in terms of limitation, enhancement is understood in terms of capacity. I will now consider three possible ways of using this general idea to develop an account of enhancement that complements my account of disability.

5.4.1 Enhancement as Socially Salient Capacity

One proposal would be to try to create a symmetrical account in the style of Campbell and Wasserman (2020), where an enhancement is the opposite of a disability. Since my account defines disabilities as socially salient limitations, enhancement would correspondingly be defined as socially salient capacities or abilities. As with Campbell and Wasserman's account, an enhancement would be a trait, characteristic or property of the person, rather than a process or intervention that changes a person's traits. This would imply that a person could be enhanced without having ever used an enhancement technology.

What would it mean to describe a capacity or ability as socially salient? Since we're trying to create a symmetrical account, we want the idea of socially salient capacities to be as similar as possible to the idea of socially salient limitations. So we might say that a socially salient capacity is one that most people do not have, that stands out or is marked out as different. As with limitations, some capacities are assumed to be had by everyone, and are therefore unnoticed, whereas others are taken as more remarkable. Candidates for socially salient capacities might be the sorts of abilities we would normally understand as talents: perhaps unusual sporting or musical ability, for instance.

The crucial problem with this account becomes apparent when we notice that it is not quite as symmetrical as it seems. It's doubtful that socially salient capacities are parallel or analogous to socially salient limitations in any meaningful way, or even that social salience can be cashed out in a way that would be applicable to both limitations and capacities. When a limitation becomes socially salient, it often becomes more disadvantageous than it otherwise would be. It's not normally the case that when a capacity becomes socially salient, it becomes more advantageous than it otherwise would be. One might argue that, when a capacity is marked out as different or unusual, it can command a higher market value than can more common capacities. People are willing to pay more for work that engages socially salient capacities than for work that only engages capacities taken as unremarkable. But even if this is the case, it's a very narrow set of circumstances as compared to the ways in which socially salient limitations are disadvantageous. If you have a socially salient capacity, you will only experience this advantage if you engage in work that requires or uses those capacities. By contrast, the disadvantages associated with socially salient limitations are much harder to escape.

Nor are socially salient capacities disadvantageous in the same ways as are socially salient limitations. A key aspect of what it means to describe a limitation as socially salient is that the social environment is set up on the assumption that most people do not have that limitation.

To illustrate this, I return to the comparison between walking and flying. I suggested that what makes being unable to walk into a disability is that physical and social environments are set up in a way that assumes people can walk. Would it be right to say that physical and social environments are set up in a way that assumes people cannot fly? I think not. If you cannot walk, you will often find that buildings and physical spaces are not designed with your needs in mind. If there was a small number of humans who could fly, and you were among them, this would not prevent you from accessing the physical environment. You would still have the option of accessing physical spaces in the same ways as people who cannot fly.

Of course, it's possible that, if there was a minority of people who could fly, the ability to fly would be stigmatised or pathologised. Indeed, exactly this scenario is described in Ursula K. Le Guin's short story 'The Fliers of Gy' (in Le Guin 2003). About 1 in 1000 of the people of Gy develop the ability to fly. At the age of 18 or 19, the body begins to change and the wings develop. This happens to people at random; the children of fliers are no more likely to develop wings than are the children of nonfliers. You might expect that becoming a flier would be a cause for celebration, but parents and their adolescent children dread the development of wings. Wings are prone to sudden, inexplicable failure. This, too, seems to be random, at least no causes or patterns have been found, and so wing failure cannot be predicted. One person's wings might fail on the first attempt to fly, another might fly every day for decades without a problem. After the wings have failed once, they can never be used again, so the person must then live on the ground. Some of the winged people, not wanting the risk, never attempt to fly at all, keeping their wings bound so that they will be out of the way. Yet the bone structure of winged people is not suited to life on the ground. They tire easily, are prone to injuries, and tend to die early.

Le Guin presents an interesting and complex case in this story. Although the people of Gy consider fliers disabled, I don't think they would count as disabled on my account, since their ability to fly gives them an extra capacity. But nor does this seem like a case of enhancement, understood as salient capacity. That's partly for the analogous reason: the changed bodies of fliers have limitations that become apparent when they live on the ground, such as the limits to what they can do due to fatigue. But what about an alternative version of the story where fliers do not have any limitations they don't share with nonfliers? Let's say, for instance, that everybody develops wings, but only a minority have wings that actually work. Just as in Le Guin's original story, the people who have the ability to fly are stigmatised. Even if we want to describe this as salient capacity, it doesn't work in quite the same way as salient limitation. Fliers might be excluded from society in various ways, but if social practices and institutions are designed in ways that don't take into account that some people can fly, this does not put fliers at a disadvantage. Fliers, in this alternative version of the story, are just as capable of walking as are nonfliers.

The same point applies in the real world. People with sporting or musical talents might have unusual abilities, and we do not normally assume that most people have these abilities. However, the fact that social environments are not set up with the assumption that most people can play the piano does not prevent virtuoso pianists from navigating the social world. Having a capacity that is not taken into account in the design of social institutions and environments does not put you at a disadvantage, because you can always function in ways that don't require the use of your extra capacities. But nor do they come with advantages that parallel the disadvantages of disability. However we understand the idea of social salience, then, and whether socially salient capacities are supposed to be advantageous or disadvantageous, they don't seem to parallel disability in any meaningful way. The account, then is not really symmetrical, and that was supposed to be its key advantage.

5.4.2 Enhancement as Removal of Limitations Other than Disability

Since it's difficult to create a symmetrical account on which enhancements, like disabilities, are traits or properties, I will now turn to accounts that retain the more standard view that an enhancement is a process or intervention. Perhaps we should regard interventions that lessen or remove disabilities, as I have defined them, as treatments, and interventions that lessen or remove limitations that are not disabilities as enhancements. This would resemble the view of the treatment/enhancement distinction endorsed by

Daniels (2000) except that the line between treatment and enhancement would vary with social context. Although this is an improvement on the naturalistic account of that distinction, it might be less of a departure from Daniels than it seems, since he already acknowledges that we might have to allocate resources such that the most socially important diseases take priority.

The socially variable nature of this way of drawing the distinction can also create problems with looping effects. To illustrate, I borrow an example from Tremain (2001). Tremain discusses the form for claiming DLA, which was the UK's disability benefit at the time of her article. This form asked claimants to describe in detail their experiences of impairment. Tremain argues, however, that this process did not merely *identify* people with impairments but contributed towards creating them. She does not mean that it caused people to have physical or psychological properties that we classify as impairment, but rather that it changed social reality so that some people came to be categorised as people with impairments. My worry is that something similar would happen with this version of the treatment/enhancement distinction: the thought that removal of some limitations counts as treatment, whereas the removal of others counts as enhancement, might make the former socially salient, and so it would contribute to making those limitations into disabilities. Putting this version of the distinction into policy, or having it informally circulating in broader culture, might create the very divisions it purports to merely describe. I have already discussed how limitations that are not disabilities are taken as parts of the human experience that must be accepted, whereas disabilities are taken as special cases in need of accommodation or cure. If we accept the idea that, for instance, removing socially salient visual limitations counts as treatment whereas removing other visual limitations counts as enhancement, and that there is a morally significant difference between these two cases, this reinforces the idea that socially salient visual limitations, i.e. visual impairments, are special cases in need of accommodation. This, in turn, makes them more socially salient in the sense I have been using the term. Perhaps not all looping effects are problematic, and perhaps not all the features of the social world that turn limitations into disability are undesirable, so one might wonder whether it would necessarily be bad if such looping effects did occur. But if not all circumstances that make limitations into disabilities are bad, then many — perhaps most — are, so we ought to try to avoid reinforcing them.

A further problem with this account is that it does not draw the distinction in a normatively useful way. I suggested earlier in the chapter that some limitations won't count as disabilities because they are too trivial. If we are distinguishing between, on the one hand, removal of disability, and on the other hand, removal of non-disability limitations, then interventions that remove trivial limitations will count as enhancements, alongside interventions that remove much more significant ones. Whether one considers this a problem will depend on one's view on the moral and political issues. For those who think societies and governments should provide treatments for disability, but shouldn't or needn't provide enhancements, it makes sense to put trivial interventions into the enhancement category. But since I have already argued against that view, I don't want to categorise enhancements in this way.

5.4.3 Enhancement as Adding or Increasing Any Capacity

Perhaps the problems with the previous two accounts can be avoided by moving to a definition on which any increase in capacity would count as an enhancement. This account does not respect the treatment/enhancement distinction. In fact, any disability-removing process would automatically count as an enhancement. This account is the strongest of the three candidates considered. It may seem rather revisionary to define enhancement so that it includes so many interventions ordinarily understood as treatments. In fact, an intervention could count as both a treatment and an enhancement. If it is revisionary, it is at least not unprecedented; the welfarist account has a similar structure. On the welfarist account, disabilities, by definition, reduce well-being, an enhancement is any intervention that increases well-being. Any intervention that removes a disability, understood as a property that reduces well-being, will cause an increase in well-being and so will automatically count as an enhancement. On my account, disabilities are a subset of limitations, and any intervention that removes or lessens a limitation counts as an enhancement. Any intervention that removes a disability, understood as a socially salient limitation, will automatically count as an enhancement.

More importantly, as compared to other accounts considered, this makes enhancement into a more meaningful and useful category. Earp et al. (2014) argue against the sort of capacity-based account I have been defending here, on the grounds that it does not appropriately capture the normative issues. They note, for instance, that diminishment of capacities can sometimes increase well-being. It might be beneficial, for instance, to diminish recall of painful or traumatic memories. I agree that diminution of capacities can sometimes be of benefit. It's easy to think of other cases where it might be desirable to diminish memory. We might want to repeat some pleasurable experience, but as if for the first time, such as forgetting a favourite novel so that we can read it again and be surprised by the plot twists. Or we might want to forget some piece of information we've just been given: a plot spoiler, or the accidental revelation of a surprise birthday party. Contraception, which often improves quality of life, can be understood as the diminution of fertility. There are also cases, though rare, of people who want to become disabled. Transabled people, who are sometimes labelled as having body integrity identity disorder (BIID), have a strong felt need to acquire a specific physical impairment. They may feel as though one of their limbs does not really belong to them, and that they need to have it amputated to feel complete. Alternatively, they may have a need for another disability such as deafness, blindness or paraplegia. If they have not been able to alter their body in the way they need, they may still prefer to live as though they are disabled by, for instance, using a wheelchair (Blom, Hennekam and Denys 2012; First and Fisher 2012). This sense that the body feels wrong and needs to be altered is strikingly similar to the bodily experiences of many transgender people (Baril 2015c; Clare 2017, pp. 175-177).

Don't these examples show that, with respect to the normative issues we really care about, it matters relatively little whether in intervention increases or reduces capacity? In answer to that question, I want to point out an important difference between capacity-increasing enhancements and what one might call diminishments. In the case of capacity increases, we're often quite happy to increase a general capacity, or even something that might be better understood as a set of related capacities. We might be interested in, for instance, improving our memory in general. In the case of diminishments, we often want to reduce something more specific. The cases where diminishment of memory is beneficial don't show that it would be good to be more forgetful in general, and that is not the position for which Earp et al are arguing. The thought, instead, is that we might want to reduce recall of specific memories. With respect to contraception, some people don't want to have children, and either wouldn't mind becoming or actively want to become permanently infertile. But many others want their contraception to be temporary; they don't want to have children at this particular time or with this particular person, but they might want to have children later. In the case of Transabled people, desires for disability tend to be quite specific. Those who want to have a leg amputated, for instance, can usually point out exactly where on their leg the amputation should be (Davis 2012).

To further press this point, consider the different consequences of enhancements and diminishments doing more than intended. If an enhancement increases a capacity beyond the intended level, or gives you an entirely new capacity in addition to the one you wanted to increase, that will often be a bonus. If the extra capacity has no substantial benefits, increasing it would probably strike us as a neutral change. It is less likely, although by no means impossible, that an additional capacity increase would be regrettable. By contrast, if a diminishment does more than intended, if, for instance, you're trying to diminish recall of specific memories and you diminish your capacity for long term memory more generally, or even recall of specific memories other than the intended one, the effects could be inconvenient, unfortunate or even devastating. Many people have a general desire to increase a wide range of their capacities, even if they judge that some capacity increases are not worth the cost or effort required. Very few people, if anybody at all, want to diminish their capacities in general, although some may desire more specific diminishments. This suggests that, as compared to capacity-increasing enhancements, there is a greater need to ensure that diminishments precisely target the intended capacity.

These normative commitments constitute a case for the relative usefulness of this account, but they are not strictly necessary. While the account I am defending here goes particularly well with the normative view I will defend in the next chapter, defining enhancements as interventions that add or increase capacities doesn’t entail anything about their value or tendency to promote well-being. There is, however, an important issue on which this account is definitely not neutral: the treatment/enhancement distinction. Since this account does not uphold that distinction, those who think enhancements differ morally from treatments will not want to adopt it, and that might seem to compromise its usefulness in these debates. This problem is probably unavoidable, at least for accounts that define enhancement in terms of processes or interventions rather than traits. Such an account can either exclude treatment of disorder from its definition of enhancement, or it can define enhancement in a way that does not make reference to that distinction. Since I must choose one or the other, I am choosing to adopt an account that does not respect the distinction.

5.5 Conclusion

I have argued for a family of views that understands disability as a relative lack of ability to function in ways that are, or are taken to be, normal or typical within a given context. More specifically, I have developed my own account within this family, on which disabilities are limitations made salient within a social context. I also considered three different ways in which one might develop an account of enhancement in relation to this conception of disability, ultimately defending the view that enhancements should be understood as interventions that add or increase capacities. On this account, disability-removing processes would be a type of enhancement rather than an entirely separate category.

This account of disability and enhancement categorises the phenomena in ways that accord with normatively useful distinctions. The account does not distinguish between disability-removing processes and enhancement processes because, as argued in chapter 2, this distinction is not normatively significant. The account puts both disabilities and unenhanced traits into a unified category, on the basis that both are limitations, and it makes sense to ask questions about the relationship between limitations in general and well-being. Likewise, although increasing a person's capacities won't always increase their well-being, there is a normatively significant difference between enhancements, which add or increase capacities, and interventions which diminish or remove capacities.

Whichever of the three accounts of enhancement we adopt, the theory, as a combined account of disability and enhancement, has the implication that, as enhancement technologies develop and social practices change in response, traits that were once taken as normal human limitations may come to count as disabilities. Whatever our societal obligations are to disabled people, we will have the same obligations to those whose limitations have become disabilities because they have not used popular enhancements. Since the account understands disability as a combination of bodily and social factors, I would suggest that the best response will involve both making enhancements available and affordable, for those who want to use them, and creating a social environment that, as far as possible, remains accessible to those who do not use them.

As a matter of justice, we have obligations to the unenhanced, just as we have obligations to disabled people. Given that the lack of enhancement can be a disability on my model, failure to meet our obligations to the unenhanced is not merely analogous to ableism but is actually an instance of it.

Chapter 6: Is it Bad to have Limitations?

6.1 Introduction

According to the conception of disability and enhancement I developed in the previous chapter, a disability is a type of limitation, whereas enhancements are interventions that add or increase capacities. Since I'm understanding limitations and capacities as directly opposing concepts, adding or increasing capacities amounts to lessening or removing limitations. Using this approach, we can examine the impact of disability and enhancement on well-being by asking the question: is it bad to have limitations? Answering that question will be the aim of this chapter. More specifically, I will be focusing on two properties of limitations that might affect their impact on well-being. Firstly, limitations tend to reduce a person's available options. This has been extensively explored in the literature on disability. On one side of the debate are those who argue that disability tends to reduce a person's range of available valuable options, which in turn lowers well-being. On the other side are those who argue that a reduction in options caused by disability needn't lead to a reduction in well-being, and who sometimes also suggest that disability can open up additional valuable options. Secondly, limitations create obstacles which can increase the difficulty of achieving any particular goal. This difficulty has been seen as valuable by some critics of enhancement, who argue that enhancing our capacities erodes the value of our achievements.

The chapter will argue that limitations are somewhat bad in general or on average, but there are many cases in which limitations are neutral or good, so preferences to retain or acquire limitations needn't necessarily be irrational or mistaken. The next section provides a more detailed statement of my view, explaining how it compares with views that already exist in the literature. Section 3 focuses on the options debate within the disability literature. I argue that having additional options can be beneficial or neutral, but is less likely to be detrimental, defending this argument against objections which point out ways in which additional options can be harmful. I also argue that it's good to provide more options by increasing capacities for many of the same reasons that it's good to provide options by creating a more accessible society. In section 4, I move on to the achievement debate within the enhancement literature. After explaining why considerations relating to the value of achievement don't provide good reasons against enhancement in general, I argue that some people might value their limitations because of the opportunities for challenge, creativity and problem solving they present.

6.2 Limitations are "Not-Very-Bad"

The view I want to defend consists of two main claims. Firstly, disabilities and other limitations are somewhat bad in general or on average, and so increases in capacity will, in general, tend to increase well-being. This general badness is relevant in contexts where we must make decisions about causing, preventing, or removing disability without knowing the preferences and/or circumstances of the people affected. This would be the case, for instance, when making policy decisions, or when deciding on behalf of young children who have not yet formed their own preferences. It's not necessarily the only relevant factor, so it doesn't conclusively show, for instance, that parents ought to remove disability in their children, but it does provide a reason for preventing or avoiding disability in these cases. It can also explain why we might want to have policies aimed at preventing disability, and can make sense of the fact that most nondisabled people want to avoid becoming disabled, and most disabled people want to avoid becoming more disabled than they already are.

Secondly, what is true in general or on average is not necessarily true in particular cases. In many cases, a disability or other limitation is neutral or even beneficial for the person who has it, and so desires to retain or acquire limitations should not be automatically judged as irrational or mistaken. The general badness of disability shouldn't lead us to conclude that, if someone claims not to have been made worse off by their disability, they must be making a mistake. A person describing the effect of disability on their own life is doing so with knowledge of their own preferences and circumstances, and so the general badness of disability is less relevant. Nor should we expect happily disabled people to be rare anomalies. Our preferences are shaped by our circumstances and life experiences, including experiences of disability. And while some preferences formed in response to disability might count as adaptive in a value-laden sense, we shouldn't assume they always do. The mere fact that a preference was formed in response to our circumstances does not automatically make it irrational or mistaken.

To clarify what I am claiming, it will help to compare my position with other views expressed in the literature. As discussed in chapter 4, Barnes's value-neutral model holds that disability is a mere-difference rather than a bad-difference, but disability may nevertheless have some harmful aspects, and may even be an overall harm for some people. To illustrate how disability can be potentially harmful in these ways, while still being a mere-difference, Barnes uses the example of wanting to be a ballet dancer but having the wrong foot shape. In this case, your life goes worse partly because of your foot shape, but that's not the whole explanation; your foot shape only makes your life go worse because you want to be a ballet dancer. By contrast, if you are lonely and bitter, this by itself makes your life go worse for you (Barnes 2016, p. 100-101). I agree with Barnes that disability is more like foot shape in a ballet dancer than being lonely and bitter, in that whether it is bad for you often depends on what it is combined with, but there is still an asymmetry here. To take another of Barnes's examples, although many people value deafness, becoming deaf was devastating for Beethoven. But it wasn't deafness by itself that made Beethoven's life go worse. It was deafness in combination with his love of music and his work as a composer and conductor (Barnes 2016, p. 112). I agree with all of this, but while it's relatively easy to find cases where disability has made a person's life go worse, because it prevents them from fulfilling their desires and ambitions, it's rather harder to find cases where being non-disabled prevents someone from fulfilling their desires.

John Harris also uses the example of deafness, but in defence of the opposing view. He imagines a parent refusing to remove their child's congenital deafness even though, within this fictional scenario, there is a risk-free cure with no side effects. The child in Harris's scenario complains to their parents about the things they are missing out on: music, the human voice, and the sounds of nature such as the wind and the waves (Harris 2000). Some deaf people do feel this way about their deafness. The things Harris lists are indeed potentially valuable experiences that deaf people miss out on. Given the asymmetries between limitations and capacities discussed in chapters 2 and 5, I don't find it plausible to say that there is a set of equally valuable experiences, unique to deafness, that hearing people miss out on. It's less likely, although not impossible, that a hearing person would want to become deaf. But although the experiences of hearing are important and valuable to many people, it should not be assumed that they are valuable to everyone. Many of the activities for which most people rely on their hearing are instrumentally valuable, and the goals at which they aim can be achieved through alternative modes of functioning. Those activities for which hearing is essential, such as listening to music, are not valuable to everybody. They do not satisfy everybody's desires, and not everybody finds them pleasurable. If one endorses an objective list theory of well-being, the goods are likely to be more general, and will not require specific capacities such as hearing.

The view I want to defend is perhaps best understood as a form of what Andrew Schroeder calls the not-very-bad thesis. On this view, disabilities "on average have at most a small to moderate negative impact on individual well-being—an (on average) impact that may be noticeable, undesirable, and worth taking certain steps to avoid, but not nearly the sort of thing that (on average) ruins lives or would appropriately be described as devastating or (irony intended) crippling." (Schroeder 2018, p. 5). Since this is a view about the effect of disability on average, it is entirely consistent with it that disability *does* ruin some people's lives, whereas for other people it is neutral or even positive. Like the value-neutral model, then, it can accommodate a wide range of disability experiences. Unlike mere-difference views such as the value-neutral model, however, it says that disabilities are not entirely neutral; they are more likely to reduce well-being than are the corresponding non-disability states.

I want to extent this thesis to other limitations; on average, increases in capacity are likely to have enough of a positive impact on well-being that, in general, enhancement is worth pursuing. Even if this impact is, on average, relatively modest, for some people the boost to well-being will be very large, and this large increase in well-being for some people provides an additional reason to develop enhancement technologies and make them widely available. This thesis would, however, caution against making bold claims about the value of enhancement for everybody. We cannot assume that any given enhancement process will be beneficial for everybody, even if it is beneficial on average. Any given enhancement process might be beneficial for some people, while being neutral or detrimental for others. And because humans have many different capacities and limitations, any given person might benefit from enhancing some of their capacities, diminishing others, and keeping still others the same.

6.3 Options

This section will explore the debate over the value of options in the disability literature. This issue has been a less central concern within debates about enhancement, but it does sometimes appear. Bostrom has argued for the desirability of becoming posthuman, i.e. enhancing our capacities significantly beyond the maximum currently possible for humans, by suggesting that posthumans have many additional modes of being available to them (Bostrom 2003; Bostrom 2013). Relatedly, Emma Gordon has defended cognitive enhancement against a certain type of hyperagency objection, according to which cognitive enhancement creates an explosion of responsibility, giving us more unfulfilled desires and thereby decreasing our well-being (Gordon 2022). The disability-related arguments I consider in this section will also be relevant to enhancement, since I take what I say about disability to also apply to a broader group of limitations, including those we would now consider unenhanced traits, and I take what I say about removing disability to also apply to other enhancements of capacity.

6.3.1 Additional options are either good or neutral

Much of the debate over whether it is bad to be disabled centres on the thought that disability tends to reduce a person's available options. On the one hand, those who subscribe to a bad-difference view of disability argue that disability precludes some valuable options. If you are deaf, you cannot listen to music, whereas it seems that there is nothing of equal value that you cannot do if you are hearing. A Deaf person might use a signed language and participate in Deaf culture, but any benefits they gain from these things do not strictly speaking require deafness. A hearing person can learn and use a signed language. Even if some options are made easier to access by the inability to hear, a hearing person can take advantage of them by temporarily removing their hearing. Deafness makes it easier to concentrate in noisy environments, but a hearing person can help themselves concentrate by using earplugs or noise cancelling headphones. [56]

On the other hand, proponents of the mere-difference view argue that having more options doesn't necessarily increase well-being. The simple fact of having more options is of no benefit if they are not used. Within our limited lifespan, nobody can take advantage of all the options they have, so a reduction of options, where many of them would not have been used anyway, is not necessarily a harm. A deaf person is not necessarily made worse off by their lack of access to music, just as a hearing person who takes no interest in music is not made worse off by that fact. Stramondo and Campbell (2020) liken it to the example of a university professor who brings her lunch to campus every day. If half of the restaurants on campus close down, the professor has fewer lunch options, but she is not made any worse

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[56] Arguments of this sort are put forward in, e.g. Kahane and Savulescu (2016) and Crawley (2020).

off by that fact, since she was not using any of the options that were previously available to her. In addition, according to what is sometimes known as the multiple realisability argument (Wasserman and Asch 2013), even if disabled people lack some valuable options, they can still have access to the important goods of life. A blind person is unable to appreciate visual art, but still has access to aesthetic experiences through music and literature. According to this argument, it is general goods, such as aesthetic experience, rather than more specific goods, such as visual art or music that are important, and most of us, disabled or not, have multiple ways of accessing these goods. A disabled person can live a full, flourishing life even if they lack some of the more specific ways of realising those goods, by utilising the ways still available to them.

Both sides of this debate get something right. The MDV is correct that additional options don't necessarily increase well-being, but the BDV is correct to note an asymmetry here: while lacking desired options can be a harm, having unwanted options, even if not beneficial, is unlikely to be detrimental. If you are deaf, you might lack some options you would have wanted, or you might be happy with the range of options you have. If you are hearing, you might be glad of the extra options it gives you, or you might have some options that are of no benefit to you.

Returning to Stramondo and Campbell's example of the professor who brings her lunch to campus every day, they are right to suggest that the closure of the restaurants does not decrease her well-being, assuming she continues to be happy bringing her own lunch to work. However, she is also not made any better off. When we consider the impact of the restaurant closures on the staff and students in general, rather than just this one professor, the effects are more varied. For some people, the closures will have little impact, either because they bring their own lunch to campus or because the restaurants they frequent remain open. For others, the impact will be detrimental, because their favourite restaurant has closed. The closures will have negative effects for some people, and for others they will be neutral. It is less likely, however, that they will be positive. It's reasonable to conclude, then, that the restaurant closure has been bad for the staff and students in general; it has made them slightly worse off on average. But when the professor tells us she has not been made any worse off by it, we shouldn't dismiss her testimony on the assumption that she must be making a mistake. Nor should we be surprised if there are large numbers of staff and students who, like the professor, say they have not been made any worse off by the restaurant closure.

6.3.2 Can Additional Options be Harmful?

I have been claiming that an increase in options is unlikely to be harmful. However, some MDV advocates do discuss ways in which additional options can be detrimental. To properly understand and respond to these arguments, we need to make some distinctions between different ways in which it might be bad to have additional options. Of the bad options we have, some are so obviously detrimental and so easy to avoid that their availability causes no harm. We can simply decide not to pursue them. Other bad options are harder to avoid, perhaps because we are weak-willed or because we don't realise quickly enough that they are bad for us. Of these harder to avoid bad options, some are bad for everybody or almost everybody who might choose them. Sometimes the law makes these options more difficult to access, as in, for instance, measures requiring that drivers wear seatbelts. It is doubtful that the options precluded by disability are straightforwardly bad in this way, and defenders of the MDV don't appear to be suggesting that they are.

Similarly, we might favour laws and social policies that restrict people's options because without such policies, people would be pressured or coerced, either by individuals or by social norms, into taking up bad options, or justifying their decision not to take them up. Velleman (1992) argues against the right to die (euthanasia) on these grounds. One might argue that disability sometimes prevents people from taking up options they would otherwise be pressured to choose, such as working long hours or conforming to beauty standards. But although disabled people are sometimes unable to respond to these pressures in the socially prescribed way, that doesn't make the pressures go away. Disabled people are sometimes put at a disadvantage because they are not able to conform to these expectations. If you are unable to work long hours, you will probably lose out on jobs where working long hours is expected. And even where accommodations are provided, disabled people are usually expected to justify their need for such accommodations, and their inability to function in the expected ways, by providing medical evidence. If Velleman is right about euthanasia, introducing a legal right to die produces social pressures that did not exist prior to that change. By contrast, when disability removes the option of conforming to bad social norms, it does not generally remove the pressure to conform, so the removal of that option is not, in general, of benefit to the disabled person.

It seems far more plausible that, if disability sometimes benefits the disabled person by removing some bad options, these are options that are bad for some people but not others, where the goodness or badness of an option is a matter of taste. Although some of our available options might be bad for us, Crawley (2020) suggests that most people will learn, over time, to avoid the bad options and repeat the good ones. In response, Campbell, Stramondo and Wasserman (2021) suggest that people are not always rational enough, or informed enough, to choose the good options and avoid the bad ones. While it's true that we are not always rational, we do not make choices at random. The argument that people tend to choose good options, and learn to avoid the bad ones, does not depend on the idea that people are perfectly rational and fully informed about their own prudential good. So long as people are rational enough and informed enough to choose good options and avoid bad ones more often than not, increasing a person's option set will tend to have a net positive impact. And while there's always a risk that increasing a person's option set will introduce a bad option they will ignorantly or irrationally choose, it's hard to see how we could take account of this either in our individual actions or social policy. Nobody can eliminate, within their own life, the options they don't know are bad for them, and since we're discussing cases where different options will be bad for different people, we cannot eliminate bad options for people in general, or for people whose preferences and other relevant characteristics are unknown.

It has also been suggested that additional options might be harmful not only because some specific options might be bad for us, but also because it might be bad to have too great a quantity of options. MDV advocates note that where there are too many options, choosing between them can be difficult, and the deliberation creates its own costs. It is impossible for anyone to take advantage of all of the options they have, so a narrower range of options makes it easier to focus on the most desirable or important ones. Campbell, Stramondo and Wasserman (2021) suggest, for instance, that while trial and error might be a good way to eliminate bad options in the case of, for instance, deciding how to spend an afternoon, it does not work as well when making major life decisions such as choosing a career. Great achievements in life, they argue, require us to focus narrowly on a specific option, rather than constantly sampling multiple possibilities. Even if this is true, one might draw inspiration from, or simply take pleasure in, the options that are not one's primary focus. Perhaps it is better to focus solely on writing fiction than to try to simultaneously be a fiction writer, a musician, and a visual artist. But even if you have decided not to produce work in other art forms, your appreciation of music and the visual arts might provide you with inspiration and ideas that feed into your fiction, or simply a hobby or a form of relaxation. So even if it's best to have a single, relatively narrow primary focus in life, and even if you have so many good options that you've found it difficult to decide what your focus should be, you will often still benefit from retaining access to your unchosen options. Perhaps the fiction writer who was tempted to also pursue music and visual art would have been better off, or just as well off, if they had lacked access to those other art forms, given that they wouldn't have had the costs of deliberating over which one to choose. However, it's far from obvious that the costs of deliberation are greater than the benefits of having those additional options available, even if those additional options cannot be pursued to the fullest possible extent.

6.3.3 Options and Disability Justice

So far, I have argued that additional options can be beneficial, or they can be neutral, but are less likely to be detrimental. This section presents a further argument for the value of options gained from increased capacities: it's good to provide additional options by increasing people's capacities in many of the same ways and for many of the same reasons that it's good to provide options by creating more accessible or accommodating social environments. Unaccommodating social environments often reduce disabled people's options, and in this way they are strikingly similar to cases where the reduction of options is attributable to the disability itself — cases in which, according to many MDV advocates, the disabled person is not made worse off. This can be illustrated by returning to the multiple realisability argument. According to that argument, a blind person need not be made worse off by their lack of access to the visual arts, since they still have enough alternative ways of accessing aesthetic experience. Yet those of us who would advocate for greater accessibility usually think blind people should be given access to visual media through, for example, audio description of television and theatre, or tactile access to galleries and museums. The multiple realisability argument could easily undermine the reasoning for this: there is no need to provide audio description, because blind people can get their fill of aesthetic experience even if they don't have access to the visual aspects of television.

The same point can be illustrated with the familiar example of a wheelchair user unable to enter a building because of a flight of stairs. This is a paradigm case of an unaccommodating social environment: the design of the building does not take into account the needs of wheelchair users. The lack of accessibility is bad for the people affected, so it ought to be changed; there should be an alternative means of accessing the building, such as a ramp. We do not usually apply the same reasoning when a wheelchair user is unable to access the natural environment because of, for instance, the presence of rocks or sand. As Tom Shakespeare puts this point, "it is hard to blame the natural environment on social arrangements." (Shakespeare 2013, p. 36). We might accept that this is one of the bad aspects of disability that cannot be entirely mitigated by changing society, as Shakespeare does. Or we might be tempted to use the multiple realisability argument: even if you cannot access some parts of the natural world, there are plenty of other natural spaces you can access, so your lack of access to this one needn't make you worse off. But if the multiple realisability argument applies here, then it also applies to inaccessible buildings; even if, for instance, some of the restaurants in a city are inaccessible to wheelchair users, there are plenty of other restaurants in the city that wheelchair users can visit. To avoid this implication, we would need to find a relevant distinction between the two kinds of case. We might do this by distinguishing between the natural environment and the social or built environment. But as Alison Kafer argues, "the natural environment is also 'built': literally so in the case of trails and dams, metaphorically so in the sense of cultural constructions and deployments of 'nature,' 'natural,' and 'the environment.'" (Kafer 2013, p. 129). The natural and social environments, then, are not always easy to distinguish.

One might also argue that reductions in options caused by social, extrinsic or environmental factors, such as ableist or otherwise oppressive social circumstances, are relevantly different from reductions in options caused by intrinsic or bodily properties, such as disabilities and other limitations. A view of this sort is defended by Sara Goering in the context of a discussion about adaptive preferences. When we suggest that, for instance, happy slaves or women in patriarchal societies have adapted to their more limited set of options, we are claiming that their expectations have been shaped by their oppressive social circumstances. When we suggest that happily disabled people have adapted to their more limited set of options, we are claiming that they have lowered expectations as a result of their inherent bodily limitations. The implication is that the disabled person is flawed and needs to be fixed (Goering 2008). [57] It might be argued that what is true of the circumstances of happy slaves and women in patriarchal societies is also true of the ableist

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[57] This is similar to a view about adaptive preferences defended by Barnes (2009). Barnes suggests that a diagnosis of adaptive preferences should only be made in cases where the person is subject to a social distortion. Happily, disabled people are not suffering from adaptive preferences, then, because disability is not a social distortion. Being disabled is not a matter of being dominated, or having your resources forcibly removed, or anything of that sort. You can be disabled on a desert island, but you cannot be an abused woman or a kidnap victim on a desert island.

circumstances in which disabled people find themselves. The thought, then, would be that giving disabled people more options by changing the social environment is more respectful of people's identities and self-conceptions than is altering the body.

If we say that a person needs to be fixed, the implication would seem to be that their bodily states are a personal flaw and that acceptance is conditional on having them changed. But these implications do not follow from the claim that the person might be happier in a different bodily state. Indeed, some people feel the need to alter their body to better match their identity or self-conception, as is the case, for instance, for many transgender and transabled people. While some people do conceive of disability as an important part of their identity, others may find that hobbies or careers they identify with are stymied by disability. If you feel the need to modify your body to better match your identity, the message that you should accept your body as it is, rather than altering it, might feel like an attempt to fix you.

Moreover, while many people do come to identify with, and take pride in, bodily and psychological properties including disabilities, people very often build their identities around, and take pride in, social positions and relational properties, including those that are oppressive. A woman in a patriarchal society might well take pride in being submissive to her husband, and build her identity around her role as a wife. If this social role is important to her self-conception, any attempt to change it might feel to her like an attempt to fix her.

We do, in fact, need to be careful when modifying social arrangements we take to be oppressive. Goering herself gives the example that, to the surprise of many Western feminists, a sizeable contingent of non-Western Muslim women prefer to wear the hijab, but campaign to end many kinds of sexist oppression within their societies. Epistemic humility is necessary, and people in privileged positions should approach dialogue with people from marginalised groups with openness to the possibility that they, too, might have things to learn, not with the assumption that they already know what is best (Goering 2008 p. 132).

This point about dialogue and epistemic humility is also important in the case of disability, whether we are considering alterations to people's bodies or to the social environment. It can be disrespectful to tell someone that they would be better off in a different bodily state, if they have said that they are happy with their disability, but their testimony has not been taken seriously. Yet it can also be disrespectful to approach social accommodation in ways that don't take into account the perspectives of disabled people, as the disability rights slogan "nothing about us without us" attests. The makers of assistive technology, for instance, should design their products in consultation with a range of potential disabled users, and should be aware of the limits to their ability to predict what their users will need without such consultation and feedback. This is especially true if the creators of the assistive technology are not disabled, but even those who themselves have the relevant disabilities probably wouldn't have first-hand knowledge of all potential users of the technologies they make. Where assistance is provided to disabled people, this should be sensitive to what disabled people themselves say they need, and help should not be foisted on those who do not want or need it. Social accommodation, then, is not inherently respectful of the wishes of disabled people.

Most disability activists and theorists would agree with the point that social accommodation can sometimes be provided in ways that do not respect the knowledge or agency of disabled people. Some might maintain, however, that their remains a difference between social accommodation and bodily alteration, because disabled people have already told us that they want the former rather than the latter. Goering asserts that there is "a relatively unified demand for a better situation, not a demand for cures, as a matter of justice." (Ibid, p. 133). I have no dispute with the idea that, to the extent that disabled people want social accommodation rather than cures, and to the extent that the two can be distinguished, it is social accommodation that we should focus on. But not all disabled people, and not even all disabled people who are aware of ableist oppression, would reject a cure. for those disabled people who do want to have their disabilities removed, a cure would not be disrespectful.

Whether or not any given intervention is disrespectful depends on things like whether dialogue is being approached with epistemic humility, and whether the person's self-conception is being taken seriously. It has very little to do with whether we are suggesting changes to the person's body or to their social position. In addition, as argued in chapter 4, biological alterations and social accommodations can be difficult to distinguish. Thus, if the increases in options brought about by social accommodation are good for disabled people, then increases in options brought about by the removal of disability, and enhancements more generally, are also likely to be good for people in many cases.

6.3.4 Does Disability Always Reduce Options?

So far, I have been presupposing that disabilities and other limitations reduce options. As already discussed, defences of the MDV often contend that, even when disability reduces options, that doesn't, or needn't, reduce well-being. But defenders of the MDV do sometimes argue that disability can also open up additional options. This is difficult to evaluate as a claim about disability in general, since those who argue for it usually do so by pointing to cases in which a specific disability opens up some specific options, rather than by arguing that disability in general tends to open up options. I find some of these specific claims more plausible than others. To proceed, I will consider two kinds of case.

Firstly, although I have been understanding disabilities as limitations, sometimes the medical or bodily conditions of disability also have aspects other than the limitation itself. I have already discussed primarily negative aspects such as pain, but disability conditions can also come with positives. In a discussion of the unique goods of disability, Barnes quotes Sarah Eyre's descriptions of the euphoria and musical auditory hallucinations she has as a result of MS (Barnes 2016, p. 92). Should we think of these as goods uniquely opened up by MS? There would be no contradiction in wanting to retain the musical hallucinations and euphoria while wanting to get rid of the other aspects of MS, whether or not such a thing would actually be possible. And we can imagine a future in which it is both technologically possible and socially acceptable to alter one's mental states in very specific ways, such as creating musical hallucinations. But whether or not this could ever be possible in the future, it's reasonable, or at least it's consistent with my view, to say that, given current social norms and the limitations of existing technology, these goods are uniquely open to people with MS.

Secondly, there are cases where a property we normally understand as a disability actually allows for additional capacities. Campbell and Stramondo (2020) discuss Hugh Herr, a double amputee and rock climber. After the accident in which he lost his natural legs, Herr designed his own prosthetics which allowed him to climb rocks which had been impossible before. This is plausibly a case where becoming an amputee has opened up options which would not have been possible otherwise, since part of the advantage of his prosthetics is their lightness. Campbell and Stramondo use this example to argue that disability should not always be associated with loss of capacity. In fact, since there is an increase in capacity here, I would suggest that this example ought to be considered an enhancement. The crucial difference between Herr and his prosthetics, and most of the other examples discussed in this chapter and the previous one, is that the advantages of the prosthetics, such as the ability to climb certain sorts of rock faces, can only be gained if one does not have a pair of fleshly legs. It would not be possible to gain the additional capacities without having one's legs amputated. If at some time in the future some people begin to replace their legs or other body parts with more functional prosthetics, we should probably say that these people are enhancing rather than acquiring disabilities.

The two kinds of case just discussed show that the properties ordinarily described as disabilities might sometimes open up valuable options. However, since one kind of case illustrates that disabilities might sometimes come with positives other than the limitation, and the other kind of case illustrates that the properties we typically understand as disabilities might sometimes increase capacities rather than diminishing them, these specific examples do not show that limitations themselves can be valuable. In the next section, I turn to a possible reason for the positive value of limitations.

6.4 Achievement

In examining the options debate, I have primarily been discussing the ways in which limitations can be either detrimental or neutral. I now turn to what would seem to be a natural next question: are there instances where limitations are not just neutral, but actually beneficial? One positive reason some people might have for keeping their current limitations would be that the transition costs associated with adapting to new modes of functioning might be greater than the benefits of the increase in capacity. However, the same reasoning might apply to traits we wouldn't want to describe as limitations, or indeed to any of our circumstances. It is simply the idea that it may sometimes be preferable to maintain the status quo, rather than a reason to think limitations, in particular, are valuable. So, are there reasons why limitations, as opposed to other kinds of traits or properties, might be of benefit?

In this section, I want to explore a possible reason for valuing our limitations which is related to a type of argument commonly made against enhancement. While I think the argument, in its usual forms, does not succeed, I want to explore the grain of truth within it.

According to this argument, there is value in our unenhanced traits because they create difficulties or obstacles for us to overcome. This argument takes several forms. In its less plausible forms, it suggests that suffering can be good for us, or that taking easy shortcuts erodes character. Francis Fukuyama, for instance, argues that "what we consider to be the highest and most admirable human qualities, both in ourselves and in others, are often related to the way that we react to, confront, overcome, and frequently succumb to pain, suffering, and death. In the absence of these human evils there would be no sympathy, compassion, courage, heroism, solidarity, or strength of character." (Fukuyama 2002, p. 186). Maartje Schermer points out several problems with arguments of this sort. If enhancements make it possible to achieve a goal without practicing virtues such as patience and perseverance, we can practice these virtues in other, more worthwhile activities. If we ever managed to create a world in which these character traits were no longer necessary, we would no longer need to preserve them. Moreover, even if suffering sometimes enables learning and wisdom, that does not mean suffering is the only way to gain these benefits, or that these benefits provide enough reason to justify not preventing or alleviating the suffering. Sometimes, far from being beneficial, suffering can be quite damaging to those who have had to endure it. (Schermer 2008).

However, as discussed in the previous chapter, limitation and suffering are not the same. We might value our limitations, even for the obstacles they create, without valuing suffering per se. Moreover, the moralistic interpretation is not the only form that arguments for the value of difficulties and obstacles can take.

A stronger version of the argument starts with the thought that difficulty is part of what makes achievements valuable. If two people have achieved the same outcome, but one has faced greater obstacles, then that person's achievement has greater value. The argument goes on to suggest that enhancement removes some significant obstacles, thereby diminishing the value of achievements. Michael Sandel expresses this concern in relation to performance enhancement in sport: "It is one thing to hit seventy home runs as the result of disciplined training and effort, and something else, something less, to hit them with the help of steroids or genetically enhanced muscles. ... [A]s the role of enhancement increases, our admiration for the achievement fades—or, rather, our admiration for the achievement shifts from the player to his pharmacist." (Sandel 2004).

If interpreted as a reason to discourage enhancement in general, this argument has some important weaknesses. Sometimes enhancements actually enable more difficult achievements, as in Carter and Pritchard's example of Moddy, who uses Modafinil so that she can stay awake for longer and solves a difficult mathematical problem. The enhancement makes Moddy more likely to succeed, since she probably would have given up on the problem without it. Yet the enhancement does not remove all obstacles, and the achievement should still be credited to Moddy's skill; a less skilled mathematician would not have been able to solve the problem, with or without Modafinil. Furthermore, if enhancements make tasks such as solving mathematical problems easier, this will often prompt us to tackle more difficult problems, so that the level of difficulty keeps up with our increased capacities (Carter and Pritchard 2019).

Moreover, the argument does not apply in cases where it is the outcome, rather than the process, that is valued. Enhanced and unenhanced achievement may each have different kinds of value, with the unenhanced achievement perhaps having a more valuable process and the enhanced achievement perhaps having a better product (Juengst and Moseley 2019, sec. 4).

Yet the distinction between process and product can help us make sense of what the argument does get right. In the case of what Gwen Bradford calls zero-product achievements, the process and its difficulty are what matter. Bradford gives the example of climbing a mountain. There's no particular value in arriving at the summit of a mountain by helicopter; it's not being at the top of the mountain that we value, but rather the process of climbing it (Bradford 2013, pp. 206-207). Indeed, Bradford suggests, we can see that we value difficulty and process when we imagine how we would behave in a utopia where everything we could possibly want is instantly available to us. In this utopia, there's no need to build houses or cook food, because we can make our dream house or favourite dish instantly appear. All difficult activities are unnecessary, and yet we would probably find ways to increase the difficulty in our lives. We might build houses or bake cakes, even though we can instantly obtain houses and cakes without doing these things, simply because the difficulty makes our lives more exciting (Bradford 2013, pp. 212-213).

We can now apply Bradford's points about achievement directly to enhancements and limitations. Within the utopia just described, any possible enhancement is instantly available to us. We can instantly modify our bodies and minds in any way we choose.

Within this world, we might choose to retain or acquire some limitations for precisely the same reason that we might want to build houses or bake cakes: it increases the amount of difficulty in our lives, and that makes our lives more exciting. Similarly, in the real world, people might value some of their limitations, including disabilities, for the obstacles and constraints they present and for the creativity and problem solving required in responding to them. These ways of adapting will often result in innovations that benefit even those who do not have the relevant limitation. As an example of this, audiobooks are beneficial not only to blind people, and others who would struggle to visually read the text of a printed book, but also to anyone who might prefer to listen, perhaps because they want to read while engaging in other tasks. Thus, responses to the challenge of finding non-visual ways to access books benefit not only blind people, but anyone, disabled or not, who wants to have alternative modes of functioning.

At this point, I want to flag a potential worry: viewing disabilities as obstacles to be overcome may seem reminiscent of what disability activist Stella Young calls 'inspiration porn'. Young describes memes shared on social media depicting disabled people, often children, doing ordinary activities: playing sports, painting, talking, captioned with phrases such as "Your excuse is invalid" or "Before you quit, try". These images do not name the disabled people shown; they simply use them as a way to make non-disabled people feel better about their own lives. Disability is seen as a matter of individual determination to overcome obstacles and the systemic oppression is forgotten. (Young 2012). The intent of inspiration porn might seem celebratory, and it might seem like a way of valuing disability, but it is not a way of showing that disabilities might be valuable to the disabled person, or highlighting the ways disabled people can and do contribute to society. The message conveyed is something like "if a tragic, pitiful disabled person can do it, why can't you?"

To see how we can value disabilities and other limitations for the difficulties they create, without engaging in inspiration porn, consider one of the memes described by Young, depicting a young girl painting by holding the paintbrush in her mouth. As she grows older, she may come to resent the ways her picture has been used to objectify her, and disabled people in general, implying that her life is tragic so as to make non-disabled people feel better about their own lives. Yet she might, at the same time, value the ways she has adapted activities to suit her bodily limitations, seeing her solutions for getting around these obstacles as an expression of her own creativity. She couldn't paint with her hands, so she used her problem-solving skills to find an alternative method.

If, by contrast, her disability is a source of suffering and frustration for her, and something she would prefer to be without; if, for instance, she finds enough opportunity for creativity and difficult achievement in her painting, and finds her disability more of a burden than an exciting challenge, then it should not be celebrated. The fact that it might make her life more difficult, or even provide opportunities for creativity, does not automatically make it valuable, or something that increases her well-being. If we subscribe to a hedonistic or desire-based theory of well-being, the reasons for this are quite straightforward; if the disability does not increase her net pleasure or desire satisfaction, then it is not increasing her well-being. Difficult achievements sometimes bring us pleasure, or satisfy our desires, but they don't always do so. Even if we subscribe to an objective list theory that has achievement on its list of goods, and even if difficulty is necessary for achievement, this does not mean that it would be good for her to endure a limitation that is causing her to suffer or that she wants to remove. Difficulty is not the only thing of value, so having an objective list that includes difficult achievements does not imply that we should take every opportunity to make our lives as difficult as possible. (Bradford 2013, p. 211). Pleasure is probably also valuable, even if it's not the only valuable thing, so an objective list theory can make sense of the thought that we should prioritise pleasurable difficulties and challenges, or achievements that we value for other reasons. Any given limitation is very unlikely to be the only possible source of difficulty within a person's life, so we can be selective about which difficulties we face.

For the same reasons, what I have said here does not imply that we should, collectively, make people's lives as difficult as possible, or that we should refrain from developing enhancements and other technologies that make people's lives easier. The argument I have been making applies to limitations in general; although it suggests that people might sometimes have reason to value their limitations, it does not suggest that any specific limitation is likely to be good for most people. Indeed, what I have said here is consistent with the not-very-bad thesis. For a wide range of limitations, each specific one is, on average, likely to reduce well-being for most people. Humans have many different capacities and limitations, and it seems quite plausible that people will vary widely in which, if any, limitations are beneficial to them. Conversely, for a wide range of capacities, increasing that capacity is likely to increase well-being on average. That gives us a good reason to develop capacity-increasing enhancement technologies, including those that remove disability, yet what I have said in this section provides one possible reason to think that individuals who forego an enhancement needn't necessarily be making a mistake.

6.5 Conclusion

On the view defended in this chapter, with respect to disability, both the MDV and the BDV get something right. It may even be that advocates of the MDV and the BDV do not disagree as much as has sometimes been supposed. The perception of a substantial disagreement might partly be caused by each side having different types or severities of disability in mind, as Tom Shakespeare contends (Shakespeare 2013, p. 80). It might also be that BDV advocates are focused on the detrimental impact of disability on well-being in general or on average, whereas MDV advocates are focused on the many specific people for whom disability has not reduced well-being. To the extent that this can explain the perception of disagreement, the claims of the two sides are compatible, and both are correct.

That is not to say that there is no disagreement at all. The two sides probably do disagree about the extent to which disability reduces well-being on average, and the significance for ethics and social policy of the various ways in which disability is or is not a harm. What we ought to do in response to disability, as individuals and as a society, depends on which of these factors are most relevant in the case at hand. My arguments for the general badness of disability provide a reason in favour of policies that aim at avoiding and preventing disability within the general population, even if I have not shown that we ought to adopt such policies, all things considered. Yet, since disability can be neutral or desirable in specific cases, it may be morally permissible, perhaps even praiseworthy or obligatory, to cause disability or limitation in those who say they would benefit from it. At least, prohibitions on causing disability or limitation, in these cases, cannot be justified on the basis that disabilities and other limitations reduce well-being.

In general, however, I would expect that most people would benefit from increasing their capacities rather than decreasing them, and that provides an important reason in favour of developing enhancements. In considering arguments against enhancement, it's important to distinguish between, on the one hand, reasons to think that people in general ought to be discouraged from developing or using an enhancement, and on the other hand, reasons to think some individuals might rationally choose to forego an enhancement. Considerations relating to the value of obstacles in achievement do not count as the former, but they might sometimes count as the latter. A similar pattern applies to many other arguments against enhancement, as we will see in relation to radical enhancement in the next chapter.

My arguments in this chapter have been concerned with the value of limitations in general, and I have not discussed in any detail the possible differences between different types of limitations. But although I think the arguments I have presented apply to a broad range of limitations, that doesn't necessarily mean that all limitations can be treated in the same way. Andrew Schroeder points out a crucial difference between mortality and other limitations. For most limitations, the loss of capacities needn't reduce well-being, if equally valuable substitutes can be found. But death results in the loss of all capacities, so no substitutes are possible. Death will, therefore, reduce well-being for anybody whose life would have been good on balance (Schroeder 2015, p. 225). [58] If this is right, our limited lifespans are more detrimental than many of our other limitations. Indeed, as already mentioned, one aspect of the options argument is that, within our limited lifespans, we cannot take advantage of all of the options available to us. As Silvers puts this point: "Because one has only one life to plan, the ultimate difference between having begun with a single, several, or many equally satisfying life-plan opportunities may be negligible." (Silvers 2005, sec. 1.3). We may always have only one life to plan, but the longer that life is, the more options we can take advantage of, and the less this aspect of the argument applies. There may be differences between different types of limitations, then, but these are not differences between disabilities and unenhanced traits.

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[58] For more on the badness of death, see Nagel (1979).

Chapter 7: Radical Enhancement as Transformative Experience

7.1 Introduction

The view I developed in the previous chapter does not distinguish between disabilities and unenhanced traits, or between disability-removing processes and enhancement processes. I now turn to a distinction I have not thus far addressed in detail: that between moderate and radical enhancement. Moderate enhancement, as defined by Nicholas Agar, is "the improvement of significant attributes and abilities to levels *within or close to* what is currently possible for human beings." Radical enhancement is "the improvement of significant attributes and abilities to levels that *greatly exceed* what is currently possible for human beings." (Agar 2013, p. xi).

Two potential differences between moderate and radical enhancement make the latter especially difficult to evaluate. Firstly, the magnitude of the change makes it difficult to imagine what it would be like to be radically enhanced. Secondly, insofar as these technologies are as of yet hypothetical, we have no testimony to draw upon in deciding whether their use would be beneficial for us. In the case of disability, we have both first-person reports from disabled people, and studies exploring the impact of disability on well-being, life satisfaction or quality of life. These sources of evidence won't teach you exactly what it would be like for you to have a disability you do not in fact have, but they are far from entirely worthless. In the case of moderate enhancement, even where the technology under consideration does not yet exist, we can draw on the testimony of people who already have high levels of the capacity we want to enhance.

Agar thinks we *should* distinguish between the two; we should endorse moderate enhancement but reject radical enhancement. I consider some of his arguments in this chapter. In keeping with the previous chapter, my focus will be on the value of traits, capacities or limitations for the person who has them, and so I will not address his arguments about, for instance, the ethics of enhancement research, or the moral status of radically enhanced beings. My focus will instead be on the prudential value of radically enhanced states, and on whether it is rational to opt for radical enhancement. This means I will be focusing on its value for the individual, setting aside considerations about the social benefits and/or harms of having radically enhanced persons within a community, although the impact of radically enhanced capacities on well-being might of course depend in part on whether others have them. It also means I cannot come to a conclusion on whether, all things considered, we ought to develop radical enhancements.

Even this more limited focus on prudential value may, however, allow us to draw *some* conclusions about policy, or at least give us reasons in favour of some policies and against others. The prudential value of radically enhanced capacities is one factor in deciding whether to develop these technologies at all. In addition, Agar thinks that, because radical enhancements are imprudent, laws may be required to protect children from guardians who procure radical enhancements for them, and to counter distorted representations of it (Agar 2013, p. 4). I want to suggest that opting for radical enhancement needn't be irrational in a way that would require these special protections. [59]

Agar has identified some good reasons people might have for personally rejecting radical enhancement, but they do not show that radical enhancement is prudentially bad in general. In the next section, I develop the idea that radical enhancement is transformative, explaining why that makes its value so uncertain. The next two sections offer insight into the problem of how to evaluate it by comparing it with changes whose value seems more certain: first moderate enhancement, and then becoming an adult. These comparisons suggest that it will probably tend to be beneficial, but as with the view I took on moderate enhancement and the removal of disability in the previous chapter, I don't want to assume that radical enhancement will be good for everybody. I then turn to issues specific to life extension, which is in some relevant ways different from other types of enhancement. I conclude with a discussion of broader implications, suggesting that my arguments provide reasons in favour of developing radical enhancement technologies.

7.2 Transformation and Radical Enhancement

Most of Agar's reasons for rejecting radical enhancement are species-relative: they apply to unenhanced humans, but do not necessarily apply to other beings. He argues, for instance, that we cannot imaginatively identify with the experiences that radical enhancements create. The achievements of unenhanced or moderately enhanced athletes are more

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[59] Which is not to say that I will have definitively argued against such protections; there could be other reasons for them that I have not considered.

interesting to us than the objectively superior achievements of radically enhanced athletes because we can more easily imagine their struggles and triumphs. Agar likens this to the way that fictional characters, even when they are not human, tend to have recognisably human psychologies. A fictional rabbit, for instance, with a realistically rabbit-like psychology, would not be of much interest to us. Likewise, if you anticipate becoming radically enhanced, you cannot now imaginatively identify with your future self (Agar 2013, ch. 3).

In becoming radically enhanced, you will undergo a transformative change. To illustrate this concept, Agar uses the science fictional example of body snatchers. These aliens appear in pod form next to a sleeping human, and then begin the body snatching process, converting the human into a being like themselves. The human's body is destroyed and replaced with an almost identical copy. The body-snatched former human will retain the memories of their old life, and have many of the same psychological traits, but they will have flattened affect, and a newly formed desire to turn other beings into body snatchers. Being a body snatcher might be a perfectly good way to live, [60] and if you become one, you might be glad you were body snatched. But none of that implies that you should want to become a body snatcher. We have an interest in preserving our current human values. (Agar 2013, ch. 1).

Agar is right to suggest that becoming radically enhanced is a transformative change, but does that make it irrational to want it? Not necessarily, or at least, choosing to undergo a transformative change is no more irrational than refusing it. To argue for this, I will draw on L. A. Paul's work on transformative experience (Paul 2014). [61] Paul begins her

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[60] At least from a self-interested perspective, setting aside ethical worries about body snatching.

[61] Agar's concept of transformative change is clearly very similar to Paul's concept of transformative experience, but are they exactly the same? Paul uses the term 'transformative experience' to refer to experiences that are both "epistemically transformative, giving you new information in virtue of your experience", and "personally transformative, changing how you experience being who you are" (Paul 2014, p. 17). According to Agar, "A transformative change alters the state of an individual’s mental or physical characteristics in a way that causes and warrants a significant change in how that individual evaluates a wide range of their own experiences, beliefs, or achievements." (Agar 2013, pp. 5-6). He goes on to clarify that "[t]he changes respond specifically to and are warranted by alterations of a subject’s mental or physical characteristics. They do not occur as a response to changes of the world external to a subject’s mind and body." (Ibid, p.6). There may be some differences here, for instance, Paul does not restrict her definition to changes resulting from alterations to physical or mental characteristics, and Agar is

exploration of this idea with the example of becoming a vampire. If you had the opportunity to be instantly transformed into a vampire, should you take up the offer? A natural way to approach this choice is to imagine what it would be like to be a vampire and ask yourself how you would feel about it. But this cannot work because, in your current state as a human, you don't know what it's like to be a vampire. You don't know enough about the subjective experience of being a vampire to assess that choice. Moreover, becoming a vampire will change you. Once you have been bitten and have begun to experience life as a vampire, you may come to have new values and preferences. In short, becoming a vampire is both epistemically and personally transformative. Perhaps you can gain some limited information from the testimony of your friends who have become vampires. This sort of information may be useful, but it won't tell you what it will be like for *you* to become a vampire. Perhaps you are different from your friends in some way you can't easily anticipate. (Paul 2014, ch. 1).

So, should you become a vampire or not? If we take Agar as our guide, we should reject the offer because we should privilege our current, human perspectives. But Paul suggests that we might want to accept the change, if we want to learn who we'll become. We might approach the choice by deciding whether we're interested in what the experience will teach us, the revelations it will offer. Either way, it's a big decision, and either choice could be the wrong one. As Paul summarises our predicament in the vampire scenario, "If, in the end, you choose to become a vampire based on the exciting possibilities that becoming immortal seems to offer, you shouldn’t fool yourself—*you have no idea what you are getting into*. You just don’t know what it’s like to be a vampire. And if you refuse to become one on the basis that you can’t imagine not being human anymore, then you also shouldn’t fool yourself—*you have no idea what you are missing*." (Paul 2014, p. 47). What is true of Paul's vampires is also true of Agar's body snatchers and, more relevantly, radical enhancement. If you choose to accept the offer of radical enhancement, you don't know what you're getting into. If you refuse, you don't know what you're missing. You could follow Agar's recommendation, rejecting radical enhancement because you want to keep your current human values and perspectives. Or you could accept it, because you want to see what the experience will teach you and find out who you'll become. Neither choice seems obviously more rational than the other.

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relatively less focused on the phenomenology. But if they are not exactly the same, they are similar enough that it makes sense to say that Agar and Paul disagree about how we should respond to experiences or processes that fundamentally change us.

This might seem to suggest that we have no more reason to accept radical enhancement than to reject it. I would suggest that, in many cases, either could be a reasonable choice. But I now want to discuss two reasons that seem to count in favour of the enhancement: firstly, if we value moderate enhancement, that might count as evidence that even greater increases in capacity would also be valuable to us. Secondly, we already undergo dramatic increases in our capacities when we grow up.

7.3 The Parallel with Moderate Enhancement

As Agar himself admits, the line between moderate and radical enhancement is vague (Agar 2013, pp. 2-3). By itself, this is not a strong argument against his position. A distinction can still be useful even if there are difficult or borderline cases. In this section, I want to consider how significant that distinction is. As discussed in the previous chapter, I don't want to assume that moderate enhancements would be good for everybody; some people might have good reasons not to use them, although I think they are likely to be good for us on average. Rather than rehashing the arguments for that view here, I will approach the question from the perspective of the person who already values moderate enhancement. In other words, if you have good evidence that moderate enhancement of, say, your cognitive capacities would be good for you, perhaps because you've already tried it, to what extent does this give you evidence that radical enhancement of the same capacities would also be good for you?

One reason for rejecting radical enhancement, even if we value moderate enhancement, might be the expectation that, after a certain point, increases in capacities will yield diminishing returns. This is not Agar's primary reason for rejecting radical enhancement, although he does make an argument of this sort, likening increases in intelligence to increases in wealth. Even if a prize of $100,000,000 is more valuable to us than a prize of $1,000,000, it's not one hundred times more valuable to us (Agar 2010, pp. 88-89). If something like this is true of cognitive capacities, then increases beyond the point of diminishing returns are not detrimental; they simply add no, or relatively less, further value. It would seem, then, that we are unsure whether radical increases in cognitive capacity are beneficial or neutral, and if we enhance, the worst-case scenario is that we've done something pointless but not really harmful, whereas the best-case scenario is very good indeed. This is similar to the argument I made when examining the options debate in the previous chapter. [62]

This analysis does not, however, take into account the risks of using enhancement technologies. Agar makes his point about diminishing returns in the context of a Pascal's Wager-style argument against the prudential rationality of mind uploading. We can't be sure whether uploading is compatible with personal survival, because you can't be sure whether your upload will be capable of conscious thought, so it's not worth the risk, even if it allows for much greater degrees of cognitive enhancement. More modest enhancements are likely to satisfy most of our desires. Mind uploading is, therefore, a bad bet, given the possibility that you wouldn't survive it, and the relative lack of value added by the radically increased capacities it might allow. (Agar 2010, ch. 4). In response to worries about whether mind uploading could preserve personal identity, David Chalmers has suggested that we might upload gradually by, for instance, using nano devices that learn to simulate each individual neuron and its connections (Chalmers 2010). If Chalmers is right, uploading gradually will decrease the risk that you will not survive the process. Agar rejects this solution, likening gradual uploading to the gradual decline brought on by Alzheimer’s disease (Agar 2010, p. 92). A full discussion of mind uploading, consciousness and personal identity is beyond the scope of this project, but even if Agar is right about mind uploading, the gradual approach might solve some of the other problems he has identified with radical enhancement. [63] Where the benefits of enhancement are uncertain, and/or the procedures are risky, a gradual approach would allow you to assess, at each stage, whether further enhancement would still be worthwhile.

The gradual approach would also address some of Agar's worries about the transformative effects of radical enhancement, since these arise because of the magnitude of the change. In the case of, for instance, cognitive enhancement, this might mean applying a series of

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[62] I don't mean to suggest that increases in capacity cannot have any negative effects on well-being; my argument here is specific to the point about diminishing returns.

[63] In his unpublished work, Cian Brennan has put forward a proposal he calls ‘weak transhumanism’, which suggests gradual enhancement as a way of getting around Agar’s objections to radical enhancement. The difference between Brennan’s weak transhumanism, and the kind of gradual enhancement I am suggesting here, is that weak transhumanism recommends applying enhancements across the population over a period of generations, whereas I’m suggesting that some individuals might want to gradually enhance themselves, perhaps over a period of years, although I have no definite view about what the precise timeline should be.

more moderate enhancements over a period of years. Perhaps, from our current perspective, we cannot imaginatively engage with the perspective of a being with radically enhanced cognitive capacities, but we can imaginatively engage with the perspectives we would have with moderate cognitive enhancement. Our moderately enhanced selves could, in turn, imaginatively engage with a slightly more enhanced stage. If stage 1 is where you are now, stage 2 is a moderate enhancement of the sort Agar would endorse, and stage 10 is a point at which you are radically enhanced, then perhaps stage 1 cannot engage with stage 10, but stage 1 can engage with stage 2, and stage 2 can engage with stage 3, and so on.

By stage 10 you've lost the things about your current, human perspective that Agar thinks you should value. If he is right, then at stage 1, you shouldn't want to jump straight to stage 10. However, stage 9 seemingly has no reason to avoid the move to stage 10. Recall that Agar thinks you should evaluate the change from the perspective of your current values. It's bad for a human to become a body snatcher, but that doesn't mean it's bad to be a body snatcher in an absolute sense. It might even be bad for a body snatcher to become a human. Likewise, It's not that there's anything bad, in an absolute sense, about being at stage 10; it's just that a stage 10 being is a bad thing for a stage 1 human to become. But if you're already at stage 9, deciding whether to move to stage 10, you shouldn't make your decision from the perspective of a stage 1 human. You should evaluate it from the perspective of the stage 9 person you are now, and a stage 10 being might not be a bad thing for a stage 9 being to become, just as a stage 2 being as not a bad thing for a stage 1 being to become.

Agar, however, thinks the gradual approach is not an adequate solution: "Finding a significant difference between the abrupt and gradual loss of humanity is a bit like finding a big difference between the thief who would take all of your money in one dramatic heist and the thief who methodically drains your accounts over the course of a few weeks." (Agar 2013, p. 198). But if a thief forces you to choose whether they will take your money all at once or gradually, you shouldn't or at least needn't be indifferent. One difference, for instance, is that if you lose your money gradually, you have more time to adapt to the change, working within ever tighter budgets. Differences such as these are not enough to make gradual stealing morally permissible, but they are significant nevertheless, and so there might be a significant difference between sudden and gradual enhancement.

There is also an important difference between radical enhancement and the scenario where the thief takes all of your money. Being without your savings is worse than having them, both from your perspective when you still have your savings and from your perspective when you've had your money stolen. Agar is not making the analogous claim about radical enhancement. Just as it might be bad for a body snatcher to become a human, it might be bad for a radically enhanced person to be turned into the sort of being that we would currently understand as an unenhanced human. It's odd, therefore, for him to argue that "we are entitled to view the gradual transition as gradually eroding features of ourselves that we rightly value." (Agar 2013, p. 198). Each of the smaller transitions that make up the gradual process might preserve enough of what we value at that stage, so that there's no point at which we've turned ourselves into something it's bad for us to become. [64]

Does this mean we *should* take the gradual route? Not necessarily. A gradual transition might be the best option for someone who thinks they might benefit from radical enhancement, but wants to play it safe, leaving open the option, at each stage, to decide whether they want to continue, evaluating the degree to which they are benefitting from the enhancement, and the extent to which they are prepared to take any risks involved in continuing down that path. But enhancing gradually, rather than all at once, also comes with losses, in that the benefits come more slowly. Perhaps you have goals that can only be achieved, or can much more easily be achieved, if you become radically enhanced. Agar would probably respond that you shouldn't expect your goals to survive the enhancement process. This may be right, but if your goals that require or benefit from radical enhancement are replaced by other goals that also require, benefit from, or at least are not impeded by radical enhancement, no real harm has been done, at least from the perspective of the person using the enhancement. Some people might even have goals that take into account the likely changes brought about by enhancement; if cognitive or moral enhancement would be likely to improve your perspective, by your own lights as you are now, then it seems reasonable to now want whatever you will want after the enhancement.

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[64] It might be objected that this does not follow if one’s past values and perspectives also matter: a stage 9 being should not become a stage 10 being if, at some point in the past, they were a stage 1 being. But this would be inconsistent with Agar’s view. He thinks it could be bad for a body snatcher to become a human, even if that body snatcher was human in the past.

7.4 The Parallel with Growing Up

Transhumanists such as Bostrom have noted the similarities between radical enhancement and growing up. Becoming an adult, like becoming posthuman, involves dramatic increases in our capacities, and changes in our priorities and subjective experiences that are difficult to imagine prior to the change. Growing up shares many features that Agar finds objectionable in radical enhancement. Yet we don't think it's bad to grow up, and so we shouldn't think it's bad to become radically enhanced (Bostrom 2013; Bostrom and Ord 2006, p. 671).

Agar does not entirely reject the parallel between becoming an adult and becoming radically enhanced, and even draws upon it in some of his arguments. He thinks that, if we radically enhance, we will be alienated from many of our experiences from prior to the enhancement just as, in many ways, as adults, we are alienated from our childhood experiences. When we become adults, we don't become unable to play with the toys and games that fascinated us as children. Indeed, adults are better at these things, but they are no longer interested in their childhood activities. Agar thinks something similar might happen to us if we radically enhance. We may become better able to fulfil what were our goals as unenhanced humans, but as radically enhanced beings these goals will no longer interest us. We may even be unable to remember large parts of our lives from prior to the enhancement, just as adults are generally unable to remember their early childhood. Unenhanced experiences and achievements will seem insignificant to us because we will judge them by our radically enhanced standards (Agar 2010, ch. 9).

The difference between becoming an adult and becoming radically enhanced, in Agar's view, is that adulthood can be understood as a final stage, a point at which we have authority over our own lives, can make life plans, and have stable interests. The person who hopes to become radically enhanced must defer to their later self, as they don't know who they will become. If they continue to enhance, they will never have stable, settled interests. Agar 2013, ch. 4). Agar imagines a scenario in which people indefinitely go through successive stages, brought about by radical enhancement: childhood, followed by human adulthood followed by a posthuman stage, followed by a further enhanced posthuman stage, and so on. Agar's worry about this scenario is that it becomes a life devoted to enhancement, because enhancement is "the only motivational constant" in this life pattern. (ibid, p. 78). There is no stage that has final authority, that doesn't have to defer to the superior wisdom of a later stage. If you anticipate becoming radically enhanced, he suggests, your answer to the question “What do you stand for?” should be “I don’t know yet.” If we have confident answers to this question prior to enhancement, they "should be treated as dubious predictions of the desires of future, more enlightened selves." (ibid, p. 74)

If successful, these arguments only show that our enhancement of ourselves needs to come to an end, so we can reach a stage of full maturity when we can make authoritative life plans. They do not tell us where that endpoint should be. Moreover, it is doubtful that an endpoint is necessary. Agar thinks childhood should primarily be understood as preparation for adulthood (Agar 2013, p. 73). This accords with what Matthews and Mullin (2020) call an Aristotelian conception of childhood. This conception understands the human child as an immature human specimen which, by nature, has the potential to develop into a mature specimen with the form and function of a normal adult. One problem with this conception is that it draws attention away from the goods of childhood, encouraging an exclusive focus on the support children need to develop adult capacities. (ibid, sec. 1). [65] One might object that it is transhumanists whose views suffer from this problem, since they are, after all, the ones who are focused on the improvement of capacities. However, even if we reject the view that childhood is merely preparation for adulthood and recognise that children have their own valuable goals and projects, we can maintain that it is good for children to develop adult capacities. Once we reject the Aristotelian conception of childhood, it ceases to be a problem that our intellectual and emotional growth has no defined end point. Each stage of life is more than merely a prelude to or preparation for the next, radically enhanced stage, and can have its own valuable goals and projects. The same things might not be valuable to us throughout our lives, but they were valuable to us for a time, and that matters too.

I would also question whether a life devoted to increasing one's capacities is necessarily such a bad thing. While devoting one's life to enhancement might at first seem rather narrow, we often admire those who devote their lives to their own learning, improvement or personal growth. Think of athletes who devote themselves to running longer and longer distances, or mathematicians who devote themselves to solving ever more difficult

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[65] This conception of childhood also has problems for disabled people, particularly cognitively disabled people, who do not always develop in ways or within timespans taken as normal.

problems. We might think that a life should be focused not only on one's own personal development, but also on having a positive impact on others. But nothing about continuing to enhance indefinitely precludes this; after each radically enhanced stage, you might use your newly increased capacities to do good in the world.

If you have ambitions of becoming radically enhanced, you cannot be sure that the things that matter to you now will matter to your post-enhancement self. In that sense, your life plans are not final or decisive. But you cannot avoid this lack of finality by refusing to take up radical enhancement. You might undergo other transformative experiences, such as becoming a parent, which will dramatically change you. You might undergo a religious conversion. You might come to realise that the social cause to which you had devoted your life is actually hurting people. Or perhaps you had planned to devote your life to promoting transhumanism but reading Agar's books start you down the path towards thinking radical enhancement might not be such a good idea after all. Even the seemingly small changes caused by learning, or by moderate enhancements, can cause us to reevaluate our core commitments.

I have been defending the parallel between growing up and becoming radically enhanced, suggesting that Agar's arguments about the finality of adulthood do not demonstrate a significant difference between the two. I now want to use this analogy to examine another concern: that radical enhancement will be disappointing. In various essays Bostrom imagines the wonderful possibilities of being posthuman (Bostrom 2008, Bostrom 2013). Agar critiques these speculations on the basis that they neglect to consider the less pleasant aspects of life that will carry on as usual (Agar 2010, ch. 7). Perhaps Agar is right to say that radically enhanced beings will have problems omitted from Bostrom's descriptions. In fact, if Bostrom is right to suggest that our position with respect to posthumans is akin to the position of a child with respect to adults, then we should expect some disappointments. Think of the child who, at the age of 6, wants to become an astronaut. As she grows up, she may discover that this was never really a feasible career path for her. Alternatively, perhaps she does succeed in becoming an astronaut, but finds that it comes with difficulties that, as a child, she couldn't have imagined. Either outcome would be, in many ways, disappointing to her childhood self. As children we have all sorts of ideas about adulthood that don't reflect the full reality. As a grownup, you're allowed to stay up late every night. You can eat nothing but chocolate if you want. You don't have to go to school, and you can pick whichever job you like. Perhaps to a child, the realities and responsibilities of being an adult would be disappointing. Yet we don't think of this as a reason not to want to grow up. Being an adult has pleasures of its own, which children do not appreciate. Bostrom gives the example of falling in love. Children can find it difficult to understand the point of romantic love, even though it is one of the most valuable parts of many adults' lives. Radical enhancement may, likewise, bring pleasures that are difficult for us as unenhanced persons to understand. (Bostrom 2013, p. 38). The important question, then, is not simply whether radical enhancement will have disappointing aspects, but whether the goods it brings make it worthwhile despite the possible disappointments.

Consider the depiction of cognitive enhancement in Daniel Keyes's 1966 novel *Flowers for Algernon*. Charlie Gordon, a cognitively disabled man, is keen to try an experimental procedure that will increase his intelligence. As he sees it, he will get smart and everybody will like him and be proud of him for it. This turns out to be a rather naive view. After the procedure, he comes to realise that his colleagues at the bakery where he works, whom he had thought of as his friends, have actually been making fun of him and taking advantage of his disability. Far from being proud, the people in his life resent him for his increased cognitive capacities. He is disappointed to discover that the university professors he meets are narrow specialists who cannot easily converse with him on topics outside their area of expertise. But despite these disappointments, when he finds out that the capacity increase will be only temporary, and as his capacities decrease back to their level before the procedure, he falls into a depression and is deeply distressed by the loss (Keyes 2012).

As we contemplate the prospect of radical enhancement, we might be like Charlie before his procedure, or like children anticipating what it will be like to be adults. Our mental depictions of life after radical enhancement might be naive, omitting many of its downsides, but our enhanced capacities might nevertheless become valuable to us in ways that, from our current perspective, are difficult to understand. Of course, this is all speculative, but if the parallel between enhancement and growing up holds, it is probably a reasonable expectation.

7.5 Is Life Extension Different?

The points I have been making so far might seem to be inapplicable to life extension. In section 3, I argued that enhancing gradually would resolve many of the problems associated with radical enhancement. But life extension is already inherently gradual, in that it takes time for people to get old. Even if we could instantly provide anyone who wanted it with access to an intervention that would allow them to live for centuries, it would take hundreds of years until there were people who were hundreds of years old. Nobody instantly becomes a 300-year-old, and so if the perspective of a person of that age is radically different from the perspectives of people with what we would currently consider normal lifespans, then we attain that perspective gradually. In section 4, I discussed the parallel between radical enhancement and the more familiar transformation of growing up. But far from being transformational, life extension "promises to protect us from change—specifically from age-related change." (Agar 2013, p. 113). It attempts to maintain the status quo, in which we are alive, rather than allowing us to change from alive to dead. When combined with Paul's suggestion that "[y]our own death is the ultimate transformative experience" (Paul 2014, ch. 4, fn 6), radical life extension can be understood as aiming to avoid or at least delay a transformative change.

Yet Agar's arguments seem to suggest that life extension might alter our values in ways we should want to avoid. His main argument against the prudential value of life extension is that those who use it will become much more risk-averse. Much of what is pleasurable to us now will strike those with significantly longer lifespans as far too dangerous. If therapies are invented that halt or significantly slow down biological aging, this will not make us literally immortal. It will still be possible to die from accidents such as car crashes. Driving strikes most people as worth the risk now, but to those who have used life-extending therapies, it will seem reckless. (Agar 2010, ch. 6).

One might wonder what it is about these therapies that could change our values in this way. Is it a sudden change in values, analogous to the way that a person diagnosed with a terminal illness might reevaluate their priorities? As I interpret it, this would be an indirect effect. Compare someone who expects to die of a terminal illness within the next few weeks with someone who can expect another 50 years of life. We would probably expect the terminally ill person to be much more willing to take risks with their life. Perhaps they would be willing to take an unproven, experimental treatment. At worst the treatment will kill them a little sooner, but either way they don't have much to lose. We would expect that the person with 50 years left would be much less willing to do something similarly risky. If they do something that kills them now, they have lost 50 years of life. Now compare the person who can expect to live another 50 years with someone who can expect to live another 1000 years. The person with 50 years left understands that, if they drive, they could die in an accident, but driving still seems worth it. The person who can expect another 1000 years has much more potential life to lose from a car accident. Since the costs are so much greater, driving, to them, may not be worth the risk of death. This is not, then, an effect the therapies will have on us, but rather an effect of the realisation of how much more we have to lose from dying once it becomes possible to live much longer.

Unlike the other types of enhancement I have discussed, the transformative effects of life extension stem from the belief that you will have a long life, rather than being more direct effects of the enhancement process itself. If, as Agar suggests, those who have been given life extending therapies will become significantly more risk-averse, then so too will those who falsely believe they have been given such therapies, as well as those who are confident that radical life extension will be developed soon enough for them to personally benefit from it. These people expect centuries or even millennia of life, as do those who actually have been given these therapies, and will evaluate risks accordingly. By contrast, you can't get the transformative effects of radical cognitive enhancement without undergoing an enhancement process. There's a big difference between, on the one hand, someone who has undergone a radical cognitive enhancement process, and on the other hand, someone who falsely believes they have been given such an enhancement or expects to get it in the future. [66]

It seems odd, therefore, to use this sort of reasoning as the justification for rejecting life extension. If you reason that a dramatic increase in your potential lifespan would make ordinary activities too risky for you, this seems to imply that your life is already sufficiently valuable to you that it would be good to extend it. If you wouldn't want to do something that could deprive you of 1000 years of life, the extra 1000 years of life must be valuable to you, and so it makes little sense to deprive yourself of the extra years of life the therapies could offer you.

To illustrate this, consider what you might do if you thought you were overly risk-averse in the relevant way. Perhaps you have used life extending therapies and, exactly as Agar predicted, you have become unwilling to do anything that could possibly endanger your life. In fact, this has become a problem for almost everybody who has taken advantage of life extending therapies. As a solution, one company has developed life shortening

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[66] I’m assuming that radical cognitive enhancement involves a bigger change than is possible merely from a placebo.

therapies. These do not kill you instantly, but they do reduce your life expectancy. It seems doubtful that taking life shortening therapies will be an appropriate solution to your problem. That might be because your long life is still worthwhile to you, even if your life isn't quite as exciting as it used to be. But even if you want to regain your old willingness to take risks and are willing to accept a shortened life expectancy in exchange for some adventure, you don't actually need life shortening therapies. You can simply decide that, from now on, you will begin taking risks again, even though you know that one of them might kill you. In fact, if you are unwilling to undertake risky activities, it's hard to see what could motivate you to take the life shortening therapies, since your unwillingness to take risks stems from your desire for a long life. And if life shortening therapies would not be an appropriate solution to the problem of unwillingness to take risks, it's hard to see why avoiding life extension would be any better. The differences between them do not appear to be relevant to this problem.

One could perhaps respond by referring back to Agar's arguments about the rational irreversibility of some changes: it's bad for a person with a normal lifespan to become a person with a radically extended lifespan, but it might also be bad for a person with a radically extended lifespan to become (by our unenhanced standards) a person with a normal human lifespan. [67] If this is the case, it might be that we should avoid life extending therapies, and people with extended lifespans should avoid life shortening therapies. But the disanalogies I have been discussing between life extension and, for instance, cognitive enhancement make all the difference here. By the time you opt for life extending therapies, you already have the relevant evaluative standards. The therapies themselves don't change anything about how you evaluate your experiences, except, perhaps, to the extent that they make your longer lifespan more psychologically real to you. And since your evaluative standards are the same before and after the therapy, if it's good to retain your radically enhanced lifespan after the life extension treatment, by avoiding life shortening therapies, then it's good for you, as an unenhanced person, to take up life extending therapies.

Life extension, then, does not have the same difficulties as other transformative changes. To the extent that a longer lifespan transforms our perspective, it does so gradually, and as I argued earlier in this chapter, gradual enhancement solves many of the problems Agar has identified with transformative changes. Life extending therapies, by themselves, do not

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[67] To be clear, Agar himself does not make this argument in relation to life extension specifically.

transform our perspectives, so it is doubtful that they can be rationally irreversible in the way he thinks cognitive enhancements are. Perhaps Agar's arguments about risk-aversion are meant to suggest that a typical human lifespan is preferable to an extended lifespan, both from the enhanced and the unenhanced perspective. But it doesn't seem rational to reverse the change, and in fact the prediction that we will become more risk-averse depends on the assumption that we will value our longer lives. Unless your lifestyle is so risky that life extending therapies would not increase your life expectancy, or the therapies themselves are unacceptably risky or costly, then taking up life extension treatments would seem to be worthwhile if you value more years of life.

7.6 Why we Should Try out Radical Enhancement

Since we don't know what it would be like to be radically enhanced, many of the arguments against its prudential value are unwarranted. Consider, as an example, the popular perception that, if we lived for hundreds of years, we would run out of things to do and our lives would become boring (See e.g. Williams 1973 and Kass 2001). The people who make this argument have not lived for hundreds of years, and so they are not in a good epistemic position to make that judgement. They don't know what it's like to live that long. I'm inclined to think that there would still be plenty of interesting things to do even after centuries of life, and that whether one finds life boring or interesting does not depend on one's number of years lived. But the argument I just made could easily be turned against me here: I haven't lived for centuries, and so I'm not in a good epistemic position to make that judgement. I just don't know what it's like to live that long. For all I know, there could be something I can't understand about the lived experience of being a 300-year-old that makes life unbearably tiresome, even if you are healthy, have a good social circle, and opportunities for productive, meaningful and pleasurable activities. We won't know for certain unless we try it and find out, and as Harris (2002) suggests, trying it seems the appropriate response to this uncertainty. Agar thinks Harris may be right with respect to individuals deciding whether to undergo a life extending procedure, but that our uncertainty about its value is relevant to policy makers deciding whether, or to what extent, they should support research into life extension. "Money spent in pursuit of the uncertain value of radical life extension, for example, cannot be directed toward the proven value of new hospitals and vaccination campaigns." (Agar 2013, p. 60). But we haven't always had proof of the value of vaccinations, and other medical treatments had to be proven to work before we could be sure of their value. On the assumption that at least some of our resources should be invested in projects whose value is not entirely certain, research into radical enhancement would seem to be a good candidate.

In fact, it would be quite useful to have people who are willing to try out radical enhancements even though their benefits are not entirely certain, who can report back on the experience for the benefit of those who are still deciding whether to try it. While people who try out radical enhancement out of irrational optimism about its benefits can be useful to their community in this way, those who decide to try it might do so from a more considered perspective. Early adopters of these enhancements might, after carefully considering the uncertainties and potential downsides, decide that it's worth the risk to try it. Those who think they might be interested in these enhancements, but are more risk-averse, will then have more data on which to base their decision. If people begin to try out radical enhancements and find it a disappointing experience, we have learned something useful. The more people try out different types of enhancement, the more data we will have about which radical enhancements are beneficial and under what conditions, and the more certain we can be about which radical enhancements are worthy of future investments. That won't entirely solve the problems faced by individuals deciding whether to enhance. Even if everybody who has tried some enhancement has been unequivocally positive about it, that doesn't guarantee that you will have the same experience. Perhaps you are different from those people in some relevant way. But even if other people's assessments can't provide you with certainty, they can provide you with useful evidence.

This does not take into account the ethics of enhancement research. If, as Agar suggests, the research required to develop radical enhancements such as life extension would be immoral (Agar 2013, ch 6), then we shouldn't carry out that research just to find out what it's like to be radically enhanced. I haven't addressed this aspect of Agar's case, so I haven't provided an argument that, all things considered, we ought to develop radical enhancements. I think the considerations I have put forward do, however, provide an argument for developing these technologies, which would need to be weighed up against any reasons not to create them.

7.7 Conclusion

I have argued that some of the parallels with more familiar experiences point to the potential benefits of radical enhancement. I have defended the analogy between radical enhancement and growing up, a transformation we usually take to be beneficial. The transformational nature of radical enhancement doesn't necessarily make it undesirable, but for those who want to enhance but would prefer a less transformative experience, enhancing gradually might be a solution. Moreover, it is not necessarily irrational to opt for radical enhancement, even if we don't know what it will be like or how it might change us; we might want to have the revelation and find out who we'll become.

I have suggested that we should try out radical enhancement to find out what it's like, but this doesn't mean that every individual should try it. I think it's perfectly reasonable to decide that you don't want to undergo radical enhancement until other people have tried it first, so you can draw on their testimony in making your decision, or that you want the process to be gradual, or that you don't want to take up radical enhancement at all, perhaps because you are happy with your capacities as they are and don't want to risk a disappointing experience. In my discussion of disability and moderate enhancement in the previous chapter, I argued that increases in capacity are likely to be good for us in general, but that there may still be many people who rationally choose to forego enhancements or disability-removing processes. Although radical enhancement is more difficult to evaluate, extending a broadly similar approach seems reasonable.

Conclusion

This thesis has aimed to illustrate the benefits of bringing together perspectives on disability and enhancement, as well as to answer the question of which views on disability can be held in combination with which views on enhancement. I have argued that it is hard to justify holding a bad-difference view of disability in combination with opposition to enhancement. This implies that, if it's bad to be disabled, then enhancement is, in general terms, good for us. It also implies that, whatever concerns we should have about enhancement processes, we should have the same concerns about disability-removing processes. Disability-positive views such as the MDV have commitments in common with both supporters and opponents of enhancement. If one rejects the BDV, what one's view of enhancement should be will depend on the details of one's view about disability. On a strong reading of the social model, which attributes the bad aspects of being disabled entirely or almost entirely to society, and holds that we should rectify these problems by changing society rather than by altering disabled people's bodies, enhancement makes little sense. However, it's not really plausible to attribute all of the substantial bad aspects of disability to society, and it's possible to reject the BDV without doing this. According to the value-neutral model, disabilities, as bodily properties, do have substantial bad aspects that cannot be rectified through social reform. They are nevertheless neutral because there are also goods unique to disability. On a view such as this, even if disability is, on the whole, a mere-difference rather than a bad-difference, not everybody necessarily likes being disabled. Some people might be better off if they have their disabilities removed, even if that's not the case for everyone. Likewise, some people might be better off if they use enhancements, even if we shouldn't expect any given enhancement to reliably increase well-being for most people. Enthusiasm for enhancement needn't be accompanied by the belief that disability is always or usually undesirable; it can arise out of the belief that different traits are beneficial for different people, alongside a commitment to bodily autonomy.

In addition to mapping out which of the existing positions are consistent with each other, I have developed my own view. This view understands disabilities as a type of limitation, and enhancements as interventions that add or increase capacities, where the category of enhancements includes interventions that remove disability. The value of disabilities and enhanced traits can thus be assessed by asking whether it is bad to have limitations and whether it is better to have more capacities. In answer to these questions, I argued that increased capacities are, in general or on average, good for people, but what is true on average is not necessarily true in particular cases. In some cases, disabilities and other limitations are neutral or positive, and even if disability is somewhat bad on average, it is not as bad, on average, as is often assumed.

This view gives us reason to develop enhancement technologies, including those that remove disability. Developing these technologies is good for bodily autonomy, and many people will benefit from increasing their capacities. Developing these technologies may even be an important goal, although it will need to be supplemented by social reforms that create circumstances within which people can genuinely choose whether to use them or not. More generally, these interventions should be a supplement to, rather than a substitute for, social change. Developing enhancements (broadly understood to include disability-removing processes) alongside the kinds of social change promoted by the disability rights movement, can help to protect against mistaken judgements about which traits are valuable. On the one hand, creating more accessible environments helps to make it possible to live with disabilities, limitations, and other bodily and cognitive traits that might differ from the norm. The more accessible the environment is, and the more we can eradicate discriminatory attitudes towards disabled people, the more we can be sure that decisions to remove disability, or to enhance beyond that, are not merely responses to ableist social circumstances. Social accommodation is not merely a second-best option, necessary only until we can find cures for disability. On the other hand, the more we develop enhancements and other technologies that modify bodily and cognitive states, the more we can be sure that decisions to forego these modifications are not mere adaptation to a suboptimal status quo.

Readers may, at this point, want to say that my arguments do not show that we *should* develop enhancement technologies, since there are many ethical issues I have not covered. Indeed, I have not addressed, for instance, the ethics of enhancement research. I have, however, argued against the treatment/enhancement distinction, which means that to the extent that we ought to develop treatments for disorders, we also ought to develop corresponding enhancements. I also argued, in chapter 3, that we cannot assume enhancements are a luxury, something perhaps nice to have but inessential. If we cannot develop or provide to people all of the biomedical interventions we ideally would, if we must choose some to prioritise over others, we should not make these decisions on the basis of which ones are treatments and which ones are (non-therapeutic) enhancements.

In chapters 5 and 6, I concurred with Schroeder (2015) that diseases and disabilities that cause pain or distress are more straightforwardly bad than are those that primarily cause limitations, and that our limited lifespans may be more detrimental than other limitations. It's plausible, then, that if we must prioritise, we should prioritise interventions that directly alleviate suffering over those that only remove limitation or increase capacity. This won't always correspond to where the line between treatment and enhancement is typically drawn. It may be that, for instance, anti-aging research is more important than developing cures for non-painful conditions that cause blindness. Biological aging processes both limit our lifespans and put older people at greater risk of diseases that cause pain and other negative phenomenological states, whereas blindness only limits capability. This point about the difference between anti-aging research and research into disability-removing processes is further supported by my argument from chapter 1 suggesting that disability-positive testimony may be more reliable than testimony from people who say they would not want to extend their lives.

Enhancement of mood, too, may be a higher priority than interventions that remove non-painful disabilities and other limitations. Admittedly I have not, to this point, discussed emotional enhancements of any sort, and so I have not addressed objections specific to it. But what I have said about the difference between limitation and suffering, and the insignificance of the treatment/enhancement distinction, does at least suggest that we should be open to the possibility that some kinds of emotional distress, including forms of distress that would not normally be understood as disordered, might be more detrimental than non-painful disabilities and other limitations. If there are some forms of emotional distress that should be altered, and others that should not, we should not be too quick to assume that this line should be drawn in the same place that we would typically draw the line between treatment and enhancement.

Thus, doing away with the treatment/enhancement distinction enables us to think more clearly about which features of the biomedical interventions we want to use or develop make a morally significant difference to the actions we should take as individuals and to the policies we should adopt.

A single thesis can only cover so much ground, and there are many complicated issues I have not fully addressed in this project. Although there has been some discussion of cognitive disability, I have not provided a detailed treatment of the ways in which it raises distinctive issues. One issue worth further attention is when, if ever, it would be appropriate to remove or lessen the severity of cognitive disabilities. In the case of physical disabilities, we can say that the disability should be removed only if the person wants to have it removed. The same view will extend to many cases of cognitive disability, but not all. If the person cannot form or express a preference, what criteria should we use in deciding whether to remove the disability? Should we ever remove the disability in these cases?

This thesis has, of course, focused on disability, but enhancement might raise questions specific to other marginalised groups. I have already mentioned the connections between enhancement and transness, and this is an area worthy of further research. It might seem less obvious that enhancement raises questions pertinent specifically to, for instance, race, but this does not mean that there is nothing to be discussed here. In any case, the potential for prejudice and bigotry to taint our judgements about which traits are valuable and which ones are worth enhancing is relevant to all marginalised groups, and so fully addressing it requires engagement with a variety of perspectives and alertness to multiple forms of marginalisation. Moral enhancement is especially puzzling in this regard: as discussed in chapter 3 with respect to disability, on the one hand, our prejudices might lead us to wrongly conclude that certain kinds of people are especially morally defective and in need of improvement, but on the other hand, moral enhancement might be necessary or at least helpful in significantly reducing social oppression. [68] Yet if oppressions such as racism, sexism and ableism are best understood as structural, rather than as a matter of individual psychological dispositions, to what extent, if at all, would it make sense to use moral enhancement in tackling them?

Finally, as enhancements develop further, our increased control over our physical and cognitive traits and capacities will raise additional ethical quandaries and make existing ethical issues more urgent. When, for instance, is it permissible for employers to require that their employees take up enhancements? We often think that disability ought to be a protected characteristic, that employers ought not to discriminate against potential employees on the basis of disability. If a given enhancement becomes expected by most employers, it may become a requirement in practice, even if it is not legally mandatory. Concerns for equality and bodily autonomy, then, seem to count against allowing

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[68] For more on the potential for moral enhancement to reduce racism and sexism, see Gordon (forthcoming).

employers to require enhancements. Yet we usually think that even the traits that currently count as disabilities preclude certain jobs. If you are disabled, in many cases there are some jobs that won't be open to you, however accommodating the employer is. Might the same be true of some unenhanced traits? How do we weigh the equality and bodily autonomy concerns just mentioned against the potential for enhancements to increase performance? Might the appropriate tradeoff be different in different sectors?

As the questions raised in the previous paragraphs show, the topic of this thesis remains a promising area for further research.

References

Agar, N. (2004) *Liberal Eugenics: In Defense of Human Enhancement*. Malden, MA: Blackwell Publishing.

Agar, N. (2010) *Humanity's end: why we should reject radical enhancement*. Cambridge, MA: MIT Press.

Agar, N. (2013) *Truly human enhancement: a philosophical defense of limits*. Cambridge, MA: MIT Press.

Albrecht, G. L. and Devlieger, P. (1999) ‘The Disability Paradox: High Quality of Life Against the Odds’, *Social Science and Medicine,* 48: pp. 977–988.

Amundson, R. (2000) ‘Against Normal Function'’, *Studies in History, Philosophy, Biology and Biomedical Science,* 31 (1): pp. 33–53.

Amundson, R. (2005) ‘Disability, Ideology, and Quality of Life: A Bias in Biomedical Ethics’, in D. Wasserman, D. Bickenbach, J. and Wachbroit R. (eds.), *Quality of Life and Human Difference*. Cambridge: Cambridge University Press, pp. 101–124.

Andric, V. and Wundisch, J. (2015) ‘Is It Bad to Be Disabled? Adjudicating Between the Mere- Difference and Bad-Difference Views of Disability’, *Journal of Ethics and Social Philosophy,* 9:3, pp. 1–16.

Asch, A. and Wasserman, D. (2005) ‘Where Is the Sin in Synecdoche? Prenatal Testing and the Parent-Child Relationship’, in Wasserman, D. Wachbroit, R. and Bickenbach, J. (Eds) *Quality of Life and Human Difference: Genetic Testing, Health Care, and Disability*. Cambridge: Cambridge University Press, pp. 172–216.

Ásta, (2018) *Categories We Live By: The Construction of Sex, Gender, Race, and Other Social Categories*. Oxford: Oxford University Press.

Barclay, L. (2010) ‘Disability, Respect and Justice’, *Journal of Applied Philosophy,* 27(2) pp. 154–171.

Barclay, L. (2011) ‘Justice and Disability: What Kind of Theorizing Is Needed?’, *Journal of Social Philosophy* 42(3) pp. 273–287.

Barclay, L. (2016) ‘A natural alliance against a common foe? Opponents of enhancement and the social model of disability’, in Clarke, S., Savulescu, J., Coady, C.A.J., Guibilini, A., and Sanyal, S. (eds.) *The Ethics of Human Enhancement: Understanding the Debate*. Oxford: Oxford University Press, pp. 75-86.

Barclay, L. (2018) *Disability with dignity: Justice, human rights and equal status*. New York: Routledge.

Baril, A. (2015a) ‘Transness as Debility: Rethinking Intersections between Trans and Disabled Embodiments’, *Feminist Review,* 111(1): pp. 59–74.

Baril, A. (2015b) ‘“How Dare You Pretend to Be Disabled?” The Discounting of Transabled People and Their Claims in Disability Movements and Studies’, *Disability and Society*, 30(5): pp. 689–703.

Baril, A. (2015c) ‘Needing to acquire a physical impairment/disability:(re) thinking the connections between trans and disability studies through transability’, *Hypatia,* 30(1), pp.30-48.

Barnes, C. (2012) ‘Understanding the social model of disability’, in Watson, N. Roulstone, A. and Thomas, C. (Eds.) *Routledge Handbook of Disability Studies*. Abingdon, Routledge, pp. 12–29.

Barnes, E. (2009) ‘Disability and adaptive preference’, *Philosophical perspectives,* 23, pp.1-22.

Barnes, E. (2016) *The minority body: A theory of disability*. Oxford: Oxford University Press.

Barnes, E. (2018) ‘Against impairment: replies to aas, Howard, and Francis’, *Philosophical Studies*, 175(5), pp.1151-1162.

Bickenbach, J.E. (2009) ‘Disability, non-talent and distributive justice’, in Kristiansen, K., Vehmas, S. and Shakespeare, T. eds., '*Arguing about disability: Philosophical perspectives*. Routledge, pp. 105-123.

Blom, R.M., Hennekam, R.C. and Denys, D., (2012) ‘Body integrity identity disorder’ *PLoS one*, 7(4) https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0034702 accessed 9 July 2022.

Boorse, C. (1975) ‘On the distinction between disease and illness’ *Philosophy and Public Affairs* 5(1): pp. 49–68.

Boorse, C. (1977) ‘Health as a Theoretical Concept’. *Philosophy of Science* 44: pp. 542–573.

Bostrom, N. (2003) ‘Human Genetic Enhancements: A Transhumanist Perspective’, *The Journal of Value Inquiry*, 37: pp. 493–506.

Bostrom, N. (2005a) ‘Transhumanist values’ *Journal of philosophical research,* 30(Supplement), pp.3-14.

Bostrom, N. (2005b) ‘The Fable of the Dragon-Tyrant’ *Journal of Medical Ethics* 31(5): pp. 273–277.

Bostrom, N. (2005c) ‘A history of transhumanist thought’, *Journal of evolution and technology*, 14(1) pp. 1-25.

Bostrom, N. (2007) ‘Humanity’s Biggest Problems Aren’t What You Think They Are’ *TED*. http://www.youtube.com/watch?v=Yd9cf_vLviI. Accessed 22nd April 2021

Bostrom, N. 2008. ‘Letter from utopia’, *Studies in Ethics, Law, and Technology*, 2(1). https://nickbostrom.com/utopia accessed 3 May 2022.

Bostrom, N. (2013) ‘Why I Want to Be a Posthuman When I Grow Up’, in More, M. and Vita-More, N. (eds.) *The transhumanist reader: Classical and contemporary essays on the* *science, technology, and philosophy of the human future*. Chichester: Wiley Blackwell, pp. 28-53.

Bostrom, N. and Ord, T. (2006) ‘The reversal test: eliminating status quo bias in applied ethics’, *Ethics*, 116(4), pp.656-679.

Bostrom, N. and Sandberg, A. (2009a) ‘Cognitive enhancement: methods, ethics, regulatory challenges’ *Science and engineering ethics* 15(3), pp.311-341.

Bostrom, N. and Sandberg, A. (2009b) ‘The Wisdom of Nature: An Evolutionary Heuristic for Human Enhancement’ in Bostrom, N and Savulescu, J. (eds.) *Human Enhancement*. Oxford: Oxford University Press, pp. 375-416

Bovens, L. (1992) ‘Sour grapes and character planning’, *The Journal of Philosophy*, 89(2), pp.57-78.

Bradford, G. (2013) ‘The value of achievements’, *Pacific Philosophical Quarterly*, 94(2), pp.204-224.

Brock, D. (2005) ‘Preventing genetically transmitted disabilities while respecting persons with disabilities’, in Wasserman, D. Bickenbach, J. And Wachbroit, R. (Eds.) *Quality of life and human difference: Genetic testing, health care and disability*. Cambridge: Cambridge University Press, pp. 67–100.

Bruckner, D.W. (2009) ‘In defense of adaptive preferences’, *Philosophical studies* 142(3), pp.307-324.

Buchanan, A. (2011) *Better than human: the promise and perils of enhancing ourselves*. Oxford: Oxford University Press.

Buchanan, A., Brock, D., Daniels, N. and Wikler, D. (2000) *From Chance to Choice: Genetics and Justice*. Cambridge: Cambridge University Press.

Campbell, S. and Stramondo, J. (2017) ‘The complicated relationship of disability and well-being’, *Kennedy Institute of Ethics Journal* 27(2), pp.151-184.

Campbell, S. and Wasserman, D. (2020) ‘A Symmetrical View of Disability and Enhancement’ in Wasserman, D. and Cureton, A. (eds.) *The Oxford Handbook of Philosophy and Disability,* Oxford: Oxford University Press, pp. 561-579.

Campbell, S., Stramondo, J. and Wasserman, D. (2021) ‘How to (Consistently) Reject the Options Argument’, *Utilitas*, 33(2), pp.237-245.

Carter, J. A. and Gordon, E. C. (2013) ‘Intelligence, wellbeing and procreative beneficence’ *Journal of applied philosophy*, 30(2), pp.122-135.

Carter, J. A. and Gordon, E. C., (2015) ‘On Cognitive and Moral Enhancement: A Reply to Savulescu and Persson’, *Bioethics*, 29(3), pp.153-161.

Carter, J. A. and Pritchard, D. (2019) ‘The Epistemology of Cognitive Enhancement’, *The Journal of Medicine and Philosophy*, 44(2): pp. 220–242.

Chalmers, D. (2010). ‘The Singularity: A Philosophical Analysis’, *Journal of Consciousness Studies,* 17(9–10) pp. 7–65.

Chambers, B. (2021) *The Galaxy, and the Ground Within*. London: Hodder and Stoughton.

Clare, E. (2017) *Brilliant Imperfection: Grappling with Cure*. Durham, NC: Duke University Press.

Clark, A. (2003) *Natural-Born Cyborgs: Minds, Technologies, and the Future of Human Intelligence*. New York: Oxford University Press.

Clark, A. and Chalmers, D. (1998) ‘The extended mind’ *Analysis*, 58(1), pp.7-19.

Clarke, S. (2016) ‘The reversal test, status quo bias, and opposition to human cognitive enhancement’ *Canadian Journal of Philosophy*, 46(3), pp.369-386.

Crawley, T. (2020) ‘Disability, Options and Well-Being’, *Utilitas*, 32(3), pp.316-334.

Crawley, T. (2022) ‘What Is the Bad-Difference View of Disability?’ *Journal of Ethics and Social Philosophy* 21 (3) pp. 422-451.

Crisp, R. (2003) ‘Equality, Priority and Compassion’ *Ethics*, 113, pp. 745-763.

Daniels, N. (2000) ‘Normal Functioning and the Treatment-Enhancement Distinction’, *Cambridge Quarterly of Healthcare Ethics*, 9(03): pp. 309–322.

Davis, J.L. (2012) ‘Narrative construction of a ruptured self: stories of Transability on transabled.org’ *Sociological Perspectives*, 55(2), pp.319-340.

Earp, B., Sandberg, A. and Savulescu, J. (2012) ‘Natural Selection, Childrearing, and the Ethics of Marriage (and Divorce): Building a Case for the Neuroenhancement of Human Relationships’ *Philosophy and Technology* 25(4): pp. 561-587.

Earp, B., Sandberg, A., Kahane, G., and Savulescu, J. (2014) ‘When is Diminishment a Form of Enhancement? Rethinking the Enhancement Debate in Biomedical Ethics’, *Frontiers in Systems Neuroscience* 8(12): pp. 1–7.

Edey, R., Cook, J., Brewer, R., Johnson, M. H., Bird, G., and Press, C. (2016) ‘Interaction takes two: Typical adults exhibit mind-blindness towards those with autism spectrum disorder’ *Journal of Abnormal Psychology,* 125(7) pp. 879–885.

First, M.B. and Fisher, C.E. (2012) ‘Body integrity identity disorder: the persistent desire to acquire a physical disability’, *Psychopathology*, 45(1), pp.3-14.

Fricker, M. (2007) *Epistemic injustice: Power and the ethics of knowing*. Oxford: Oxford University Press.

Friedman, M. (2003) *Autonomy, Gender, Politics*. New York: Oxford University Press.

Fukuyama, F. (2002) *Our Posthuman Future: Consequences of the Biotechnology Revolution*. New York. Farrar, Strauss and Giroux.

Garland-Thomson, R. (2011) ‘Misfits: A Feminist Materialist Disability Concept’, *Hypatia*, 26(3), pp.591-609.

Garland-Thomson, R. (2012) ‘The case for conserving disability’ *Journal of bioethical inquiry*, 9(3), pp.339-355.

Giubilini, A. and Minerva, F. (2019) ‘Enhancing Equality’ *The Journal of Medicine and Philosophy*, 44(3): pp. 335–54.

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), pp.125-135.

Gordon, E.C. (2022) ‘Cognitive Enhancement, Hyperagency, and Responsibility Explosion’, draft manuscript.

Gordon E.C. (Forthcoming) ‘Gender, Race, and Moral Enhancement’ in Edwards, M. and Palermos, O. (eds.) *Feminist Philosophy and Emerging Technologies*. Routledge.

Green, J. (2020) *Becoming a visible man, 2nd ed*. Nashville, TN: Vanderbilt University Press.

Gyngell, C. and Selgelid, M. J. (2016) ‘Human Enhancement: Conceptual Clarity and Moral Significance’, in Clarke, S., Savulescu, J., Coady, C.A.J., Guibilini, A., and Sanyal, S. (eds.),. *The Ethics of Human Enhancement: Understanding the Debate*. Oxford: Oxford University Press, pp. 111-126

Hall, K.Q., (2009) ‘Queer breasted experience’ in Shrage, L. (ed.) *You've Changed: Sex Reassignment and Personal Identity*. Oxford: Oxford University Press, pp. 121-134.

Hall, M. (2013) ‘Vile Sovereigns in Bioethical Debate’, *Disability Studies Quarterly*, 33(4) http://dsq-sds.org/article/view/3870 accessed 10 February 2021

Hall, M. (2016) *The Bioethics of Enhancement: Transhumanism, Disability, and Biopolitics*. Lanham, MD: Lexington books.

Hall, M. (2020) 'Second Thoughts on Enhancement and Disability' in Wasserman, D. and Cureton, A. (eds.) *The Oxford Handbook of Philosophy and Disability*. Oxford: Oxford University Press, pp. 633-650

Hamraie, A. (2017) *Building Access: Universal Design and the Politics of Disability*. Minneapolis, MN: University of Minnesota Press.

Haraway, d. (1991) 'A Cyborg Manifesto: Science, Technology, and Socialist Feminism in the Late Twentieth Century' in her *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York: Routledge, pp. 149–181.

Harman, E. (2009) '"I'll be glad I did it" reasoning and the significance of future desires', *Philosophical Perspectives,* 23 pp. 177–99.

Harris, J. (1993) 'Is gene therapy a form of eugenics?' *Bioethics*, 7(2-3), pp.178-187.

Harris, J. (2000) 'Is there a coherent social conception of disability?' *Journal of medical ethics* 26(2) pp. 95-100.

Harris, J. (2001) 'One principle and three fallacies of disability studies' *Journal of Medical Ethics*, 27(6), pp.383-387.

Harris, J. (2002) A response to Walter Glannon. *Bioethics*, 16(3), pp.284-291.
Harris, J. (2007). *Enhancing evolution: The ethical case for making better people*. Princeton:Princeton University Press.

Harris, J. (2011) 'Moral enhancement and freedom', *Bioethics*, 25(2), pp.102-111.

Haslanger, S. (2012a) 'Gender and Race: (What) Are They? (What) Do We Want Them to Be?' in her *Resisting reality: Social construction and social critique*. Oxford: Oxford University Press, pp. 221-247.

Haslanger, S. (2012b) ‘Ontology and Social Construction’ in her *Resisting reality: Social construction and social critique*. Oxford: Oxford University Press, pp. 83-112.

Hauskeller, M. (2016) ‘Levelling the Playing Field: On the Alleged Unfairness of the Genetic Lottery’ in Clarke, S., Savulescu, J., Coady, C.A.J., Guibilini, A., and Sanyal, S. (eds.),. *The Ethics of Human Enhancement: Understanding the Debate* Oxford: Oxford University Press, pp. 198-210.

Hester, H. (2018) *Xenofeminism (Theory Redux)* Cambridge: Polity Press.

Holtug, N. (2011). ‘Equality and the treatment-enhancement distinction’, *Bioethics* 25(3), pp. 137-144.

Howard, D. and Aas, S. (2018) ‘On valuing impairment’, *Philosophical Studies*, 175(5), pp.1113-1133.

Jenkins, K. (2016) ‘Amelioration and Inclusion: Gender Identity and the Concept of Woman’, *Ethics*, 126(2): pp. 394–421.

Jenkins, K. and Webster, A. (2021) ‘Disability, Impairment, and Marginalised Functioning’ *Australasian Journal of Philosophy*, 99(4), pp.730-747.

Juengst, E. and Moseley, D. (2019) ‘Human Enhancement’, in Zalta E.N. (ed.) *The Stanford Encyclopedia of Philosophy* (Summer 2019 Edition). https://plato.stanford.edu/archives/sum2019/entries/enhancement/ accessed 31 July 2022.

Kafer, A., (2013) *Feminist, queer, crip*. Bloomington: Indiana University Press.

Kahane, G. and Savulescu, J. (2009) ‘The Welfarist Account of Disability’, in Brownlee, K. and Cureton, A. (Eds.) *Disability and Disadvantage*. Oxford: Oxford University Press, pp. 14–53.

Kahane, G. and Savulescu, J. (2016). ‘Disability and mere difference’, *Ethics*, 126(3), pp.774-788.

Kahneman, D., and Tversky, A. (1984) ‘Choices, values, and frames’ *American Psychologist* 39(4), pp. 341-350.

Kass, L. (2001) L’chaim and Its Limits: Why Not Immortality? *First Things* 113 (May): pp. 17–25.

Kass, L. (2003) Ageless bodies, happy souls: biotechnology and the pursuit of perfection. *The New Atlantis*, (1), pp.9-28.

Keyes, D. (2012) *Flowers for Algernon: A Modern Literary Classic* London: Gollancz.

Kittay, E.F. (2019) *Learning from my daughter: The value and care of disabled minds*. Oxford: Oxford University Press.

Laboria Cuboniks, 2015. ‘Xenofeminism: A Politics for Alienation’. https://laboriacuboniks.net/manifesto/xenofeminism-a-politics-for-alienation/ accessed 21 July 2022.

Le Guin, U.K. (2003) *Changing Planes: Armchair Travel for the Mind*. London: Gollancz.
Lester, C.N. (2017) *Trans like me: A journey for all of us*. London: Virago.

Levin, S. (2021) *Posthuman Bliss? The Failed Promise of Transhumanism*. New York: Oxford University Press.

Lewens, T. (2009) ‘What Are “Natural Inequalities”?’ *The Philosophical Quarterly*, 60(239): pp. 264–285.

Martino, A.S. and Andrejek, N. (2019) ‘Normal/Deserving Citizens and the Transabled Other: A Sociological Analysis of Online Commenters Reactions to Transability’, *Deviant Behavior*, 40(12), pp.1574-1586.

Matthews, G. and Mullin, A. (2020) ‘The Philosophy of Childhood’, in Zalta, E.N. (ed.) *The Stanford Encyclopedia of Philosophy* (Fall 2020 Edition) https://plato.stanford.edu/archives/fall2020/entries/childhood/

Meyers, D. T. (1987) ‘Personal Autonomy and the Paradox of Feminine Socialization’, *Journal of Philosophy*, 84, pp. 619–628.

Minerva, F. and Giubilini, A. (2018) ‘From assistive to enhancing technology: should the treatment-enhancement distinction apply to future assistive and augmenting technologies?’ *Journal of medical ethics*, 44(4), pp.244-247.

Nagel, T. (1979). ‘Death’ in his *Mortal Questions* Cambridge: Cambridge University Press, pp. 1-11.

Nebel, J. M. (2015) ‘Status quo bias, rationality, and conservatism about value’. *Ethics* 125 (2), pp. 449–76.

Nussbaum, M.C. (2000) *Women and human development: The capabilities approach*. Cambridge: Cambridge university press.

O'Connell, M. (2017) *To be a machine: Adventures among cyborgs, utopians, hackers, and the futurists solving the modest problem of death*. London: Granta books.

Overall, C. (2006) ‘Old age and ageism, impairment and ableism: Exploring the conceptual and material connections’, *NWSA Journal*, 18 (1) pp.126-137.

Overall, C. (2009) ‘Life Enhancement Technologies: Significance of Social Category Membership’, in Bostrom, N and Savulescu, J. (eds.), *Human Enhancement*. Oxford: Oxford University Press, pp. 327-340.

Overall, C. (2011) ‘Life Span Extension: Metaphysical Basis and Ethical Outcomes’, In Savulescu, j. Ter Meulen, r. And Kahane, G. (eds.), *Enhancing Human Capacities*. Wiley-Blackwell. pp. 386-397.

Overall, C. (2012) *Why have children?: The ethical debate.*. Cambridge, MA: MIT press.

Paul, L. A. (2014) *Transformative Experience*. Oxford: Oxford University Press.

Pearce, R. (2018). *Understanding trans health: Discourse, power and possibility*. Bristol: Policy Press.

Persson, I. and Savulescu, J. (2008) The perils of cognitive enhancement and the urgent imperative to enhance the moral character of humanity. *Journal of applied philosophy*, 25(3), pp.162-177.

Persson, I. and Savulescu, J. (2012) *Unfit for the Future: The Need for Moral Enhancement*. Oxford: Oxford University Press.

Powell, R. And Buchanan, A. (2011) Breaking Evolution's Chains: The Promise of Enhancement by Design. in Savulescu, j. Ter Meulen, r. And Kahane, G. (eds.), *Enhancing Human Capacities*, Wiley-Blackwell, pp. 49-67.

Price, M. (2015). ‘The bodymind problem and the possibilities of pain’ *Hypatia*, 30(1), pp.268-284.

Ray, K. S., (2016) ‘Not just “study drugs” for the rich: stimulants as moral tools for creating opportunities for socially disadvantaged students’, *The American Journal of Bioethics* 16(6), pp.29-38.

Resnik, D. (2000) ‘The Moral Significance of the Therapy-Enhancement Distinction in Human Genetics’ *Cambridge Quarterly of Healthcare Ethics*, 9: pp. 365–77.

Roskies, A. (2021) ‘Neuroethics’ in Zalta, E.N. (ed.) *The Stanford Encyclopedia of Philosophy* (Spring 2021 Edition), https://plato.stanford.edu/archives/spr2021/entries/neuroethics/ accessed 31 August 2021.

Rothblatt, M. (2013) ‘Mind is Deeper Than Matter’, in More, M. and Vita-More, N. (eds.) *The transhumanist reader: Classical and contemporary essays on the science, technology, and philosophy of the human future*. Chichester: Wiley Blackwell, pp. 317-326.

Rubix, (2011) ‘Disability Culture Meets the Transhumanist Condition’ *Less Wrong* https://www.lesswrong.com/posts/yzMbHLNdzzmsS8EB4/disability-culture-meets-the-transhumanist-condition accessed 9 August 2022.

Samaha, A.M., (2007) 'What good is the social model of disability?' *The University of Chicago Law Review*, 74(4), pp.1251-1308.

Sandberg, A., (2013) 'Morphological Freedom-Why we not just want it, but need it' in More, M. and Vita-More, N. (eds.), *The transhumanist reader: Classical and contemporary essays on the science, technology, and philosophy of the human future*. Chichester: Wiley Blackwell, pp.56-64.

Sandel, M. (2004) 'The Case Against Perfection'. *The Atlantic*. https://www.theatlantic.com/magazine/archive/2004/04/the-case-against-perfection/302927/ accessed 3 August 2022.

Saul, J. (2013) 'Scepticism and implicit bias' *Disputatio*, 5(37), pp.243-263.

Savulescu, J. (2001) 'Procreative Beneficence: Why We Should Select the Best Children', *Bioethics*, 15: pp. 413-426.

Savulescu, J., Sandberg, A. and Kahane, G. (2011). 'Well-being and enhancement', in J. Savulescu, R. ter Meulen, and G. Kahane, (eds.), *Enhancing Human Capacities*, New York: Wiley-Blackwell, pp. 3-18.

Schermer, M. (2008) 'Enhancements, easy shortcuts, and the richness of human activities', *Bioethics*, 22(7), pp.355-363.

Schroeder, S.A. (2015) 'Health, disability, and well-being', in Fletcher, G. (Ed) *The Routledge handbook of philosophy of well-being*. London: Routledge, pp. 221-232.

Schroeder, S.A. (2018) 'Well-Being, Opportunities, and Selecting for Disability', *Journal of Ethics and Social Philosophy*, 14, pp.1-27..

Schwartz, J.S. (2020) 'The accessible universe: On the choice to require bodily modification for space exploration', in Szocik, K. (Ed) *Human Enhancements for Space Missions*. Springer Cham, pp. 201-215.

Scully, J. L. and Rehmann-Sutter, C. (2001) 'When Norms Normalize: The Case of Genetic "Enhancement"' *Human Gene Therapy*, 12: pp.87–95.

Shakespeare, T. (2013) *Disability rights and wrongs revisited*. London: Routledge.

Sheppard, E., Pillai, D., Wong, G. T. L., Ropar, D. And Mitchell, P. (2016) 'How easy is it to read the minds of people with autism spectrum disorder?' *Journal of Autism and Developmental Disorders,* 46(4) pp. 1247–1254.

Silvers, A. (1998) 'A Fatal Attraction to Normalizing: Treating Disabilities as Deviations from "Species-Typical" Functioning', in E. Parens (ed.), *Enhancing Human Traits*, Washington: Georgetown University Press, pp. 95–123.

Silvers, A. (2005) People with Disabilities in LaFollette, H. (ed.) *The Oxford Handbook of Practical Ethics* Oxford: Oxford University Press, pp. 100-128.

Silvers, A. (2008) 'The right not to be normal as the essence of freedom', *Journal of Evolution and Technology*, 17(2): pp. 78–84.

Sparrow, R. (2011) 'A not-so-new eugenics: Harris and Savulescu on human enhancement', *The Hastings Center Report*, 41(1), pp.32-42.

Sparrow, R. (2014) 'Egalitarianism and moral bioenhancement' *The American Journal of Bioethics* 14(4), pp.20-28.

Sparrow, R. (2015) 'Imposing genetic diversity'. *American Journal of Bioethics* 15(6): pp. 2–10.

Stoljar, N. (2018) 'Feminist Perspectives on Autonomy', in Zalta, E.N. (ed.) *The Stanford Encyclopedia of Philosophy* (Winter 2018 Edition), https://plato.stanford.edu/archives/win2018/entries/feminism-autonomy accessed 8 March 2021

Stramondo, J.A. (2019) ‘The distinction between curative and assistive technology’, *Science and engineering ethics*, 25(4), pp.1125-1145.

Stramondo, J.A. and Campbell, S.M. (2020) ‘Causing Disability, Causing Non-Disability: What's the Moral Difference?’, in Wasserman, D. and Cureton, A. (eds), *The Oxford Handbook of Philosophy and Disability*, Oxford: Oxford University Press, pp. 138-157.

Tremain, S. (2001) ‘On The Government of Disability’ *Social Theory and Practice*, 27, pp. 617–636.

Tremain, S. (2017) *Foucault and Feminist Philosophy of Disability*. Ann Arbor: University of Michigan Press.

Tremain, S., Dryden, J., McWhorter, L., Clune-Taylor, C., and Hall, M. (2019) ‘Commemorating Foucault I: Symposium on Hall’s The Bioethics of Enhancement’, *Biopolitical Philosophy* https://biopoliticalphilosophy.com/2019/06/25/commemorating-foucault-i-symposium-on-halls-the-bioethics-of-enhancement/ accessed 13 January 2022.

Ubel, P.A., Loewenstein, G., Schwarz, N. and Smith, D., (2005) ‘Misimagining the unimaginable: the disability paradox and health care decision making’ *Health Psychology* 24(4S), p.S57.

Velleman, J.D. 1992. Against the right to die. *The Journal of Medicine and Philosophy* 17(6) pp. 665-681.

Wakefield, J. Wasserman, D. And Conrad, J.A. (2020) ‘Neurodiversity, Autism, and Psychiatric Disability: The Harmful Dysfunction Perspective’, in Wasserman, D. and Cureton, A. (eds), *The Oxford Handbook of Philosophy and Disability*. Oxford: Oxford University Press, pp. 501-521.

Wasserman, D. and Asch, A. (2013) ‘Understanding the Relationship Between Disability and Well-Being’, In Bickenbach, J. Felder, F. and Schmidtz, B. (eds), *Disability and the Good Human Life*. Cambridge, UK: Cambridge University Press, pp. 139–167.

Williams, B. (1973) ‘The Makropulos Case: Reflections on the Tedium of Immortality’ in his *Problems of the Self* Cambridge: Cambridge University Press, pp. 82-100.

Wolbring, G. (2008) ‘The politics of ableism’ *Development*, 51(2), pp.252-258.

Wolfe, C. (2009) *What Is Posthumanism?* Minneapolis: University of Minnesota Press.

Wolff, J. (2009) ‘Disability, status enhancement, personal enhancement and resource allocation’, *Economics and Philosophy*, 25(1), pp.49-68.

Young, S. (2012) ‘We're not here for your inspiration’. *ABC News*. https://www.abc.net.au/news/2012-07-03/young-inspiration-porn/4107006 accessed 23 May 2022.

Yudkowsky, E. (2015) *Harry Potter and the Methods of Rationality*. http://www.hpmor.com/ accessed 12 August 2022.