Ethical Genetic Enhancement in Sport

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Abstract

Athletes have consistently tried to gain a competitive edge over each other throughout the history of sport. Advances in genetics suggest that this will be one source of such an edge in the future. The World Anti-Doping Agency has decreed that so-called ‘gene doping’ is impermissible. In this thesis, I will argue that this approach is premature; I offer a case for the inclusion of genetic enhancements in sport. The explication will be made within a virtue consequentialist moral framework linked to a MacIntyrean understanding of social practices. Having dealt with minor initial objections, possible problems for society, and concerns about the impact on sport, I will show why the inclusion of the innovation would be beneficial to sport. The main positive result will be the possibility for a deeper engagement with the practice for a longer period of time thus enabling more goods internal to the practice to be realised. These internal goods have a major bearing on the positive consequences associated with sport and will justify the permissibility of using genetic enhancement technology.

Dedication and Acknowledgements

I dedicate this thesis to Professor Geoffrey Scarre, whose course *Moral Theory* ignited my interest in philosophy. I have many people to thank for helping me over the past six years. My supervisors Dr Seiriol Morgan and Dr Ainsley Newson have been invaluable in directing my philosophical progress throughout the writing of this thesis. My parents and the Old Alleynian Endowment Fund supported me financially at the beginning of this long project through the purchase of books, somewhere to live and a loan for early course fees. Any errors in the text are my own, but there are far fewer because of the kind acts of Richard Pryer, Julia Banks, Clare Wenham and especially Charlotte Fiander. Finally, thank you to everyone who has supported me emotionally throughout; you know who you are and your encouragement helped a great deal.

Author's Declaration

I declare that the work in this dissertation was carried out in accordance with the requirements of the University's Regulations and Code of Practice for Research Degree Programmes and that it has not been submitted for any other academic award. Except where indicated by specific reference in the text, the work is the candidate's own work. Work done in collaboration with, or with the assistance of, others, is indicated as such. Any views expressed in the dissertation are those of the author.

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Contents

Introduction

Sport has been a feature of human societies for millennia.[1] It is currently undertaken all over the world in many different forms. This ranges from the health conscious person endeavouring to fulfil their government recommended five sessions of thirty minutes of activity a week,[2] to elite athletes who compete on the world stage. People so involved have throughout the practice's existence found ways to enhance their performance in order to gain an edge over their fellow competitors.[3] In the top echelons of any sport, those competing and those who train, coach or manage them are continuously looking for methods that will give them an advantage, especially ones that their competitors do not currently have. These methods may be in accordance with the rules of their sport, or not, and some of them are in between.[4]

The history of athletes bending or breaking the rules of sport is long, and some people will do anything to reach the top end of their chosen activity.[5] Whilst there are obvious ways of ignoring 'the rules of the game' such as using a bicycle in a running race, there are also less apparent ways of increasing performance such as 'doping'. Doping is defined as "the occurrence of one or more of the anti-doping rule violations", which can be found in the World Anti-Doping Code 2009.[6] Although there are eight parts to this section of the code, the pertinent regulations concern substances that the World Anti-Doping Agency (WADA), the agency charged with policing doping in sport, has deemed should not be, or should not have been, in the systems of athletes. It is important to note that not all substances on the WADA prohibited list[7] are in fact ergogenic, that is, performance enhancing, Some may in fact be ergolytics and hinder performance, for example various illegal narcotics. In including the latter, the WADA is taking on a social function as well as trying to ensure safe and fair competition between athletes.[8]

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[1] For examples see Miller 2006 (Ancient Greece) and Decker 1992 (Ancient Egypt)
[2] UK Department of Health 2004
[3] Hoberman 1992 pp. 100-153 Ancient Greek athletes are thought to have ingested mushrooms to bolster performance, for example.
[4] Breivik 2005 p. 166
[5] Hoberman 1992 provides a rich history of the phenomenon of doping.
[6] WADA 2009 pp. 18-25
[7] WADA 2011
[8] It has been suggested that WADA should have limited their purview to performance enhancing substances only – Breivik 2005 p. 168.

In this thesis, I will analyse performance enhancement realised at the genetic level. This is because there is a genetic basis for phenotypic, that is, physical, expression and that the latter can in theory be modified by acting on the agent at the genetic level. So, it may be possible to alter a person's genetic make up so the athlete is more predisposed to gain skeletal muscle. If a person's genetic profile pre-enhancement is not conducive to the gain of much muscle, such modification may help the athlete better realise her goals in sport.[9] I have chosen this as my focus because of the novel nature of the technology. Even though its use in the medical setting is still limited,[10] this has not stopped WADA from setting out its stance on so-called 'gene doping' as follows:

> The following, with the potential to enhance sport performance, are prohibited:
>
> 1. The transfer of nucleic acids or nucleic acid sequences;
>
> 2. The use of normal or genetically modified cells;[11]

Given the history of performance enhancing efforts in sport, there will always be those who look for a competitive gain over their competitors.[12] It is of course possible for an athlete to enhance performance without cheating, for example, by eating more nutritious food or altering training load. Recognising that performance enhancement can be within the rules and fair is important, and I explore this notion in Section 4.2. WADA has prudently considered the state of medicine now and what it might produce in the short and long term, and how it might be used by those who wish to win despite the current rules of the *relevant* competition.[13] However, this prudence notwithstanding, WADA is arguably acting prematurely. I aim to show in this thesis that certain genetic enhancements would be ethical in sport.[14]

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[9] If her goals involve increased performance that is only possible by being stronger through having more muscle.

[10] Friedmann and Hoffman 2009 provide a useful overview of current and future technology. See also Haisma 2011 in Section 4.1.

[11] WADA 2011 p. 6

[12] Loland 2009

[13] There are some substances which are prohibited in specific sports WADA 2011 p. 9

[14] Three terminological notes: I have purposely used the terms 'genetic enhancement' and 'genetic manipulation' because of the negative connotations associated with 'gene doping'. The term 'athlete' refers to anyone that takes part in sport, not just the track and field events. I have endeavoured to use the pronouns 'he' and 'she' randomly throughout; they have not been used to represent athletes in particular sports intentionally.

In order to show how certain genetic enhancements would be ethical in sport, I will use a virtue consequentialist moral framework. This is a synthesis between consequentialism and virtue theory. I have chosen this approach because while the consequentialist appropriately considers actions in the world and their consequences, the practice of sports is typically understood in terms of the character traits of those involved. This is combined with an implicit understanding of social practices as developed by Alasdair MacIntyre, of which sport is a notable example. MacIntyre understands social practices as instantiations of cooperative human activity where people strive for goals that make up a large part of that activity internally. In order for the internal goods of a social practice to be realised, the agents participating must be in possession of certain positive character traits. I argue that the link between virtue consequentialism and this theory of practices is such that the internal goods of a practice are identical with the positive consequences of agents behaving in particular ways. This behaviour is good precisely because it allows for the realisation of the aforementioned internal goods and is linked back to morally laudatory traits in the agents. The first part of this thesis will comprise a defence of consequentialism in general, and then I will articulate the virtue consequentialism that will be employed where appropriate throughout.

Having set up the moral framework for this analysis I will then assess possible objections to genetic enhancement in sport. I have grouped these into three categories: minor, society-based, and sports-based objections. The first two apply to enhancements in general, and the third to the specific focus of this thesis. Minor objections are those that consider genetic interventions simply to be morally problematic. These consist of appeals to 'Metaphysical Wills and Nature' as well as an appeal to the 'Precautionary Principle'. I will show that the most these objections can require of proponents of genetic technology is its prudential application. They do not present a strong case for the cessation of enhancement activities.

The second set of objections is based on the possible negative ramifications of genetic enhancement for society. Here, I draw on the work of four prominent conservative bioethicists: Michael Sandel, Leon Kass, Francis Fukuyama and Jurgen Habermas. Their predictions in Chapter 3 are 'Moral Turpitude', an assault on 'Human Dignity', and 'Intergenerational Distortion'. I will show that although society should not rush headlong into adopting a wide range of enhancement technologies, the future of humanity is not in fact under threat from some enhancement undertakings.

The first sport-specific objection is Section 4.1 'Health, Treatment and Enhancement'. The health of athletes is of paramount importance, and this section will conclude that enhancements should only be used in sport if they are both safe for use in healthy individuals and can be conducted in a safe circumstances. I will then explore the treatment-enhancement distinction and will show that it lends nothing of moral or explicatory interest to an analysis of enhancement in sport.

Next, I will examine notions of 'Fairness' in sport and how this might be impinged on by genetic enhancements. A number of conceptions of fairness are considered, and, apart from whether genetic enhancement is prohibited by the rules of the sport, none of these conceptions suggest that genetic enhancement would make sport less fair. Its inclusion may in fact add to the fairness of sports dominated by powerful support systems, assuming there was suitable regulatory oversight. A support system is a group of people including coaches, managers and technologists that help athletes or teams of athletes better achieve their goals.[15] These may be large commercial entities such as the top teams in the UK Premier League of football, the US National Football League, or state-based systems such as those in the US and China. They are relevant to this thesis because it is expected that novel technology will be costly, so athletes are unlikely initially to have access to it without a third party's assistance.

An issue that is particularly important for a novel technology such as genetic enhancement is whether or not performances by genetically modified athletes should be considered 'Proper Achievements'. There is the suggestion that in some way a genetically enhanced athlete is not the actual source of the achievement and therefore should not be praised for it or allowed to participate in the sport. I will show that actually the genetically enhanced are as much the source of performances as other strongly supported athletes, although further consideration of their actions post-enhancement will be important.

Finally, I will explore the objection based on the 'Spirit of Sport'. This is the idea that genetic enhancements in some way detract from the practice of sport itself. I will show that this is not the case on any of the interpretations of the spirit of sport offered by WADA.[16] Their suggestions for the essence of sport actually show either that genetic enhancement will help

[15] Loland 2003 p. 117
[16] Due to their source and breadth, these are interpretations one might accept generally.

support the practice, or it will be changed from a practice that involves an ethically dubious ranking of athletes based on their contingent genetic make up and social situation.

Having responded to these objections I will proceed to offer positive arguments for the inclusion of genetic enhancement technology in sport. I will show that practices are expected to change over time, so in itself this change in practices does not warrant the innovation's exclusion. I will then show that the technology of genetic enhancement will add to the practice of sport. This will be in the form of making competitions less about which support system can find the humans outside the normal range of physical attributes and more about a deeper understanding of the practice in terms of a tactical approach, for example. There will also be the fact that the technology will open up sport to more people, to a higher level, for a longer part of their lives. This possibility for extended engagement with the practice, for example being a competitive swimmer for longer, means that more of its internal goods will be realised and therefore promote good consequences. In addition, the fact that athletes will be able to take part at the level they desire for longer will result in young people[17] being able to start their athletic development later in life when they are better positioned to decide whether they in fact want the necessary extent of involvement in the sport.

The objections to genetic enhancement do reasonably demand prudence and suitable regulatory oversight. However, there are many gains to be made to the practice of sport by allowing genetic technologies to be added to the many, currently legitimate, forms of performance enhancement techniques. It is to be expected that social practices change over time and resistance to novel technologies is not unusual. I am not arguing for the inclusion of anything that could increase performance, rather that this new technology should be properly considered as, in the same way the use of coach positively affects the performance of athletes and therefore their sports, so too will the use of genetic technology.[18]

[17] David 2005 p. 55 Many (but not all) sports, for example gymnastics, diving and tennis seem to require athletes to have started at a very young age in order to make it to the top. Genetic enhancement will not remove the necessity for long periods of training as is discussed in the text.

[18] I recognise the relationship between currently banned performance enhancing substances and those based on genetic technology. Much of what I will show about the latter suggests that the relevant institutions should rethink their approach to the former. However, I am only interested, in this thesis, in genetic enhancement technology.

Chapter 1: Consequentialism and Sport

Introduction

The extent to which people will be able to genetically enhance themselves or their offspring in the future is of course not yet known. However, if it is the case that people *are* able to enhance themselves at the genetic level,[19] a system is needed for determining which enhancements are permissible and which are not. The ethical theory I will use in this analysis is consequentialism. The validity of enhancements will be determined by their consequences and not by appeal to sets of rules that would be within the domain of some deontological or, more generally, non-consequentialist moral theory.[20]

I will begin by comparing a general consequentialist moral theory[21] with its general non-consequentialist rivals. I will then outline the benefits of a more specific, but not yet complete consequentialist moral theory. I will base much of the overall exposition on the work of Philip Pettit[22] and Richard Hare.[23] Consequentialist theories have been defended many times,[24] so I will only meet two major objections which I will show are not insurmountable. I will meet some notable but not overpowering objections to consequentialist theories. Next, I will construct a consequentialist theory that captures important features of sport. Sport is a social practice and is commonly understood to be an arena for the expression of virtues.[25] Drawing on the work of MacIntyre on social practices[26] and Julia Driver on virtue consequentialism[27] I will outline a moral theory that encompasses relevant features of sport for application throughout this thesis.

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[19] Work on treating muscular dystrophy at the genetic level would have enhancement implications for sport. This is because muscular dystrophy is a genetically-based disorder which results in the uncontrolled wasting of skeletal muscle (that is, not organ muscles). It is thought that when a correction for this is found at the genetic level, it could be used in healthy people to increase the amount of skeletal muscle they could otherwise produce, given their genetic make-up. Friedmann and Hoffman 2009 p. 244, Mehlman 2009 p. 207

[20] There are various non-consequentialist moral theories including deontology and virtue ethics.

[21] As opposed to specific variants such as utilitarianism.

[22] Pettit 1993

[23] Hare 2004

[24] Both sides of the debate can be found in Smart and Williams 1998 for example.

[25] Parry 2010 and Donovan 2009 p. 124

[26] MacIntyre 2011

[27] Driver 2001

1.1 Consequentialist Moral Theory

A consequentialist is a person for whom the moral status of an action, its rightness or wrongness, is determined by its consequences.[28] Actions are to be understood as both acts where something is done that in some way impinges on the world, and as acts of omission where someone does not act and allows the *status quo* to proceed uninterrupted and unchanged. Hare notes that this means that the agent is thus both morally responsible for what he has done or failed to do.[29] In this thesis, in order to increase clarity, I will refer throughout to 'actions' and their consequences, this is in place of repeatedly referring to the consequences associated with either 'action' or 'inaction', where the latter will be understood to be included in the former term.

In terms of the ethical evaluation of an action, the consequentialist is interested in only the consequences that issue from that action. The non-consequentialist might refer to a set of rules adherence to which he thinks determines the ethical life. He would then consider whether or not this action is aligned with this set of rules when deciding if it is the right thing to do.

It is expected that both the consequentialist and non-consequentialist will have values against which they can determine the ethical merits or otherwise of the actions that make up their lives. At this stage, the precise nature of these values is unimportant. Pettit compares the consequentialist and non-consequentialist approach to things that are valued. Regardless of the exact nature of the values in question, consequentialist theories require the agent to promote these values and to honour them if doing so does in fact result in their promotion. On the other hand, the non-consequentialist will focus only on the honouring of his chosen values irrespective of their promotion.[30] I will clarify this shortly with an example.

Even minimally reflective people will pick out things in the world that are important. These are things that they value. Such things will vary greatly between people and may be mundane – an appreciation of the motion of a tennis ball – or have far reaching societal implications, such as cooperative living arrangements. Pettit uses as an illustrative example an agent who

[28] Hare 2004 p. 80
[29] Hare 2004 p. 80
[30] Pettit 1993 p. 231 It is worth noting that the non-consequentialist may end up promoting values while honouring them, but his goal, morally speaking, is to honour them.

considers the most important thing for people to do is to comprehend the world around him and his place in it.[31] Typically the word 'values' in ethics refers to modes of behaviour as distinct from things which are considered to be valuable. In terms of drawing out the difference between consequentialist and non-consequentialist moral thinking, both meanings of 'value' are relevant.

Consider a value such as teamwork. Both the consequentialist and non-consequentialist think that this is important. The consequentialist holds it in esteem, that is, honours it by arranging a great number of rugby games and rowing sessions whereby teamwork can be promoted as much as possible. She spends much time lobbying councils to provide facilities and resources in order that as many people as possible can have access to the two sports. In so doing, they will learn about teamwork and use it in order to play rugby or do rowing. The agent has increased the amount of teamwork in the world and has succeeded in promoting a chosen value. On the other hand, the non-consequentialist agent, who also esteems teamwork, devotes her life to being an effective member of a rowing team. She hones her physical skills and sense of timing in order to show that she understands the importance of teamwork. If she were to do otherwise she would not be honouring her chosen value. Both agents care about the same value, but the consequentialist does her best to promote the value beyond her own life, unlike the non-consequentialist who simply lives in accordance with the value. The non-consequentialist agent may end up promoting the value of teamwork in others through her own example, but this is merely a positive side effect that is not aimed for in her ethical evaluation of actions. The non-consequentialist may reply that this example misses the point about non-consequentialist theories; they do not strive to maximise the amount of a particular value in the world. The consequentialist answer is simply to ask why are non-consequentialists not concerned with this, given the fact that all moral theories do consider the consequences of actions to be relevant.

The consequentialist strives to produce behaviours that result in the promotion of chosen values, but this does not preclude actions which do not hold the value itself in esteem, as the consequentialist is aware that value stands instrumentally with respect to agents. The point being that agents must act to increase the extent the value is instantiated in the world, whether

[31] Pettit 1993 p. 230

or not this seems at first sight the right thing to do. The point being, consequentialists are concerned about value promotion in aggregate. There might be cases where a value is undermined but this is ethically acceptable if overall there is more of that value. Non-consequentialists, on the other hand, see value standing non-instrumentally with respect to agents. It is not for agents to concern themselves with the extent to which a value is realised, only that their actions do honour that value.[32]

In sport, generally, it is apparent that both consequentialist and non-consequentialist moral thinking pertains. Individuals in a competition are, one hopes, honest because that has attendant good consequences as well as, presumably, a virtue they wish to promote in themselves. If they fail to be honest, they risk not being welcome in the practice and therefore unable to gain the practice's internal goods; I consider this in more detail in Section 1.6. While this may sound excessively egoistic, this is compatible with consequentialism as long as overall good consequences are increased, the nature of which I will consider shortly. I also explore the notion of inappropriate behaviour in Section 1.6 where I discuss cheating.

The tension between consequentialist and non-consequentialist theories can be found in their differing approaches to holding values in esteem. Both have features that are appealing in their use as ethical theories. It is clear that consequentialists might be praised for doing their best to promote good values in the world. On the other hand, the non-consequentialist is morally laudable by attempting to live by a set of values because they are good in themselves. I will discuss the relationship further when relating consequentialism to the virtues found in sport in Section 1.4.

I will now outline a more specific consequentialist moral theory and show why it is attractive and why non-consequentialist objections to it are not sufficient for it not to be used in the context of this thesis. However, there are first some terms which are to be defined. In terms of their relation to the world, agents have multifarious options for action open to them at any given moment. An option is understood to be something an agent can choose to do (or not do). In addition there is another dimension that a consequentialist must consider – namely the relation between these options and the world. As the agent is not in a position to know how each of these actions will turn out, each option can be said to have different prognoses. These

[32] Pettit 1993 p. 231

are to be understood as being the different ways the option *might* affect the world.[33] These prognoses will not necessarily be equally important. Promoting teamwork may start a civil war or make people healthier, for example. The agent will have to rank the prognoses for each option for action. Given the multitude of prognoses issuing from each option, the agent will have to consider the probability of each of them.[34]

Consequentialists can now explain how they go about promoting values.[35] Yet, what do these values mean, normatively speaking? I will now move one step closer to a more specific variant of consequentialism. Clearly, as is apparent from the name, the consequentialist is concerned with the consequences of actions. No moral theory ignores the consequences of actions entirely, but the consequentialist is solely concerned with said consequences to determine the rightness or wrongness of actions.[36] How, precisely, are these consequences to be measured; against what criterion are the consequences to be determined good or bad? There are many variants of consequentialism[37] but John Stuart Mill's formulation, utilitarianism, is a good starting point for illuminating what a good consequence might entail.[38]

For Mill, a good consequence is one that increases the *overall* happiness of people. Generally, happiness is identical to a pleasurable psychological state. Mill, following earlier writers, claimed that there existed both higher and lower pleasures that related in different degrees to the amount of happiness they increased. Higher pleasures concern the intellect, while lower pleasures engage mere physiological aspects of the agent.[39] A warm bath after a hard day's toil is clearly pleasurable, but this physical sensation should not be taken to be the paradigm of pleasure. The extent, for example, pleasure is gained through poetry is far greater. Although I may be getting ahead of myself, sport would seem, for practitioners at any rate, to occupy some place between higher and lower pleasure. The intellect is clearly a vital factor for any tactical play, while the body is necessary for actually executing actions within

[33] Pettit 1993 p. 232
[34] Pettit 1993 pp. 232-233
[35] Although what these precisely are has not yet been determined.
[36] Rather than focussing on the character of the agent for example.
[37] Lyons 1970 and Brink 2006 both offer detailed expositions of utilitarian and consequentialist moral theories respectively.
[38] Mill 1998a
[39] Mill 1998a pp. 136-158

the sport, to experience the return of a volley in tennis for example. However, at this stage, it is enough to recognise that consequences are to be measured against the criterion of overall happiness that tends to be gained through actions that generate pleasure. If in a situation there is only one action which does increase overall happiness, or at worst keeps the amount of happiness the same, then it is the right action to do at that point in time. An important feature of this variant of consequentialism is that simply put, those actions that increase overall happiness are good. This also follows for things that are already assumed to be good. Either they are good because they make people happy, or, whatever a person's intuitions, they are not in fact good.

A difficulty noticed in consequentialism is that of determining which consequences are relevant to the actions being morally evaluated. A useful analogy is a stone being thrown into a still pond. On impact with the water, there is a visible splash with ripples of energy moving through the water in concentric circles away from the source of the disturbance. These ripples are most pronounced at the source and, as the energy dissipates as it travels away from the source, they reduce until barely perceptible. Yet the student of physics knows that the energy has not been destroyed, it has merely been changed from one form to another. Thinking in this way about ethical theory, it is not difficult to observe the immediate consequences issuing from an agent's actions, but like the ripples at a greater distance from the stone, there may not be such noticeable ramifications when further from the agent in space and time. The problem then, for the consequentialist, is how far in physical location and so on, should the consequences be considered morally relevant.[40] As recognised by Mill, there are few people whose actions really do have far-reaching ramifications. The majority of people, for most of their lives, do not need to worry that they are not thinking far enough into the future because their actions simply do not warrant this. I return to this later. The consequentialist must consider the longer term consequences of actions and whether or not they promote overall happiness but will consider those of greater proximity in space and time in more detail. Having set a more specific consequentialist scene, I will now give reasons why consequentialism is generally an attractive moral theory.

[40] Mill 1998a pp. 150-151 talks about the actual extent people can affect the world.

1.2 Benefits of consequentialism

A strong factor in favour of consequentialism is that even non-consequentialists are prepared to make some concessions:

> [Even if consequentialism does not provide] an ultimately satisfactory account of morality [we] must concede that it focuses on something of indisputable significance to us, the quality of our lived experiences.[41]

People, of course, usually care about what happens in their lives. However, the consequentialist position is stronger. It captures something indisputably central to and ineliminable from an agent's actual evaluative practices, that is, a concern for consequences. This grounds consequentialist moral theory in a way that theories which rely on a something that is arguably eliminable, such as moral intuition, do not.

The above discussion has shown that a general consequentialist theory acts to promote values whereas a general non-consequentialist theory acts to honour values.[42] As opposed to a non-consequentialist theory, consequentialism is crucially simpler, here, because of its value monism. By appealing always to happiness, all value judgements are commensurable. This has the important result that at least in theory an agent is in a position to show how one evaluation is more important than another: which one results in more overall happiness?

A simpler theory that is easier to implement is unlikely to contain *ad hoc* unjustifiable requirements on its adherents. By only considering the consequences and whether she is bringing about more overall happiness, the consequentialist agent knows where she stands. However, this is not the case for the non-consequentialist. An important example of this is that the non-consequentialist must attend to value in two ways rather than the consequentialist's one.[43] That is, while the non-consequentialist honours a set of values, he simultaneously and inevitably promotes other values. He is unlikely to forego personal hygiene while seeking economic prosperity for example.[44] People experience and interact with life continuously, always having to make value judgements about what they choose to do or not do. This means the non-consequentialist must account for how these other values

[41] Scarre 1996 p. 25
[42] Even if at times there is an unintended overlap.
[43] Pettit 1993 p. 238
[44] Pettit 1993 p. 238 suggests economic prosperity and personal hygiene.

are also justified. It is here that the *ad hoc* nature of non-consequentialism enters. The non-consequentialist does not have a scale of commensurability to appeal to as his values are incommensurable. This means he is reduced to an epistemologically dubious justification. Justifying one value above other is clearly difficult, but in each immediate situation, doing so can appear largely arbitrary. In terms of identifying the values to be promoted, consequentialism is on stable ground. If good consequences are maximised, that is there is more overall happiness, then this action, rather than the other one should be undertaken.

Ross made the claim that at least some moral facts were simply self-evident in the same way as mathematical axioms.[45] Moral knowledge is non-inferential and apprehended after repeated exposure – in the same way that the rules of mathematics come to be apprehended. For example, the keeping of promises seems immediately right, but this intuition is confirmed by continued exposure and further reflection. The moral agent therefore comes to see the rightness of keeping of promises as self-evident.[46] The difficulties with this moral epistemology are numerous, some of which Ross himself admitted. An example is that, given the plurality of types of society, surely people will come to have different intuitions about what is right. He suggests that actually much can be explained away as disagreement over objective fact, not moral rules.[47] The solution, for Ross, is that intuitionists must not close their minds to the possibility that it will be difficult and possibly inappropriate to apply generalised moral rules to particular situations.[48] This amounts to Ross saying that regardless of the fact that people may appear to have different intuitions about the right thing to do, this is not the case, they *simply* will be able to intuit the right action. The idea that the moral law can be gleaned through moral intuition is baseless.[49] The ethical intuitionist has failed, *pace* Pettit, to clarify how the moral agent ought to behave in a particular situation when there are different values that can be honoured.

The final aspect of simplicity with regard to other moral theories where consequentialism fares better is that it is neatly aligned with the demands of rationality[50] and importantly has

[45] Skelton 2010 p. 33, Ross 1939 p. 320
[46] Skelton 2010 p. 24
[47] Skelton 2010 p. 26
[48] Skelton 2010 p. 26
[49] Scarre 1996 p. 25
[50] Pettit 1993 p. 238

thinking that is moral as well as being an extension of the simply practical.[51] Consider the agent who wishes to act ethically, that is to say act with respect to a particular value. This agent has thoughts about a good that is personal to them – such as health. The rational thing to do is to promote that good through their actions.[52] It will make the agent and others happier. This shows how the consequentialist's theory extends daily, non moral practical reasoning into moral reasoning, unlike the non-consequentialist who is unable to justify the move from practical to moral reasoning. The non-consequentialist has no easy segue from practical non moral to moral reasoning and must *still* defend the two aspects of life.[53]

At the start of this section, I suggested that it was an important feature of a moral theory that it is easy to employ. This led to the above discussion of the relative simplicity of consequentialist lines of thought when compared with those of the non-consequentialist. I have thus far sketched a form of consequentialism and how the rightness of actions is to be determined; do they increase overall happiness? I will now meet some notable objections to consequentialism before fleshing out the variant of consequentialism for use in this thesis.

1.3 Objections

Definitive course of action and moral calculators

The consequentialist is only ever able to work in terms of probabilities of prognoses for consequences of actions. The non-consequentialist can reasonably argue that this may lead an agent down an unclear moral path – never really knowing the best route, never knowing what is the best action to take. This is linked to the objection that given these difficulties, the consequentialist may seem to be paralysed by choice and therefore unable to act at all; they will be incessantly making moral calculations. Initially, it must be remembered that part of being a moral agent, being responsible for what one does, is to make decisions which may often be difficult. The moral life does not always align with the easy one.[54] It will not always be immediately obvious to consequentialist agents which would be the correct action in each instance.

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[51] Scarre 1996 p. 25
[52] Pettit 1993 p. 238
[53] Pettit 1993 p. 238 However, Kant, for example, denies that this move is even necessary. This points to a stalemate between the two types of theory as they simply do not agree about the necessity of this feature.
[54] Some non-consequentialists in fact see the struggle to be moral to be of ethical value in itself, the notion of striving appears below in Section 4.3.

Firstly, it is important to remember consequentialist moral theories concern themselves with the rightness of actions in that the action that results in the best consequences is the one that the consequentialist agent should undertake. However, this is not to insist that such an agent should be blamed (or not praised) if he does not perform that action. This is because it may have been the case that he had every reason to believe that the action that he in fact took would produce the best consequences. For the consequentialist agent there is nothing counter-intuitive about this; he really thought more happiness would be brought about.

This rebuttal can be strengthened as follows. The opponent making the objection really might think the consequentialist will be unable to act because she is 'over thinking' the problem. This claim misses the point of the consequentialist's moral theory which is not concerned with *how* agents deliberate in situations but rather that it allows one option to be justified amongst competing claims.[55] It is a criterion of rightness, not a decision procedure. A non-consequentialist may be unconvinced and claim that the justification of an action and deliberation about an action are in fact bound together. This is because such deliberation will result in optimal choices being made by the agent in terms of promoting the relevant value.[56] Yet this is not true. The agent who over-deliberates is likely to make worse the consequences he is deliberating, exactly in those cases where the action is bound to consequences that are not greatly linked to the society-wide promotion of chosen values. Thus, in those cases where an action's consequences do not have wide ramifications, the agent *needs* to not spend too much time on deliberation and hence is not hindered by continued moral calculation. The agent who over-deliberates about what to cook for supper is probably going to end up dissatisfied because of the time taken to reach a decision, whereas the agent who is in a position to determine the availability of recycling facilities across London should spend longer on his deliberation, precisely because of the wider reaching consequences.[57]

There is more to this objection based on over moral calculation. An ethical theory needs to have practical applications in order to actually be of any use. The consequentialist is necessarily concerned about the results of her actions, and these actions can of course change her behaviour. She can choose to make direct changes to her behaviour – 'I will be loyal' – or

[55] Pettit 1993 p. 235
[56] Pettit 1993 p. 235
[57] Recall Mill 1998a pp. 150-151

indirect – 'I will do my best to adhere to such and such a principle of beneficence'. Decisions of the latter sort can mean the agent can adhere to them in an unthinking fashion. Depending on the traits or principles selected, the agent may in fact be setting herself up to act precisely without thought in certain situations, *because* of the traits selected. This is more likely to be the case if removing herself from the calculating mindset is a better way of promoting the agent's preferred values,[58] that is, here, overall happiness. This would be one way to avoid the paralysis of too much choice as well as striving towards the consequentialist's goal of promoting happiness, which would have the beneficial effect of diluting the fallibility of moral agents.

The non-consequentialist may accept that the above claim as a possible answer to the moral calculator problem, but insist that if the consequentialist is serious about undertaking that theory as a way of living then they must in fact *always* perform the moral calculation in order to live the best life possible. I have already noted that when a decision is suddenly necessary, over-calculation may in fact have negative consequences. Additionally, there are certain traits that the agent may develop in themselves that would preclude monitoring once they were firmly part of their character, for example choosing a mode of behaviour where all tasks have to be completed no matter what.[59] Or again there may be a set of traits specifically undermined by calculation, such as the trait of being spontaneous.[60] These responses suggest that it would depend on the action in question whether or not happiness would be promoted by it being deliberated about. This would allow the consequentialist a route out of being an incessant moral calculator and worrying about the definitive course of action.

Separateness of persons and difficult circumstances

This objection has two facets, the distribution of good consequences in terms of the separateness of persons and what this distribution might entail in difficult circumstances. The non-consequentialist sees a potentially unacceptable stumbling block in the way that the good consequences pursued by the consequentialist are distributed. The first facet of the problem is that the consequentialist tries to make a simple decision-procedure which is appropriate for a single agent extend to groups of people. The second facet is that consequentialism may

[58] Pettit 1993 p. 236
[59] Pettit 1993 p. 236
[60] Pettit 1993 p. 236

demand that an agent do something horrible to another agent who does not deserve it as that is the action which maximises happiness.

As the consequentialist is concerned with the summed consequences of each action, if one route will result in better consequences overall or promotion of particular value(s), that is, distributed in an entirely unequal fashion, this is still better than less promotion of value(s) with a closer to equal distribution. At least this satisfies a concern about the consequentialist agent who, it is feared, may ignore those nearest her, that is, her friends and family. She can consider these agents and if the total value promoted is higher than another course of action these agents will be satisfied. There are broad consequences at play here in that society would presumably be more stable if agents do look after those closer to them above strangers. If there were not such bonds, which may be familial or otherwise, then society would increasingly be made up of individuals apparently acting callously towards friends and family. This would not promote a strong society and thus tips the balance in favour, in many instances, of prioritising those nearest the agent. It seems that the problem of how to account for behaviour towards friends and family over strangers is also true for the non-consequentialist. This is because they too may fail in the interactions nearest them in so far as values by which they purport to live are better honoured by interacting with others. Unlike the consequentialist who can broaden the scope of consequence being considered to find additional evidence that justifies a certain type of behaviour, a non-consequentialist has no such recourse.

I will now return to the above problem about distributing good consequences. It is a great concern for those in the non-consequentialist camp who are concerned with the value of equal distribution in itself as something that must be honoured and must not be flouted through efforts to maximise welfare in sum.[61] This suggests a certain impartiality between the interests of agents but as I shall shortly show, consequentialism does in fact offer a suitable solution to this tension. Jeremy Bentham stated: "Everybody to count for one, nobody for more than one"[62] and immediately it is clear why at first sight it might seem as though the

[61] Hare 2004 p. 82
[62] Mill 1998a Last chapter, in Hare 2004 p. 82

interests of different people should *not* be considered differently. This is furthered by Ronald Dworkin's call of each showing everyone else "equal concern and respect".[63] Yet

> …[i]t is hard to see what it would be to show equal concern and respect, if not respect their interests equally. But if we respect their interests equally, we shall give the same weight to the equal interests of each of them. So, for example, if one of them wants some outcome more than the other wants to avoid it, we shall think we ought to bring that outcome about.[64]

Hare demonstrates why this means that a consequentialist argument is in fact compatible with Dworkin's claim. Consider three people: A, B and C. Let each of their interests be given equal weight. A and B happen to coincide in their interests; thus when summed, their interests are greater (together) than those of C:

> If we said anything but this, we should *not* be giving equal weight to the interests of A, B and C, and therefore not showing equal concern and respect for A, B and C. So, if one outcome will promote the interests of A and B, and the other will promote the interests of C, and the interests of all these individuals are equal, and we cannot produce both outcomes, it is the first outcome that we ought to produce, if we are to show equal concern and respect.[65]

This helps a great deal but the objection can be pushed further in terms of an alleged failure to distinguish between persons.

This is the case where it is morally appropriate to consider the great interest of one agent to be less morally important than the summed lesser interests of a very large number of agents, assuming this sum is greater than the single agent.[66] Hare presents this example: that if, after aggregating interests, someone is in the position to alleviate the moderate pain of several patients in lieu of alleviating the severe pain of one patient, they should do so.[67]

The consequentialist will relieve the pain of the five because of the summed consequences. Moreover, this is in fact considering the differences between different agents by acting justly with respect to the different interests of these people.[68] The non-consequentialist may press further and say that it is all very well that these five patients are doing well but where does

[63] Dworkin 1977 p. 182, in Hare 2004 p. 82
[64] Hare 2004 p. 82
[65] Hare 2004 pp. 82-83 His emphasis
[66] Hare 2004 p. 83
[67] Hare 2004 p. 83
[68] Hare 2004 p. 83

that leave me? Particularly if she is the agent in severe pain. Being considered equal in the formal sense, as noted above in Bentham's famous words, is a good start, but it seems the non-consequentialist does have a reasonable complaint. When a presumably innocent person is held up as a commodity for exchange in a consequentialist moral transaction, it is understandable that many people may recoil from this ethical system. This leads me to the second facet of the problem.

Given that the consequentialist cares about the consequences of an action not the action in itself, opponents of the theory are concerned that ultimately if the consequences are good enough then any action would be permitted. The non-consequentialist would baulk at this, as for them it is the performing of actions in accordance with a set of values that is important, not what flows from them; the honouring of the values is vital in itself. What stems from this is that for them, there are acts that would never be permissible, whatever the consequences,[69] and the non-consequentialist fears that that this would not be the case for the consequentialist.

People generally have the very strong intuition that killing other people is wrong. The charge made against consequentialism here is that if the consequences were good enough, then consequentialism could demand an innocent's death. For example, a government foresees a riot causing untold violence, death and destruction. It is also aware that this riot could be avoided if it sacrifices an innocent bystander. On an initial reading it seems that if the government is acting along consequentialist lines, it should sacrifice the innocent bystander; there is no happiness in violence, death and destruction. However, if a society did *generally* permit the sacrifice of innocent people, then all members of that society would suffer because they would live in fear of being the one sacrificed. This is hardly conducive to a stable, productive society so the balance of consequences, when considered in the long term is in favour of not sacrificing innocent people.[70] If people thought that they might be scapegoats then they may see less reason to behave morally thus exacerbating the problems of a generally nervous society.

Compare the case of the captured bomber who knows where a bomb has been placed that will kill thousands of innocent people. There is another strong intuition that 'torture is wrong', yet

[69] Determined by the values with which they accord their lives.
[70] Scarre 1996 pp. 167-168

here it seems, though repugnant, the overall consequences would be better if the torture takes place to find out where the bomb is and defuse it. These two scenarios show that performing repugnant acts rarely brings about the best consequences. It is simply the case that in those extremely rare situations where repugnant acts are necessary, there are strong consequentialist reasons to perform such acts.

This draws my consideration of major anti-consequentialist objections to a close. It is beyond the scope of this thesis to further examine the multitude of non-consequentialist claims about consequentialism's supposed failings as a moral theory.[71] I will now flesh out the variant of consequentialism that is to be employed in this thesis.

1.4 Social Practices and the virtues

I have argued so far for the merits of a consequentialist moral theory, its simplicity and appeal to an obvious value – happiness. Yet, there are many virtues linked to sports. Take the strength of will necessary to get up early, leaving a warm bed to train before work, consider the overcoming of nervousness before a major competition or playing as part of a team for the common good. The top practitioners of sports typically exhibit positive character traits; if they did not, they would not have reached the level they have done. This is not to say that all elite athletes are in the position of virtuous character; on the contrary, many athletes display behaviour that suggests their behaviour should not be emulated in any way.[72] The point is that while some athletes may indeed have negative traits, they are necessarily in possession of enough good ones in order to devote themselves to the practice to reach the level that they have done. It is for the reason that virtues are an obvious feature of the characters of athletes that in the following sections I will draw out the connection of virtues in sports and consequentialist moral thinking so that I have a more specific moral theory to hand – namely virtue consequentialism that captures important aspects of sports.[73] Sports have been a feature of human societies for millennia. As such they can be described as social practices. It is this

[71] Scheffler 1988
[72] Premier League footballers are unfortunately notorious examples.
[73] McNamee 2008 only considered virtues to be relevant which I maintain is too narrow a moral approach for the analysis of sports.

aspect of sport which suggests analysis using some of MacIntyre's ideas about virtues and social practices.[74]

MacIntyre understands practices to be one aspect of human life where the virtues can be exercised. When he refers to practices he means

> …any coherent and complex form of socially cooperative human activity through which goods internal to that form of activity are realized in the course of trying to achieve those standards of excellence which are appropriate to, and partially definitive of, that form of activity, with the result that human powers to achieve excellence, and human conceptions of the ends and goods involved, are systematically extended.[75]

He adds to this that while there are goods external to a practice, they could be gained by other means, while goods internal to a practice can only be achieved through being involved in that particular practice.[76] An example of this in sport would be the playing of football to a high level. Goods external to football are fame and fortune, which could be gained through a host of other pursuits.[77] However, goods internal to the practice of football are, for example, using one's physical and tactical skills in conjunction with those of one's teammates to score a decisive goal. Thus:

> External goods are therefore characteristically objects of competition in which there must be losers as well as winners. Internal goods are indeed the outcome of competition to excel, but it is characteristic of them that their achievement is a good for the whole community who participate in the practice.[78]

Here, MacIntyre has recognised the fact that the pursuit of internal goods is beneficial for all involved in a practice, regardless of the final result of the practice. It does not matter whether or not the agent won the open-water swimming race, but that he engaged with that particular activity. This is important because there are clearly more efficient (and warmer) ways of getting across Lake Windermere, but the practice involves swimming its length without a wetsuit.[79] Additionally, because the internal goods can only be realised through participation in the practice, if an agent finds the internal goods worthwhile to pursue, then if she cheats

[74] MacIntyre 2011
[75] MacIntyre 2011 p. 187
[76] MacIntyre 2011 p. 188
[77] Being a successful actor or banker for example.
[78] MacIntyre 2011 pp. 190-191
[79] Suits 2010 p. 17 describes games as "goal-directed activities in which inefficient means are intentionally chosen".

she is only cheating herself. On the other hand if she is only involved in the practice because of the draw of external goods, she has few reasons not to cheat.[80] This leads to MacIntyre's suggestion that:

> *A virtue is an acquired human quality the possession and exercise of which tends to enable us to achieve those goods which are internal to practices and the lack of which effectively prevents us from achieving any such goods.*[81]

The reason for this is simple: if humans do not have certain virtuous traits,[82] the practice will be unsustainable, which means those goods internal to the practice will be unrealisable. That is, it is through these virtues that people involved in a practice define their relationships with each other. Those involved subordinate themselves to the practice and these relationships.[83] They additionally recognise that the practice may change over time.[84]

The foregoing has drawn out the notion of sports as a social practice and why an agent in pursuit of internal goods has no incentive to cheat when compared to the agent interested only in external ones. In addition, there is the idea that a practice cannot be continued unless the participants possess certain virtues that will have a positive effect on the interrelationships of said participants. The *exact* nature of these virtues is not something this thesis aims to delineate. The important idea at this point is to link the popular notion of virtues in sport with a more detailed explanation for their necessity.[85]

1.5 Virtue consequentialism

I have now shown how virtues are linked to sports generally, and I will now link the two ideas to consequentialism so that I have a consequentialist theory that can be applied to the question of enhancement in sport, as well as being capable of accurately capturing much of sport that is apparent to the general spectator. By this I mean it is empirically the case that observers of sport recognise certain character traits as being important factors in a sport's successful undertaking. These traits vary from sport to sport, but take the two following

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[80] MacIntyre 2011 p. 188
[81] MacIntyre 2011 p. 191 His emphasis
[82] MacIntyre 2011 p. 192 suggests justice, honesty and courage.
[83] MacIntyre 2011 p. 191
[84] MacIntyre 2011 pp. 193-194
[85] Although it is has been suggested that sports can actually inculcate vices absent accompanying moral education for children engaged in the practice. Reported in Donovan 2009 pp. 124-125

examples. The long distance runner needs to have a high level of determination that allows him to carry on racing for hours at a time. The hockey player needs to be aware of and heed the regulations of the game (so is trustworthy) in order to properly employ effective tactics. There are many others, and the general observer does not need to necessarily consider these traits to be virtues. I am simply noting that many if not most of these traits would be considered virtues by virtue theorists[86] and thus they can be reasonably linked to consequentialism in what follows.

In Chapter 1 I delineated consequentialism's benefits and showed how the consequentialist can answer concerns that the non-consequentialist sees associated with such a theory. Given that the practice of sport entails specific modes of behaviour that allow it to successfully instantiate[87] which could be described as virtues, some work must be done to link these two different varieties of ethical reasoning. The virtue ethicist broadly thinks that the ethical life is lived by the self-inculcation of certain types of behaviour that tend to promote human flourishing.[88] This may be simply through ensuring that one is in possession of this type of behaviour or through the acts that flow from having these traits. This clearly differs from the consequentialist who is concerned with the consequences that flow from actions rather than the actions in themselves. However, the two ethical viewpoints can be synthesised to form a variety of consequentialism called virtue consequentialism.

The most detailed work on this topic has been undertaken by Driver[89] and it is through some of her ideas that I will show how the two theories work well together. Driver's goal was to critique various virtue theories that have been prominent in the history of philosophy and to show how these did not account for traits that would typically be considered virtues.[90] Driver's approach differs from virtue ethicists who typically take internal qualities of an agent to be the necessary part of virtue existing at all.[91] She gives the example that when asking why something might be a virtue, it is not enough to say the agent possesses good intentions. Other examples she uses are: Foot's assumptions about human psychology,

[86] Hursthouse 2010
[87] For example, self-sacrifice to hone one's skills for hours on end to become a top level table tennis player.
[88] Annas 2006 presents a useful survey of types of virtue theory.
[89] Driver 2001
[90] Driver 2001 pp. 16-36 suggests modesty, trust, forgiving and forgetting and impulsive courage – her so-called 'virtues of ignorance'.
[91] Driver 2001 xvii

Aristotle's cultivated inclination, and Kant's sense of duty.[92] She takes the external results of a person's actions to be of paramount importance. She goes on to show how a consequentialist theory, by considering the link between the person and their actions on the world, could delineate virtues: "a virtue is a character trait that produces more good (in the actual world) than not *systematically*".[93] Driver shows that consequentialist has room for the virtues as well as being able to determine what they are. The idea is that good consequences tend to flow from good character traits. Thus, the observer sees good consequences produced by a particular agent and traces these consequences back to certain character traits. As the consequences are considered good, they confer on the traits in question the term 'virtue'. Conversely, bad character traits that are the source of bad consequences are deemed to be 'vices'. The use of the word 'tend' is important, because Driver is very clear about the fact that these consequences are to be considered overall and not just in one instance. She also notes that this overall nature of her account of virtues is important so as to avoid problems of 'moral luck'. She recognises that not all consequences are under the control of an agent. This means that in the moral evaluation of a trait by considering the consequences, it is hoped that any consequences that were down to luck and not the agent will not have a strong bearing on the final evaluation *in toto*. Unlike virtue ethics, the priority is on the good consequences not the internal qualities of character.

Driver's approach has been subjected suggested modifications but these do not undermine its use here.[94] In this thesis I am not concerned with the delineation of character traits into actual virtues, except in so far as I am rejecting the charge that certain character traits, generally considered to be good, will be undermined because of genetic enhancement in sport. In Section 1.4, I outlined MacIntyre's theory of social practices. This included the notion that there are goods internal to a practice and that these goods are only realisable if the participants in that practice are in possession of virtues which regulate their relationships with each other in pursuit of these goods. Thus agents involved in a particular practice of sport must necessarily be in possession of certain virtuous character traits that allow them to realise

[92] Driver 2001 pp. 42-50
[93] Driver 2001 p. 82 Her emphasis.
[94] For example Bradley 2005 thinks that in order to correctly identify various traits as being virtues or otherwise, the moral evaluator must compare the consequences that stem from these multiple traits in action. Additionally, the thought experiment must be undertaken whereby the trait's consequences are considered in counterfactual circumstances. This will provide, he thinks, a more accurate picture of which traits are in fact virtues.

the internal goods of the practice. In so doing, the agents can therefore bring about more happiness, that is what determines the consequences to be in fact good, than if they failed to this. I will return to this in the following section.

I have now developed a working theory of virtue consequentialism for use in this thesis. As it is the case that the consequentialist determines the ethical validity of actions on consequences alone, the virtue consequentialist realises that these consequences are more likely to occur if certain traits in the agent exist. The strength of this variant of consequentialism in the sporting context is that it can account for both good consequences and their source, virtuous people. Thus, the non-consequentialist should be partially satisfied because their emphasis on, for example, the self-inculcation of positive character traits, has found its place in this articulation of how people work towards an ethical life. Virtue consequentialism has captured the reality of sporting practices and will provide a defensible ethical framework against which I will morally evaluate innovations in the practice. I will now expand on the relevant consequences to the practice of sport.

1.6 Consequences and goods internal and external

Internal goods of the practice of sport might include the joy of a well-played game against difficult opposition or the result of the competition. These internal goods are directly associated with the agents engaged with the practice; the goal-keeper in football or the coxswain in a rowing boat, for example. In section 1.1 I briefly mentioned Mill's categorisation of pleasures and their relation to sport. Internal goods such as just described clearly map to sources of pleasure as presented by Mill. It is of no import where exactly on the spectrum of pleasure these internal goods fall, simply that they can reasonably be described as such. Given that these internal goods are sources of pleasure, they are therefore a source of happiness; the determiner of whether consequences of actions are good or bad. The internal goods of sport are specific to each practice of sport. It is *only* possible to enjoy the 'whack of leather on willow' in cricket for example. These are not special types of goods in the sense that they have ethical priority over other possible goods, but they are special in that they can only be found in each practice. It is a very specific way of gaining pleasure. Once the decision has been made to engage with a sport, as opposed to something else, pleasure can be gained through realising these internal goods and therefore good consequences are brought about.

Using virtue consequentialism, I have now shown a clear path to good consequences for those engaged in the practice that I will now re-iterate. In order to effectively participate in a practice, that is, realise its internal goods, an agent must be in possession of certain virtues of character. These internal goods bring about pleasure and therefore promote happiness which shows that the pursuit of these internal goods is a good action. It is assumed that that this happiness is greater overall than if agents did not engage in the practice.[95] As recognised by MacIntyre, the internal goods of practices are expected to change over time. This is as true of the practice of sport as other social practices.[96] I will show that although genetic enhancement will change sport and its internal goods,[97] that as internal goods are still realisable, pleasure and good consequences pertain.

Opponents of my argument may suggest that while virtue consequentialism accounts for all that is internal to sporting practices, that is internal goods and so good consequences, it does not do the same when considering external goods. A first example, however, seems unproblematic: fitness. Being involved makes a person fit. This is an external good because the person could have become fit in some other way (whereas to gain the internal good of playing rugby, an agent does actually have to play rugby). However, unlike cheating which I deal with below, this is not an example of pursuit of an external good that negatively affects the practice. The agent may not be as engaged in the practice as someone who, for example, particularly loves netball for its own sake does, but in order to gain their external good, she is going to have to immerse herself sufficiently in the practice to gain her external good. Moreover, this external good is beneficial for wider society; fitter people tend to rely on state-based healthcare systems less meaning limited resources are available for those that especially need them.

A second example does raise more issues. I will briefly consider the implications for agents involved in a practice with respect to cheating. An agent who cheats may gain some of the internal goods of the practice, such as a preferred result, but she cannot gain the majority of internal goods because by cheating, she has removed herself from a proper engagement with

[95] The importance of the availability of leisure activities and the prevalence of elite sporting activities suggests that global society does in fact value sport a great deal. Society is unlikely to be able to persuade all its members to continually do charity work instead.
[96] Norridge 2009 has many examples of the changes in different sports.
[97] See Chapters 4 and 5.

the practice. This then leads back to MacIntyre's claim that an agent who focuses on internal goods has no reason to cheat because she is better positioned to realise said goods. By subordinating herself to the social practice, which presumably is an optional activity, the agent understands, or at least comes to understand, that acting in a certain way is appropriate to this particular practice. If she acts in other ways, for example by using a more elastic golf ball than is allowed, by cheating, she is not acting in a way that will result in internal goods being realised. Other players will not trust her and the practice breaks down and might not continue for the cheater, or even the whole group. Thus, the agent focussed primarily on external goods is one who may cheat. Goods external to a practice would include fame and fortune. These could be gained through involvement with any number of practices as noted earlier. The lack of a link between a *particular* practice and the *general* external goods shows why the agent so inclined might cheat. As they are not interested in the practice in itself, for example the pleasure to be gained from long distance swimming, it may be rational for them to cheat. The focus on the external rather than the internal could lead the agent to lose sight of the practice for its own sake and could lead to immoral behaviour. Other examples might be the runner taking illegal substances to win prizes for breaking world records, or the boxer betting on his own loss before throwing a fight. Other agents involved in the practice clearly suffer from the pursuit of external goods as do those indirectly involved. The spectator who rejoices when a world best is lowered is likely to feel displeasure on learning that the athlete cheated to achieve it. It is clear that consequentially speaking it is better to strive towards the internal goods of a sport rather than the external. This is not to say that agents must ignore the external, simply that they must not be overriding.

The consequences of agents involved in sport are immediately apparent – the observer can ask whether the goods internal to the practice have been realised or not. Did competitors in a cross country running race successfully traverse the delineated course avoiding impediments such as rocks and rivers, for example? Yet, the ethical analysis does not stop at the realisation of internal goods. These are to be understood as the major part of any ethical considerations but there are consequences both good and bad in addition that are outside the practice but indirectly linked to it. In many sports a large group that has an indirect link to the practice is the body of spectators. If the spectators gained something from watching the practice, that is, they derived pleasure from their indirect involvement, then there are linked good consequences that are *external* to the practice. The same is true of external bad consequences.

A football player misses the final penalty kick and his team loses. Certain members of the crowd can use the loss as an excuse for violence and much damage is caused to the area surrounding the stadium. Such resoundingly negative consequences are linked to the missed penalty, part of the social practice, even if the agent, the footballer, is not morally responsible for them. This recalls my earlier point in Section 1.1 about how far from an action the consequences can reasonably considered. The player who cheats is clearly responsible for the bad consequences they bring to the world, but those that act in certain ways because of the results of a game are *themselves* responsible for what they do in the sense they have not considered the consequences of *their* own actions. On the other hand, consider the economic benefits that often come in the wake of sport. Such economic benefits are again external to the practice. A town may consider the economic side when supporting a home football team. If it was to do this and had no consideration for the sport itself, for example not employing groundskeepers to maintain the pitch as this did not immediately appear to maximise profit, the practice would eventually be undermined with players tripping over the turf. Rather, the town should focus on the football and hope for the attendant good consequences that are expected to issue from it. If they do otherwise, in aggregate, the consequences will not be as good. Hence there are good consequentialist reasons to not focus on the external goods of sport.

By meeting a charge made by the President's Council on Bioethics, I will develop the idea of internal and external consequences further. In its extended treatment of genetic enhancement in sport,[98] the President's Council first considers the idea of an athletic competition. It sees the real meaning of sport, even at the top level, as being people's actions in the world, particularly the experiential benefits for the athlete and spectator of this excellence in physical action. This trumps a well-deserved victory over challenging opposition, even if performed in an ethically praiseworthy way.[99] In any human practice, the claim goes, the dignity is not found in the actual raw result but in the way this result is achieved. Which athlete did it and how did she achieve this performance?[100] The action should not be taken in isolation, but in terms of both the identity of the agent and her actual *doing* of it.[101] This

[98] PCB 2003 pp. 101-158
[99] PCB 2003 p. 142
[100] This idea is discussed further in Section 4.3
[101] PCB 2003 p. 143 Their emphasis

results in two questions: is there more to a sporting endeavour than the result, and what must be asked about the enhanced agent's actions?

If the President's Council is correct in its analysis of the sporting competition, in terms of the consequences that I am currently considering, there is more than just the result.[102] In terms of consequentialism, the authors are certainly correct. The goods internal to the practice that *include* the final result are part of the good consequences that flow from a particular practice, the pleasure gained by those engaged with it. Additionally, although pursuit of external goods regularly detracts from the practice, such actions still result in consequences that are to be included in any ethical consideration.

However, at this point, I am interested in the *result* which has ramifications for those directly involved in the practice: namely the athletes and (indirectly) the supporters. The result of a particular sporting competition brings about beneficial consequences to some and not so beneficial consequences to others. The victor(s) will presumably be happy; the losers, less so. There may be victories of different types – an easy win or a long drawn-out contest that lasts until the dying moments of the competition. On either of these ways of winning, and presumably they are on a continuum, the direct participants in a competition will be happier, I expect, than the losers. This is even the case if the losers felt that they had performed as well as could be expected, but their best was still not good enough.

However, this still only illuminates consequences for the direct participants. Looking at the wider picture though, it is possibly the *spectators* in whom the President's Council on Bioethics are interested in. The mildly interested spectator might have simply checked the results of the competition on the internet and felt pleasure that their particular team was victorious. However, a spectator who actually *watched* the practice in person has gained more than just mere information in terms of the result of the competition. He has been a part of the action as it were; he has watched the match, empathised with the players, been excited by the tension and the uncertainty of the result throughout the competition.[103]

[102] I think in fact that the President's Council have a more virtue theoretic approach to ethics, but the following interpretation that I offer seems applicable.

[103] This description fits with the idea of a good sports competition as noted here and is based on Loland 2003 and Fraleigh 1984 who is credited with this description of the social practice under analysis.

Sigmund Loland delineates spectators into three groups: connoisseurs, supporters, and fans. These groupings are interested in standards of excellence, construction and confirmation of identity by watching the competition and entertainment respectively.[104] He considers these groups to have differences in preference strength for the sort of competition and the extent that they are spectating, as well as expecting them to be different in numerical size. He concludes that for this group overall, the evenly matched competition fulfils their preferences to the greatest extent.[105] This may also be true for athletes themselves, although it would depend on the character of the individuals involved. Some may prefer a crushing victory whilst others may opt for a slim margin that almost went against them.

As it is the case that many sports are driven more by commercial pressure than what would strictly be better for the athletes and spectators generally, the bulk of my ethical analysis will remain with those directly involved. Wider society does have interests in social practices[106] but as those most affected by changes to a practice are those directly engaged with it, I will consider the consequences pertaining to the athletes in greater detail; that is the consequences stemming from realisation, or not of internal goods.

To re-iterate: the most relevant good consequences in this defence of the inclusion of genetic enhancement in sport are whether or not the goods internal to the practice have been realised. I will also examine other consequences that are external to the practice. These may be positive or negative, but as enhancement is expected to change the practice of sport in some way, these also will be examined. However, due to their external nature and consequent increased distance from those directly involved in the practice, external goods will be considered to have less moral bearing. As already noted, there are strong consequentialist reasons supporting this claim.

Sport is a social practice that is not a necessity for any human society. It is entered into voluntarily precisely because of the internal and external goods that it allows to be realised. An opponent of my view may ask why do the good consequences associated with the internal goods outweigh the external consequences those involved could otherwise be pursuing. This analysis is concerned with possible changes to the social practice of sport, not whether or not

[104] Loland 2003 pp. 118-122
[105] Loland 2003 p. 136
[106] Parry 2010 and Wachter 2001 cited in Lenk 2011 talk about the relationship between sport and society.

more good could be realised by other pursuits. Clearly, if everyone possessed more resources than they needed, they could constantly use these to help the plight of those not in such a position. This is an appropriate question for philosophy generally, but I am concerned with examining sport as it is and might be, not whether people should be allowed to engage with it. Finally, on a less extreme analysis, the agent who pursues external goods suffers bad consequences by not being able to realise as many internal goods. It is true that the agent may not worry about this in the short term. However, as has been noted several times, this type of agent is unlikely to be able to repeatedly engage with the practice if he acts in such a way. This would mean that he is not even able to pursue external goods through the practice, which means there are additional bad consequences for him.[107] Also, and importantly overall, there is less happiness and therefore not as many good consequences when practitioners act in these ways.

This discussion of the consequences of sport is important because the opponents of genetic enhancement in sport are very much concerned that in some way sport will be undermined by its presence. These concerns are explored in the Chapter 4 below. Using the ethical theory of virtue consequentialism, I will show that this is not at all the case, and that goods internal to sport are still realisable and possibly more so with the inclusion of genetic enhancement which is further discussed in Chapter 5. If internal goods are realisable then pleasure, happiness, and good consequences follow as articulated above.

1.7 A sports-based example

Two rugby players are involved at the top level of English club rugby. One is motivated by his love of the game; the other certainly enjoys playing the game, but is rather more focussed on what his performances in the game will bring to him.[108] The first player throws himself into the practice and is pleased that because of the level he has reached, he is able to earn a living doing an activity that he particularly enjoys. He is known for his level of sportsmanship and honourable approach to the game. The other rugby player however, because he is only ever thinking about what playing the game may bring to him, is not known

[107] This may seem extreme, but it is assumed that someone engages with a sport initially for its internal goods and then becomes distracted by external goods. If the athlete then cheats they are unable to realise either internal or external goods; the result is resoundingly negative for the athlete.
[108] It is unimportant what these external goods are, simply that they are external.

for the same positive traits. He is the same standard of player as the first, but he has been known to be overly rough and to push the rules to the limits and sometimes goes past them when the referee is not looking. His teammates appreciate his not inconsiderable skills, but do not have positive things to say about his character.

Both players in the example are involved in the same social practice. The first regularly realises goods internal to the game and is considered a trustworthy team member. The second, although certainly contributing to victories effectively, is someone people are more likely to be wary of, precisely because they are not sure his motivations are properly aligned with the game.

The issue that this example brings out is that there are levels of internal goods that are possible in a practice such as sport. An agent does not necessarily bring about bad consequences by pursuing only external goods, but at the very least they bring about fewer good ones. This does not mean that the practice cannot continue. Rather, this reflects badly on the character of such an agent.[109] Of course, involvement in a practice does not have to be endlessly maximising, rather that, in sum, there are more good consequences than bad. The point at which this is not achieved, typically through pursuit of external goods, is where the agent has failed to appropriately participate in the practice.

Conclusion

In this chapter, I began by showing the positive features of consequentialism in general; its ease of application, resistance to objections, and relevance to quotidian life meant that it was suitable for use in this thesis. That is, it can effectively be used to delineate ethical genetic enhancements in sport. Recognising that sport is a social practice and using a MacIntyrean understanding of these, I noted that the concept of virtues being a necessary part of participants' successful realisation of goods internal to the practice, in combination with a common recognition that certain character traits are involved in sport, meant that virtues needed to be accounted for in the ethical theory that underpins this thesis. Taking on Driver's ideas about the delineation of virtues by consideration of overall consequences, I presented virtue consequentialism. I recognised the importance and difficulty of analysing the extent of

[109] Additionally, for them, there are the bad consequences in the form of not realising the internal goods.

consequences and noted that those external to sporting practices will be considered, even if not in the detail of internal ones. Internal goods to sport are only realisable by being involved in some way with the practice. These goods bring pleasure and are a source of happiness. If engagement with sport brings about more happiness than not being engaged with it, then the action of being so engaged is morally appropriate. Throughout this thesis I will consider if internal goods are being realised, and if so will assume, because of the philosophical work done in this chapter, that good consequences pertain. Having set down this thesis' theoretical foundations, I will now respond to the objections to genetic enhancement that have emerged in the literature.

Chapter 2: Minor objections

Introduction

The first set of objections I will meet are those typically invoked at the beginning of any debate about novel technology. Proponents of these minor objections, when they relate to genetic technology, sometimes go as far to suggest that *any* genetic modifications of the human genome are morally suspect. This would include correcting a deleterious genetic inheritance as well as improving upon one that functions as expected. This opposition is based on two concerns: metaphysical wills, and nature and the precautionary principle. The former is the idea that by manipulating the human genome, the species is going against the will of a metaphysical entity such as the Christian conception of God or the secular conception of Mother Nature. Acting in such a way is wrong precisely because these entities have sole remit on the design of life. The idea of nature has other meanings as well and I delineate these in one sense as a metaphysical entity, and in another in which nature is used as a normative force, that is to say, the 'natural' is the final determiner of whether something is ethical or not.[110] Some opponents of genetic manipulation make the claim that the natural is identical with the good and so to manipulate nature at the genetic level is necessarily bad. Given the overlapping use of language, if not meaning, I will consider these three arguments together in the same section. I then examine the claims of adherents of the precautionary principle. Although there are different formulations of this principle, generally it is described as the idea that if the ultimate consequences of an intervention could be resoundingly negative, the intervention should not be undertaken in the first place.

Adherents of the arguments about genetic modification being against metaphysical wills and nature typically argue on deontological grounds. As is appropriate in this situation I will show that their claims fail on their own terms. Proponents of the second set of claims concerning the precautionary principle usually argue using a consequentialist moral theory. Given that my virtue consequentialism is a variant of this sort of theory, there will be more in common with this in my consideration of the precautionary principle. I will show that neither of these sets of objections succeeds in requiring a cessation of utilising genetic technologies.

[110] Soper 2011 p. 3

2.1 Metaphysical Wills and Nature

Metaphysically sourced creation

This objection is based on the claim that certain metaphysical entities are responsible for the whole of creation, including people. Another name for this objection is 'Playing God'. However, Silver has suggested that in post Christian Europe as opposed to the Christian United States, the idea that there is a deity responsible for creation has been replaced with the idea of nature as a metaphysical entity.[111] Nature as such an entity is seen to have the same features frequently ascribed to metaphysical sources of a divine bent. It is for this reason that both the religious and secular objections are being taken together.

Opponents of many technological innovations that affect people or the world see this as a reason not to do so. In advance of exploring this claim, it is worth noting the distinction I made at the start of this chapter; that there is another meaning of nature which is entirely different. This is such that nature or natural things have a normative force themselves; those things that are natural are therefore good. This meaning is also used by opponents of new technologies to suggest people should not utilise them. I will consider nature as a metaphysical entity together with deities who are thought to have powers of creation. I will then look at nature as a normative force. All three have been used as a reason not to use something innovative; they are all an appeal to an external (to humans) standard. I will show that these claims are not justified and do not show the use of genetic technology to be impermissible.

C.A. J. Coady explains that religions that are theistic in nature typically involve the idea that God is in charge of creation.[112] On this view, there is a metaphysical entity whose plan will be interrupted if humans act outside their assigned boundaries.[113] Needless to say it is not always clear where these boundaries are, and as an early writer on genetic technology adds, how would genetic engineering differ from the currently typical activity of medicine?[114] Understandably, the pain or reduced functioning typically associated with being ill is something people ask medical personnel to rid them of. It is entirely natural, or part of who

[111] Silver 2007 pp. 175-176
[112] Coady 2009 p. 156
[113] Glover 1984 p. 46
[114] Glover 1984 p. 46

people are in the sense of divine creation, to suffer in this way. Yet, these medical personnel routinely interfere with aspects of the 'nature' that all humans possess.[115] Consider a possible world where people thought that it really would be better to simply continue through life without any interference on their part or by the medically trained. Presumably in such a world there would be a far higher mortality rate at a younger age. Childbirth would once again be an especially dangerous activity.[116] Such a world would be similar to many human societies of the last few thousand years when medical knowledge was limited and often risky itself.[117] Yet in the modern age, if the knowledge and resources are available, it is more likely to result in moral approbation than laudation to let things take their 'natural' course.

Those who do not subscribe to a particular world view that involves a divine planner are unlikely to see going against the will of a metaphysical entity as an objection at all. Adherents of this view, whether they see the giver as being divine or consider nature to be a metaphysical entity, appear to rank the natural or 'given' as ethically more important than the artificial.[118] Yet there remains the problem of why thwarting a person's *natural* inevitable demise through *natural* diseases, with medicine is any different. As John Harris argues, there is a pervasive and misguided view of nature that holds it in high esteem simply because it is natural. Such adherents ignore natural things that are without doubt bad for humanity – extremes in weather for example. It is rational, he goes on, to want things that are natural when they are beneficial, but people should remember that nature itself has no moral quality and its interpretation should be seen in relation to technological progress. Prior to the invention of antibiotics and vaccines, it was natural to die of septicaemia, smallpox and polio.[119]

So far, contrary to the 'playing God' objection, there are the issues of not subscribing to a particular world view and the very real fact that humans intervene in nature, or divine plan, as far as they can when they do not get something good from it. In fact, although the term 'human nature' is particularly ethereal, it would appear to be in human 'nature' to overcome

[115] As far is known there are no immortals, although de Gray 2004 suggests the first people to live to 1000 are already alive.
[116] Porter 1999 pp. 711-712
[117] Porter 1999 has many examples of this problem. For example pp. 710-718.
[118] Harris 2009 p. 133
[119] Harris 2009 p. 134

things people encounter that are problematic.[120] The lack of a warming coat of hair and susceptibility to the vagaries of the elements were early examples of problems that the species overcame. Today, people suffer from precisely the fact that life expectancy has been extended considerably in the developed world, so that they are likely to die from a form of cancer or heart disease, rather than smallpox, for example. It is not clear how this goes against divine will or nature. If metaphysical entities are credited with making people as they are, then surely people would be acting exactly in accordance with them. This is to say that if metaphysical entities are responsible for all of creation, then they are also effectively responsible for everything people create. Moreover David Resnik asks whether a metaphysical entity might not *want* people to alter themselves. If human characteristics could be changed in ways that benefitted humankind, for example, in terms of human welfare and justice, should it not be undertaken? Clearly, a reduction in justice and an increase in suffering should be avoided, but good goals seem a reasonable direction to take the technology in.[121]

Another approach is suggested by Coady. Those who do not subscribe to the theistic, creation-based worldview can consider the 'playing god' objection by a thought experiment involving the characteristics such a metaphysical entity would have, if it existed.[122] Whether this would be an exercise ever undertaken by someone who is not religious notwithstanding, Coady is talking about *perspective*. While the Christian god is omnipotent, omniscient and always ultimately benevolent, humans tend towards fallibility, have finite powers and do not always act towards each other in a benevolent fashion.[123]

Clearly, people do not have the divine powers listed in the previous paragraph. Yet everyone needs to be able to go about their lives despite this lack. People can hardly opt to do nothing because they are not, for example, omniscient. Rather, they manage their lives using whatever cognitive functioning they happen to possess. The comparison with a metaphysical entity who has certain helpful powers for effective decision making serves as a reminder about human fallibility. However, this calls for prudence in any particular situation not an abstention from any activity whatsoever. This prudence is hardly unique to genetic

[120] See Mill 1874 pp. 64-65
[121] Resnik 2006 p. 214
[122] Coady 2009 p. 161
[123] Coady 2009 p. 163

enhancement technology and is relevant in all aspects of life. For example, people tend to take care when crossing roads. They do not usually just walk straight out hoping that there will be no traffic. People budget if they are sensible to allow for unforeseen contingencies. A third example is that teenagers do not always engage as they should with the work covered at school. This can be expected to have sometimes severe consequences later in life that could have been avoided if they had not been talking to their friends in mathematics lessons. Proponents of the going against the will of a metaphysical entity view are reasonable to ask for prudence with respect to application of novel technologies, but are not able to offer sufficient reasons for prohibiting the technology.

Nature as a normative force

Given that appeals to metaphysical entities do not appear to have much argumentative strength, I will now consider the appeal to nature, where nature itself is thought to have some normative weight. Adherents of this view equate the natural with the good, so to go against nature is to go against the good. The problem, however, is justifying this equation. A point from Mill is pertinent: although bound by the physical laws of the world, there is no necessity to derive normative rules from them.[124] The reason for this is that natural facts can and have been interpreted to suit the justifications of proponent of a particular view – a common problem in trying to move across the fact-value gap. For a long time, women were treated by men as being inferior due to their 'natures'.[125] Moreover, if nature were followed in its entirety then people so acting would only be worthy of moral approbation because of all the horrors found therein.[126] This is not to miss the point that human conduct is limited by its precise biology, rather it is to recognise that conduct is not prescribed by this limitation. People have created myriad wide-ranging moral systems without making the error of trying to derive these from human biology.[127]

The idea of the natural as providing limitations on behaviour but prescribing it, is developed by Richard Norman.[128] He argues that people can only make sense of any achievements when these are made against a set of given and natural constraints. These constraints are apparent in

[124] Mill 1874 pp. 16-17
[125] Mill 1998b
[126] Mill 1874 pp. 64-65
[127] Levy 2002 p. 137
[128] Norman 1996

that human life is restricted temporally and biologically. That is to say that everyone dies eventually, cannot fly and is susceptible to disease. In the absence of such limitations, people would have no reason to choose between the options open to them throughout their lives. This is because if people really could choose anything and there were no such limitations, they would have no reference point against which to make judgements. Norman urges that it is simply a case of having threshold limitation, past which, rather than being concerned about negative consequences, the harm is the removal of meaning.[129] Yet he adds that these 'frameworks of meaning' that is existence with natural limitations are not destroyed when subject to gradual change.[130] The reason for his last point is clear; it would only the case that meaning would be lost if suddenly there were no limitations on human existence.

Norman's original argument was based around the claim that IVF was a grave concern because it supposedly went against nature. The aim in his paper was to show that although it is rational to imbue natural limitations with moral standing, shifts could occur that would not result in going past a threshold, so actions would still have meaning. Norman's argument is a far more thoughtful approach to the argument from nature, which can so often resemble a knee-jerk response to changing ways of interacting with the world.[131] The question remains, however, about the place of genetic modification in this well constructed scheme.

I have already dispensed with the idea that genetic modification is against nature simply because of its interfering with it. Recall my example above about a world without medicine. Genetic modification may have the power at first sight to change biological 'givens' about the species. Immortality, for example, could have serious ramifications for the planet.[132] It seems unlikely however that any of the extremes of modifications, immortality, immunity to all disease, invulnerability and so on would ever be possible. Consider the rate at which a virus mutates – any changes made to the genome are unlikely to respond faster than that for example. If extremes are off the table and it is assumed that modifications take time to be invented and enter society, I would expect any changes the species could make to itself to be slow. This claim is based on the protracted lengths of time it takes to get ethics committee approval, funding, and through all the relevant testing stages.

[129] Norman 1996 pp. 3-6
[130] Norman 1996 p. 10
[131] Rollin 1995 also appropriately explores genetic engineering with respect to appeals to nature.
[132] For exploration of issues see: Barazzetti 2011, Overall 2011, Mordacci 2011 and Bond 2011

Conservative bioethicists seem to be concerned that overnight humanity will be able to transform itself into something completely different, and this is what scares them.[133] I posit that their fears are groundless because the timescales involved will not change natural limitations in a way that leaves human life devoid of meaning. There will always be limitations, which, incidentally, humans will always fight against; but if it takes limitations to have lives with meaning then genetic modification is not going to rid the species of them. This means that while at first sight burgeoning human technological capabilities might appear to be 'against nature' and therefore the good, this is not in fact the case.

Conclusions

As noted at the beginning of this chapter I determined that it would only be fair to my opponents to invoke consequentialist arguments if they too were already making a case on those grounds. This was because in Chapter 1 I have already made my case for why virtue consequentialism is the superior moral theory. This of course means that I had to demonstrate the failings of limitations of my opponents' arguments on their own terms. The appeal to the will of a metaphysical entity was incoherent on a number of counts: knowing the content and direction of that will; actually being an adherent of one metaphysical entity not another, or none; and the fact that such a will could have interpretations that supported use of genetic technology. These all meant this objection failed. The problem of over interpretation also plagued the objection based on nature as a normative force. Humans simply do intervene in nature all the time, on a pervasive scale that suggests this is part of being a member of the species. This may not be a knockdown argument, yet it does mean that proponents of this view seem to be arguing on both sides of the debate. The measured approach by Norman suggested that natural limitations gave human life meaning. This was more promising for my opponents. This was in the sense that if his characterisation of meaning is apt then something that was unnatural in that it was bad because of the resultant loss of meaning, then there may be reason not to engage in it. Yet here too, given that the possibility of meaning seems to persist when only small and slow changes pertain – coupled with my suggestion that the novel technology is unlikely to ever by wildly or quickly transformative – that there was

[133] See my Chapter 3 for an extended discussion of these concerns.

space here too for genetic technology. In essence it was not ruled out by either of the sets of arguments above, so I will now turn to the precautionary principle.

2.2 Precautionary Principle

The precautionary principle appears to have originated when states were considering how they might avoid damage to the environment. This then moved into the international arena in the context of treaties that relate to inter-governmental actions towards the environment.[134] As John Harris and Soren Holm wrote their article critiquing the principle in the context of biomedical ethics, I will base this section on an exposition of some of their arguments in relation to genetic modification. At the outset it is worth noting that the Harris and Holm paper has received criticisms of its own, but I think their general ideas effectively show the precautionary principle is both a minor objection and concurrently does not preclude genetic modification in the future.[135]

I will begin with Harris and Holm's articulation of the precautionary principle:

> ...When an activity raises threats of serious and both irreversible and irremediable harm to human health or the environment, precautionary measures which effectively prevent the possibility of harm (e.g. moratorium, prohibition etc.) should be taken even if the causal link between the activity and the possible harm has not been proven or the causal link is weak and the harm is likely to occur.[136]

In essence then, the precautionary principle asks about the possible negative consequences of actions and the protocols that should be in place to stop these negative consequences from coming to fruition[137]. There are clearly definitional issues that would need to be clarified – the constitution of 'serious' as the level of certainty of harm that needs to be met before the principle is brought into play. It is this second issue that brings with it particular interpretative problems. If this is set too low, will a catastrophic risk occur, or something rather less severe that itself remains a concern? If it is too high then it seems that all future action in the field it is being invoked will be paralysed. Harris and Holm in fact make the claim that the principle:

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[134] Harris and Holm 2002 p. 357
[135] For example, Hughes 2006 who also cites Weed 2004.
[136] Harris and Holm 2002 p. 359
[137] Harris and Holm offer a variety of formulations but this one demonstrates the general argumentative direction of the precautionary principle.

> ...inexorably requires science to be ultra-conservative and irrationally cautious and societies to reject a wide spectrum of possible benefits from scientific advance and technological change[138]

Moreover, there is the additional concern at the strong end of its formulation that invoking the principle to avoid possible harm by delaying an innovation could cause more actual harm while the possible consequences are being investigated.[139] It seems that as a general principle requiring a cautionary approach to the utilisation of technological innovations, the precautionary principle is relevant. Yet prudence does not entail cessation. It is hoped that past disasters such as Thalidomide never reoccur,[140] but there are countless ways that techno-medico innovations have improved the human lot. This thesis is not tasked with adding to the debate on the precautionary principle, rather it is simply showing the principle to be a minor objection to genetic modification.

Harris and Holm expand on this latter point. UNESCO's International Bioethics Committee's concern about intervening in the human genome is clear. So far, evolution has benefitted humans, and humankind must be very clear about any changes it makes to its genome as these changes currently have unknown consequences are assumed to have spectacularly negative ramifications.[141] Harris and Holm point out that UNESCO is taken seriously then surely an unmanipulated genome would have to be compared against a manipulated one. It would then be possible to see which is better for humanity and where any precaution should be directed. There also seems to be a presumption from UNESCO that *this* point in human evolution is definitively the best the species will ever experience.[142] Even if an opponent weakened this claim and said that evolution had done very well for the species so far, which of course it has, this would still not support UNESCO's case. It is vital to remember that not everything about the species is the *best* adaptation to the environment.[143] A good example is the possibly defunct human appendix, that his little (if any) value for human flourishing and where an infection can result in death.[144]

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[138] Harris and Holm 2002 p. 357
[139] Harris and Holm 2002 p. 354
[140] Porter 1999 p. 460
[141] Harris and Holm 2002 pp. 132-133 UNESECO Press Release No. 97-29 in Harris 2009
[142] Harris and Holm 2002 p. 366
[143] Coyne 2009 p. 12
[144] Kumar and Clark 2009 pp. 315-316 "Acute appendicitis is the most common surgical emergency...occurs when the lumen of the appendix becomes obstructed with a faecolith...if it is not removed at this stage gangrene

Consequentialism's approach

When these ideas about evolution are properly considered it seems that adherents of the precautionary principle, when it acts to limit technological innovation, have much to explain, primarily because it is the embodiment of consequentialist ethical analysis. In the same way that under consequentialism an action is deemed unethical if the consequences bring about more summed harm than benefits, so too does the precautionary principle rule in or rule out taking technological action. If it is the case that genetic manipulation can correct a genetic defect that will cause suffering for the individual if simply left, the balance is very much on the side of benefits. There are 21,134 genetic disorders and problems caused directly at the genetic level,[145] which means proponents of the theory are going to have to justify a great deal of suffering if they hinder these medical developments. If it is assumed that such a technology could only be used in people if it were actually deemed safe in the same way new drugs must satisfy regulatory criteria, then such technology seems unproblematic.

However this assumption may allow too much and it may not be possible to reach this level of risk.[146] Yet, this would be a strong formulation of the precautionary principle. I noted above that there were aspects to the formulation that could be altered. These would certainly make it a weaker formulation in the sense of requiring a lower probability of risk. This may seem an arbitrary move, but note again Harris and Holm:

> Every event which does not entail a logical contradiction is logically possible (or as philosophers sometimes put it, there is a possible world in which it is instantiated), but there are many logically possible events which are not possible in the present world....What the [Precautionary Principle] asks us to do is to suspend this distinction when it comes to the possibility of certain kinds of harm, and act as if the mere fact they are logically possible also means that they are not only possible, but even likely to occur.[147]

In terms of the present discussion, there are of course logically possible consequences caused by genetic modification. People may be made sterile for example. Yet, whilst this might be disastrous personally, unless it was at the level that would result in the extinction of the

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occurs with a perforation leading to a localised abscess or generalised peritonitis...delay in treatment of peritonitis produces profound septicaemia which may lead to the development of multiorgan failure."

[145] Online Mendelian Inheritance in Man 2012

[146] The opponent of the technology must demonstrate why additional safeguards would be necessary on top of those currently in place for medical innovation.

[147] Harris and Holm 2002 p. 363

species,[148] the question would have to be asked how likely it is. People generally are not especially adept at assessing risk in everyday situations. This is probably beneficial as they may end up being paralysed by concern about making the right decision.[149] Bioconservatives play on this problem and speak of genetic modification as if it definitely will bring the end to humanity. If genetic tools are as powerful as is currently envisaged then I imagine that every effort will be made to 'bring them to market', thus necessitating their safety. This would also open the door to safe genetic enhancements on which harms and benefits have been analysed at length because they would have to satisfy at least the safety criteria of new drugs. Thus, with the prudential requirement of safe application in place, genetic technology does not need to be stopped in line with the precautionary principle, at least not from the outset before sufficient avenues have been explored. The prudential requirement based on a weak formulation of the precautionary principle is not unreasonable given past disasters due to enthusiastic use of novel technologies.[150] The point is that at present there is simply not enough evidence either way, and until that point is reached it is more appropriate to develop the technological innovations carefully given that there is a whole host of suffering at stake.

Conclusion

In this chapter, I first showed that the objection to genetic modification based on the supposed going against the will of a metaphysical entity – whether a typical deity or nature failed. This was because of the obvious difficulties in discerning the will of said entity and the fact that the will could easily be interpreted in a number of ways. The entity may want humans to find a way to change their embodiments and to reduce suffering through disease. Another understanding of nature was then considered as it has also been used as an objection to technological innovation. The charge here was that to act in certain ways is to go against nature. As nature is good, then acting in such a way is bad. Simplistic versions of this argument seem to overlook the fact that the very practice of medicine acts against the 'natures' of humans on a daily basis, and few would prefer a world where that was not the case. Norman's account of the natural that gave it importance because of the imposed limitations on human action that subsequently gave them meaning ultimately failed to

[148] Bostrom 2008 includes papers detailing a variety of scenarios that might result in this.
[149] Schneier 2008 points out that people tend to be convinced by a vivid description of a scenario rather than statistics about it.
[150] Discussed in Chapter 3.

preclude genetic modification as well. This was because of the expected changes that the technology could realise would not be immediate, thus the general limitations that humans experience would not be lost so human action would have meaning. Moreover, the true limitations, such as death, are unlikely to ever be lost.

Next I considered the precautionary principle. This device is one way of thinking about the ramifications of new technology or, in fact any sorts of actions. It links harms with possible consequences and requires a cessation of activities depending on both the likelihood of risk and the level of harm. A strict and therefore strong formulation of the principle seemed untenable as it requires the restriction of almost all avenues of scientific enquiry. However, by considering the difference between logical possibility and actual probability of consequences occurring, I suggested that a weaker formulation could call for the prudential development of the novel technology. This was further justified because the technology will in the first instance be used to relieve suffering and then later, when it is presumptively safer, may be used for enhancement purposes. Thus though this set of objections collectively calls for prudence, they do not justify the prohibition of genetic medication.

Having met these minor objections, I will now consider the first set of major objections to the use of genetic technology based on the possible societal ramifications of using such innovations.

Chapter 3: Societal Objections

Introduction

Although this thesis is concerned with ethical genetic enhancement in sport, it is instructive to consider the arguments and claims of some authors who are against the enhancement project entirely, regardless of how the technology is used. It is not controversial to suggest that genetic enhancement will find its early adopters within the sporting context; at the elite level, athletes are constantly trying to find an edge over their fellow competitors, and moreover, because sport is a social practice, if enhancements exist in sport, they necessarily exist in society. Hence the importance of meeting objections based on genetic enhancements having negative effects *on* society itself.

In the literature, those who are opponents of certain novel technologies such as genetic enhancements are described as conservative bioethicists, which is in contrast to more liberal bioethicists.[151] Although there is a spectrum of views ranging from the 'absolutely no genetic enhancement' to the 'anything goes' via 'possibly some, with a prudent approach', I have identified authors whose work is towards the prohibitive part of this spectrum. I will critique three main classes of objections to genetic enhancement. The first objection I consider is based on 'Moral turpitude', and is espoused by Sandel.[152] His claim is that if genetic enhancement is allowed to go ahead, there will be dire moral ramifications for the whole of society. The second objection is based on 'Human dignity' and is offered by both Kass[153] and Fukuyama[154]. Although their articulation of the problem caused by genetic enhancement is slightly different, it amounts to the fact that something about 'what it is to be human' will be severely threatened. The third objection is 'Intergenerational distortion'. Habermas[155] worries that by having a hand in enhancing offspring, people will undermine relationships between the different generations that make up human society. This will have a particularly negative effect on those whose genomes have been intervened in and cause them to be discombobulated with respect to who they are in themselves and their relationships to others.

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[151] Agar 2004, Agar 2010, Bostrom 2003, Bostrom 2008a, Buchanan 2011, Harris 2007, Harris 2009
[152] Sandel 2007
[153] Kass 2004
[154] Fukuyama 2003
[155] Habermas 2007

In this chapter I will show that these three negative views of genetic enhancement raise important questions about the moral fabric and structure of society; what it means to be a human; and the relationship between successive generations of the species. These issues notwithstanding, I will show that these arguments do not offer a sufficiently justified demand or set of arguments for the complete prohibition of genetic enhancement technology. At best they can demand careful introduction of the technology and its prudential utilisation. This would be true for any novel technology that purports to have the transformative power over human embodiment that genetic technology would appear to possess. Having paved the way for genetic enhancement in society, I will then show why it should be permitted in sport specifically in Chapters 4 and 5.

3.1 Moral Turpitude

The first objection to be examined is that of societal moral turpitude; the degradation of certain moral aspects of society. To begin, I will set out Sandel's argument, who in short, thinks that genetic enhancement is:

> ...objectionable because it expresses and entrenches a certain stance towards the world – a stance of mastery and dominion that fails to appreciate the gifted character of human powers and achievements, and misses the part of freedom that consists in a persisting negotiation with the given.[156]

These concerns are directed at both the problems that such actions present for those doing self genetic modification as well as those who have been modified. That is to say: adults genetically changing themselves and those children whose parents had a deliberate hand in their genetic make up. Sandel points out that his claims should not be seen as narrowly consequentialist:

> ...the moral stakes in the enhancement debate are not fully captured by the familiar categories of autonomy and rights, on the one hand, and the calculation of costs and benefits, on the other...concern with enhancement is not as individual vice but as a habit of mind and way of being.[157]

This has two facets:

> One involves the fate of human goods embodied in important social practices – norms of unconditional love and an openness to the unbidden, in

[156] Sandel 2007 p. 83
[157] Sandel 2007 p. 96

> the case of parenting; the celebration of natural talents and gifts in athletic and artistic endeavours; humility in the face of privilege, and a willingness to share the fruits of good fortune through institutions of social solidarity. The other involves our orientation to the world that we inhabit, and the kind of freedom to which we aspire.[158]

He further explicates the latter:

> It is tempting to think that bioengineering our children and ourselves for success in a competitive society is an exercise of freedom. But changing our nature to fit the world, rather than the other way around, is actually the deepest form of disempowerment. It distracts us from reflecting critically on the world, and deadens the impulse to social and political improvement. Rather than employ our new genetic powers to straighten the "crooked timber of humanity," we should do what we can to create social and political arrangements more hospitable to the gifts and limitations of imperfect human beings.[159]

The result of the foregoing concerns is that use of genetic enhancements will "transform three key features of our moral landscape – humility, responsibility, and solidarity."[160] The negative transformation of these moral features of society makes up the moral turpitude that Sandel envisages if genetic enhancement is permitted in society.

These excerpts help ground Sandel's normative claims. When a person desires to genetically intervene in their own or their children's genomes, they fail to appreciate the gifted nature of their lives. The results for society of doing this are resoundingly negative. There will be both a reduction in humility and a large increase in responsibility in terms of traits they do or do not choose for their children. These are not the only problems parents and children will face. Parents are judged to be breaking the norm of unconditional love, while children will suffer from a reduction in freedom. Moreover, because designed children will not have the same origins as non-designed children, there is a third problem for society. People will not feel the solidarity with their fellow members that they would have had before the advent of genetic modification, knowing that they all started life in the same way.

Some of the concerns Sandel raises were based, by him, on Habermas' work concerning intergenerational distortion[161]. At this stage, I will look at Sandel's concern that people do not

[158] Sandel 2007 p. 96
[159] Sandel 2007 p. 96-97
[160] Sandel 2007 p. 86
[161] Sandel 2007 pp. 79-82 It is for this reason that I will examine these arguments below in Section 3.3.

appreciate something important about their lives, namely its 'giftedness' and the claim that this will result in the negative moral repercussions of a reduction of humility, an increase in responsibility and a reduction in solidarity.

The notion of giftedness that Sandel espouses is such that human beings typically enter the world with various talents that they possess simply through the vagaries of life[162] that resulted in their coming into existence. When people strive to achieve whatever projects they wish to embark on, they do so knowing that the abilities they do this with were gained by happenstance. If people are designed by others or genetically modify themselves, "our capacity to act freely, for ourselves, by our own efforts, and to consider ourselves responsible – worthy of praise of blame – for the things we do and for the way we are"[163] is threatened. The result of such a stance of mastery is a reduction in agency; however, when people should in fact be accepting of their genetic disposition and go through their lives with this in mind – as this promotes the virtues of humility and solidarity. The vice, as Sandel sees it, of 'mastery' is being set against the virtue of 'giftedness'. I think that, although he does not specify the term, Sandel is calling for people to live authentic lives, which I discuss below in Section 5.4. Before considering 'mastery', I will make a brief detour into the virtues.

When presenting Sandel's argument above, the second excerpt contains his explicit avowal about how genetic modification should be considered. It should not be a balancing out between consequences and rights. Rather, if society permits genetic modification, the undertaking will bring with it (negative) 'habits of mind'. I take this to mean internal dispositions of an agent, namely, virtues. Sandel does say that his justification is not based on 'individual vice' by which I think he means it is not concerned with wilful badness. This is important because I think that Sandel is working in a virtue ethical moral framework. The importance of his argument not being in terms of wilful badness is that this does allow a broadly Aristotelian virtue ethics to be employed. This would mean that, as Sandel seems to require, the moral acid test is based on the promotion of virtue but leaves the way open for vice, which is not always instantiated as wilful badness. I have argued in Chapter 2 that virtue consequentialism is the best moral theory with which to defend genetic enhancement in sport. This is clearly incompatible with a virtue ethic of the kind Sandel espouses, so to avoid

[162] By this I mean the procreative coupling of one's biological parents.
[163] Sandel 2007 p. 25

begging the question against him I will argue in Sandel's own terms why his claims do not have the restrictive force he requires of them.

Mastery

As humans, it is not, I think, an unreasonable psychological, sociological or anthropological claim[164] to say that people spend, and as a species have spent, much time overcoming limitations. As humans need protection from the elements and do not possess non-artefact[165] effective methods of killing animals for food,[166] people have developed clothes, buildings and weapons. Being able to deliberate about what people are faced with in the world as they encounter it and finding a solution to issues they are unhappy about are aspects of quotidian life that add to the rich texture of human existence.[167] People are not endlessly stimulated on Smart's pleasure machine[168] but can reflect. This is not to say that all humans spend time philosophising – much of the world's population is more concerned with the source of their next meal.[169] A person's control over their existence is comforting when it is indeed control.[170] People tend to feel uncomfortable when they are not in control of how their life story is progressing, when they are not empowered. Yet, this control, which in many ways resembles Sandel's mastery,[171] is simply a part of being human. Sandel does not want people to dominate themselves through genetic enhancement because it means they do not appreciate their traits as gifts. The upshot of the failure to recognise and appreciate the giftedness of a person's life is inextricably linked, in Sandel's view, with this desire for mastery. It could of course be possible to not appreciate one's giftedness and not strive for mastery, but this is not what concerns Sandel. As I read him, Sandel is worried about what mastery says about the members of the species who express it. Given that I have equated control and mastery, I will now say more on this before drawing my conclusions on this part of Sandel's argument.

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[164] Buchanan 2011 notes on the conservative bioethicist I am herein considering: "One would think that one was in living (sic) in the eighteenth century, when serious intellectuals still believed they could formulate interesting and controversial generalizations about human behaviour or the workings of human society from the armchair." p. 9 It is hoped I do not fall into the same trap.
[165] Humans do not have useful teeth or talons for example – they have to make spears, guns etc.
[166] Although it might be possible to run animals to death. See McDougall 2009
[167] In fact, Kass below bases his conception of human dignity on exactly this – the lived human life.
[168] Smart and Williams 1998 p. 18ff
[169] In the developing world, this is due to a lack of resources, in the developed, access to too many.
[170] People do not always exert this control over their existence but the option remains open for them to do so. See my Section 4.3 for more on this.
[171] See the first excerpt in this section; genetic intervention is the mastery Sandel alludes to.

I will briefly now explore the link between control and mastery. In Section 5.2 'Therapy and Enhancement' I will outline some of Resnik's work. He suggests that 'humanness' is best understood as a cluster concept of traits and abilities, none of which are necessary or sufficient. I think this trait of mastery, or as I read it 'control', falls into that cluster; it is part of the 'human condition'. However, as discussed above in Section 3.2 'Metaphysical Wills and Nature', not everything that is natural is good for people.[172] So the fact that a trait appears to simply be a feature of humanity cannot immediately be said to have any moral import. It appears though, given the observation that humans appear to have through all of history made extensive attempts to overcome their limitations, that such control is morally neutral. It is synonymous with 'living one's life'.

Frances Kamm goes further than this suggestion. She questions what is wrong with mastery given it could be desired in its own right, or, importantly, for other goods, such as health.[173] If it is the case that other goods are what the agent is trying to reach through such an attitudinal stance, then Kamm rightly criticises Sandel's view that people would not be interested in anything beyond our own will.[174] Sandel thinks that by the desire for mastery, the exertion of one's will on the world will blind a person to everything outside one's will. As Kamm argues, this is not necessarily the case; people would in fact be focussed on these other goods. As is expected, the will is simply the means with which these goods are realised. In addition, it is unlikely that mastery alone would be aimed for, given that human life is typically made up of multiple goods such as living a morally good, healthy life for example.[175]

Sandel's fear may be that with emerging technological powers, people may get swept up in the feeling of power that comes from the effective exercise of one's will for its own sake, although on a large scale, in terms of the number of people that may succumb to this feeling of power, I do not expect vast swathes of the population to be involved. Allowing for the existence of different personality types in a diverse society means that at least some people who like the exercise of power above all else are to be expected. Usually these people turn to governance at the local or national level. Like any desire, if it starts to control the agent's life

[172] So it would be a mistake to assume simply because the majority of humans possess this trait that it is somehow morally good for them.
[173] Kamm 2009 p. 94
[174] Sandel 2004 in Kamm 2009 p. 94
[175] Kamm 2009 p. 94

to the extent that they are a harm to themselves or others, it would be legitimate to intervene. The desire, however, has not been shown by Sandel to be prevalent at this level in society. In essence, some desire for mastery is legitimate, given the reasonable predilection for the management of a person's environment, but if it becomes all encompassing it ceases to be appropriate.

However, the issue of supposed problems mastery does not rest on Kamm's analysis because the point that Sandel has not properly addressed is how this masterful attitude is morally destructive. Sandel has said that mastery threatens humility and solidarity as well as increasing responsibility. On virtue ethical lines then the action guidance is clear: 'Do not be masterful' is Sandel's cry – because of the threatened virtues. The virtue ethicist generally sees this as sufficiently useful for action guidance and does not worry more than that. He acknowledges the consequences, but the emphasis is on the internal dispositions of character. I will show in the following sections that Sandel is wrong to worry as he does about certain virtues and thus does not offer reason to preclude genetic enhancement in society.

Humility

One of society's moral characteristics threatened by genetic intervention is that of humility, which is taught by being a parent. Such an institution inculcates being open to the unexpected and unchosen.[176] This is coupled with the realisation that much about a person's characteristic skills have a source outside himself as well as helping him avoid hubris.[177] Sandel is building on the idea that humility towards a person's own gifts and responsibility for her own life would be eroded if a person allowed certain aspects of genetic engineering to take place. This humble attitude is inculcated by accepting that human life is created by chance not design, and in addition, is suggestive of an accepting attitude towards a person's children. Sandel reminds readers that children are not to be loved contingently but rather unconditionally. His claim appears to be of the form: if people do not restrain themselves in terms of mastery and creation they will fail to limit the human tendency to hubris. Sandel does not offer his own explication of hubris, but it is commonly understood to be the vice of expressing a superabundance of pride or self-confidence. It also can be the sin of taking such

[176] Sandel 2007 p. 86
[177] Sandel 2007 p. 87

a stance towards the gods. Regardless of someone's metaphysical commitments, the point Sandel makes is that hubristic people have a higher opinion of their own decision making abilities than is warranted by the facts of the situation. The result is that they try to make decisions about things that are not theirs to make. For Sandel, this is the design of children.[178] Sandel would rather people took a humble attitude to the wonders of procreation than inappropriately involve themselves in the fine details of the process. When people do this they become less open to the unbidden which has significant ramifications to which I now turn.

Sandel's idea about accepting the unbidden and thus displaying unconditional love towards one's children is important. The norms of which he speaks when referring to unconditional love are such that no matter how one's children turn out, parents should love them for who they are. It should not matter whether they are successful at school, on stage or at sports. As long as the child is healthy and perhaps even if they are not, their parents should be happy. This seems uncontroversial. Sandel's concern is, as he sees it, that hubristic parents will not act in accordance with the norms of unconditional love if they enhance their children; that parents would behave in ways that would be deemed harmful.

Notwithstanding the fact that Sandel's claim is essentially an empirical one, I will consider whether unconditional parental love is precluded by enhancing one's children. Parents that have the foresight and characteristics that drive them to design their children clearly are not averse to control. Yet this does not *entail* that they are also inflexible and unable to react to a situation that is not what they expect of their children, for example if the musical prodigy they hoped for prefers writing unsuccessful novels. Simply put, the characteristic of being controlling is not necessarily accompanied by the trait of inflexibility.

Flexibility in parents is vital because they do not know in advance what type of person their child will become. The term 'open future' in relation to children was brought to prominence by Feinberg more than three decades ago.[179] His original discussion concerned whether or not deeply religious parents had the right to withdraw their children from mainstream compulsory education before it had been completed. He recognised that the child's character will always

[178] This language and its correct interpretation appears again in Section 3.3.
[179] Feinberg 1980

be a factor in the self that develops as the child matures into adulthood. This factor increases its contribution as more of the self is formed. Good parents will develop this self as it comes into existence, by educating and guiding the child with respect to *this self* as the child becomes a self determining adult.[180]

It is hoped that the designing parent will in fact follow this path. It is not practical or appropriate to ask parents to abstain from involving themselves in their children's lives entirely. Clearly young children cannot care for themselves and parents who did take this approach would justifiably be accused of neglect. Parents inevitably have a conception of the good life and will want their offspring to experience this. However, if they do not educate their children about the many ways of living, they have failed to act appropriately towards their children because they will not have given them the opportunity for an open future. They will have narrowed the child's view of the world without her knowing and thus theoretically depriving the child of something she may in fact find extremely valuable.

From the point of view of the child, would life be more difficult knowing they had been designed? There is the possibility that they would feel beholden to their parents to try to achieve whatever they designed them to excel at. They may feel a subtle or otherwise pressure due to the knowledge that their parents wanted a very particular life for them.[181] This is akin to those parents who are particularly controlling without genetic intervention. The type of parent who does not keep multifarious options open to their children is likely to ensure their children have narrowly limited aspirations. If they act in such a way that their child has no choice but to be exactly one sort of adult, their actions are clearly negative.[182] While this says a great deal that is negative about the parents in this situation, the child must also be considered. A child is likely to feel unsupported and stifled if his parents act in this way. On the other hand, if his parents did have a hand in his design and he knows about it, but they are not overtly controlling, he does not seem to have lost anything (other arguments about the supposed harms of genetic modification notwithstanding) valuable. He may have certain predispositions towards certain talents, but one, these would still need to be perfected

[180] Feinberg 2007 p. 122
[181] Parents who just thought 'We may as well.' do not come into Sandel's analysis. I imagine he would think that they were failing to exhibit prudence or succeeded in exhibiting the vice of thoughtlessness.
[182] Murray 2009 p. 507 Even a limited number of options for the type of adult they can become would be negative.

and two, if he is being raised in a way that is in his best interests, his parents will offer guidance and support but not be overbearing. He will not feel as if he has limited options in his future. However, this latter scenario is not what concerns Sandel; he worries about overly masterful parents.

There are two solutions to the problem of mastery as posited by Sandel. First, parents would act better, that is, in the interests of their child, by avoiding this sort of controlling behaviour in the first place regardless of whether or not it includes enhancement. Second, they could choose certain traits for their child but ensure that the child does not know this information about themselves until an appropriate time. This is not unusual – consider the information often withheld from adopted children[183]. It is likely they may guess their parents' intentions but as long as they were exposed to many activities, they may happen to enjoy the ones they are better at – this is in fact the situation for unenhanced children.

The crux of this issue is whether there is an increased probability of *designing* parents being overbearing and therefore bad parents. This answer rests a great deal on culturally based parenting styles.[184] The stereotypical pushy parent in the Anglo-American mould is such that a child must do as much as possible in terms of academic, sporting, musical, dramatic and so on activities to enable them to succeed. Pressure starts at an early age and continues until the child has graduated from a 'good' university and has gained a 'good' job. This is not to say all parents in the two nations act in this way, but that this is a recognisable scenario. Parents acting along these lines may use the opportunity for design to more effectively realise these goals. However, it is not clear how they would do this as enhancing cluster traits like cognitive ability or musical aptitude is likely to be very difficult, if it is even possible. This is because the relation between gene and trait is not always one to one, which means there is unlikely to be a specific gene for a cluster trait like musical aptitude. For example: being musically gifted includes a number of traits: a sense of pitch, a sense of rhythm and being dextrous enough to play an instrument. So a genetic designer would have to find a way to

[183] Or for that matter children conceived with donor gametes. Empirical studies in this area suggest that well-being is higher in children who are told sooner rather than later. Jadva et al 2009

[184] I am concerned with the Anglo-American model as that is the context in which most of the material on enhancement has been written. It is worth remembering that only possibilities can be considered, not even probabilities without empirical evidence.

affect all these phenotypes, without, of course, upsetting other phenotypic expressions that the child may need to navigate their daily lives.[185]

However, technical limitation notwithstanding, if parents were to act along these lines with no regard for the child's wishes then, genetic intervention or not, they appear to have acted badly towards their child. Thus, in order to limit enhancements that restrict a child's open future, regulations could be put in place concerning which enhancements are permissible. Yet parents may see enhancements as in fact allowing a greater freedom of choice, a more open future as it were, than children would otherwise have had. Once again it is not possible to determine whether genetic design is ethical without knowing what the enhancement is.[186] On the question of whether designing parents would be any the worse (that is less likely to show unconditional love because of their designing action): this is an unreasonable connection because, as with most events in a liberal society, it is only feasible to make proper moral judgements once these events have occurred, not in advance.[187] Sandel may claim that this is too weighty a requirement. Although his claims are couched in phraseologies suggestive of *necessary* connections between designing and failing to unconditionally love a child, he may say that educated predictions can be made. In this way, things that people have not done but are thinking of doing can be considered for how they might turn out. I agree with this; to do otherwise would be to require the limitation of almost all action. However, in this watered down version of his argument, the way is now open to suggest that there is not this negative entailment but the possibility that designing parents may act appropriately.[188] All of this suggests that there is no way it can be known whether parents will show unconditional love until their behaviour towards their children is seen. Counter to Sandel's view, can it not be argued that non-designing parents do not care enough to so involve themselves?

This is not a morally important impasse relying on unquantifiable factors relating to character judgements about parents. This is because it appears that without knowing the exact genetic

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[185] Below in Section 4.3 I argue that genetic enhancement in sport would still require a great deal of training of an agent to reach the top echelons. The same would be true in the musical world – genetic enhancement would change a person's predispositions, not be magically transformative.

[186] This is discussed further in Section 3.1 that is the goods which allow the better realisation of life projects.

[187] This is an example of Buchanan's concern about vast negative generalisations without empirical evidence. Buchanan 2011 p. 8-10. This is not to say that a thought experiment involving a variety of possible worlds could not be invoked, but it is important to avoid extensive generalisations in advance of the evidence.

[188] Buchanan 2011 p. 74 wonders whether the critics of enhancement who hold such negative views of human character should in fact support genetic methods of improving this aspect of humanity.

enhancements involved, it is not possible to know whether their use would bring positive or negative consequences on the child. It *is* the case that parents who *are* extremely controlling are going to limit their child's futures which is a harm for the latter. In the absence of one, knowledge of which enhancements are being undertaken and two, the actual characters of the parents doing the enhancing, it is premature to make the claim that parents are acting badly. Given these requirements, Sandel has not shown that there would be a loss of humility as he articulates it. His assumption is overly pessimistic and unreasonable, given the available information. A loss of humility, for Sandel, as bound up as it is with these supposed negative characters is of course a risk, but no more so with genetic technology than without it. The insufficiently humble attitude towards procreation and child rearing are that way *prior* to access to genetic modification technology.

Responsibility, Freedom and Chance

Having dealt with the first of Sandel's claims about the engagement with genetic modification resulting in a society that slips into moral turpitude, I will now consider another of Sandel's societal concerns. He envisages an extremely sharp increase in responsibility:

> Parents become responsible for choosing, or failing to choose, the right traits for their children...The more we become masters of our genetic endowments, the greater the burden we bear for the talents we have and the way we perform.[189]

If it is the case that genetic modification of future generations is accessible to all[190] then parents would face a reduction in freedom in terms of the child they bring into the world. That is, assuming any genetic manipulation was possible, a reduction in freedom would come about because parents are likely to feel driven towards certain conceptions of the good. This may even be a subconscious drive sourced in their societal leanings. The question is whether this is worse than the life they would help their children build without genetic intervention. Parents also realise that their children may come to resent them for failing to choose certain characteristics that might confer an advantage or allow them to take a place in society that they subsequently desire. Sandel is not only concerned with positive selections of traits but also with choosing against negative ones. Regardless of how it might be effected, through

[189] Sandel 2007 p. 87

[190] Sandel 2007 p. 16 Sandel is not concerned with issues of distributive justice, rather he see that the ills of enhancement are bound up with other social effects that are dealt with throughout this section.

termination of pregnancy or selecting one embryo rather than another, parents face a novel set of decisions that did not burden previous generations of parents.[191]

Whether enhancing or not, it is hoped that parents will act along lines of procreative beneficence in that they do what they can for their future children: "couples (or single reproducers) should select the child, of the possible children they could have, who is expected to have the best life, or at least as good a life as the others, based on the relevant, available information".[192] Although Julian Savulescu was thinking in part here about being able to detect disease traits in future children, he extended his idea for non-disease traits, that is, enhancements. Harris urges that it is in fact a person's duty to enhance;[193] yet to what extent must this duty be fulfilled? The conception of procreative beneficence has not been met with universal approbation despite its *prima facie* intuitive appeal. It has been criticised on both theoretical[194] and practical[195] grounds, all of which interestingly extend the debate about what parents owe their children. The criticisms suggest that either the principle is correct, or at worst the principle points in the right direction even if its optimising nature is too demanding. Being too demanding does not mean a watered down principle exhorting parents to act well towards their children would not be appropriate. Justification for this much is clear: parents who do not attempt to act beneficently towards their children in *any* way are typically deemed to be bad, neglectful parents.

This discussion of responsibility under the broader banner of moral turpitude shows Sandel's concern. How would parents decide which enhancements to undertake? Given the necessity to have one's health in order to pursue one's projects, making sure their child had a stronger immune system would certainly be in line with this, but at what stage should the parent stop? The answer is not going to be exact; it would differ for each parent and relate to the particular worldview held. The burden of responsibility a parent may feel towards their children *is* going to be difficult in terms of any positive traits they did not choose for them.

In terms of sport, parents may end up having children who particularly enjoy a sport, but by their late teens are struggling to excel because their physiology is holding them back. These

[191] Sandel 2007 pp. 88-89
[192] Savulescu 2007 p. 435
[193] Harris 2007, Harris 2009
[194] Herissone-Kelly 2006, Stroller 2008 and Bennett 2009
[195] de Melo-Martin 2004, Birch 2005, Herissone-Kelly 2006 and Parker 2007

teenagers have achieved much with what they were born with, and importantly are very driven, yet they simply cannot compete at the top level. If their parents could have made changes to their physiology, but chose not to do so, then there may be some resentment. Of course, the parents could not know in advance that their children would like a particular sport. This points to the argument for allowing genetic modification once an athlete has stopped growing. There is then less of a concern about parents not having made certain choices when their child was not yet born. However, I consider the notion of justifying parental choices below in Section 3.3.

The increase in responsibility that Sandel foresees rests a great deal on access to such technology. If it is the case that there are no limits of access then a child *can* reasonably ask why certain decisions about their traits were made and a parent will have to justify their choice. In a world without full access to enhancement technology, in the way that a child may ask and be told that they cannot have riding lessons because of a lack of resources, the same would hold for why they were not given enhanced agility for example. In both worlds there may be resentment on the part of the child, but part of being a parent is teaching children the valuable lesson that they cannot have everything they wish for. Assuming enhancements are good for the person being enhanced, the child will always benefit if they are lucky enough to receive them.

Parents will always have difficult decisions to make in the upbringing of their child but this does not mean the enhancement project should not exist. Part of being a moral agent is just that: making difficult choices. There might be increased anxiety for those parents who do not deal well with the responsibility. This, however, could be seen as a short term consequence. In the long term, the careful exercise of responsibility may make the parents happier because, as set out above in Chapter 1, the consequentialist agent can choose to act in a certain way if they think that will help them achieve more good consequences. I have said that the increase in responsibility is at worst the same as the more usual and anodyne parental decisions, and at best the opportunity to enlarge the moral scope of such a character trait. This is realised by increasing the number of opportunities to exercise that trait. This is something that Sandel, a seeming virtue ethicist, should endorse.

Sandel approaches the issue from the child's perspective. He claims that, if it is the case that parents have tried to have a genetic hand in a child's existence, they have reduced the child's

freedom. Although it is not Sandel's claim it is relevant at this point to mention that even if parents were involved in the design of their children at the genetic level; this would only result in increased tendencies towards traits because the environment plays a large part in the effective expression at the phenotypic level of genetic information. The point is that only the genetic determinist holds that *everything* about people and their future lives is determined by their genetic inheritance. This view does not hold up when, for example, identical twins are separated at birth and brought up separately, or, for that matter, identical twins living in the same household not having identical characters. This is what would be expected if genetic determinism was correct.

The claim of a reduction in freedom may initially seem as if this is an appeal about a loss of autonomy:

> ...the problem with genetic engineering is that "designer children" are not fully free; even favourable genetic enhancements (for musical talent, say, or athletic prowess) would point children toward particular life choices, impairing their autonomy and violating their right to choose their life plan for themselves.[196]

However, as Sandel points out this would not mean that children who did not have parents who designed them could in fact have designed themselves. The option for a child to design himself in advance of joining the world is clearly nonsensical, so what is at issue is the comparison between the enhanced child and the child who is a product of the genetic lottery.[197]

Sandel's comments on freedom as autonomy over one's genetic make up are brief and there are other conceptions that I will now consider. Autonomy understood on Millian lines (as interpreted by Jennings) is such that the agent is assumed to be the best person to determine what is best for them. If this decision is taken from the agent by the state or anyone else, they have lost both liberty (which can be understood as autonomy) and human flourishing because development of personal characteristics is hindered[198]. Mill rarely used the term 'autonomy' hence Jennings' explanation: Jennings distinguishes two main senses of autonomy; that which has *liberty* as its emphasis and that which emphasises *reason*. The latter is Kantian and

[196] Sandel 2007 p. 7
[197] Sandel 2007 p. 7
[198] Jennings 2009 p. 83

is gained through the use of reason to act in accordance with the moral law[199]. As this second conception of autonomy is directly linked to a non-consequentialist moral theory, notably Kantian deontology, I propose that the former conception based on liberty is more appropriate in this work. Enhancements which restricted such flourishing would be unethical inasmuch as they were determined to bring about worse consequences than those which would allow flourishing.

However, though useful to the proponents of autonomy, this does not appear to be the conception Sandel is exploring. Rather, it is that he, in consideration of Habermas' writing[200] considers freedom to be an experiential state that is only worth having if it is with "reference to something, which, by its very nature, is not at our disposal".[201] He clarifies this source of reference as being God or nature. Such sources are distinguished from biological parents. If a child has been designed then they are "beholden and subordinate to another person, the designing parent, in a way that a child born of a contingent, impersonal beginning is not."[202] Hence, both the designer and designed are harmed. The former because they are taking the norms of unconditional love out of parenting[203] and the latter because in a negative sense they do not possess the same relationship with their parents as those children who were not designed.

This second point, because, Sandel based his argument on Habermas' work, will be explored when I consider the latter author's writing on this subject in Section 3.3. As I interpret him, Sandel remains concerned about the removal of contingency. There is, for Sandel, a reduction in freedom if one is born not through the vagaries of chance, but by parental design. Genetic engineering is very much in its infancy with respect to the sorts of enhancements that may have an extensive impact on a person's life. Currently, people may be able to detect certain sequences that will result in debilitating disease, but for the most part the only solution is to terminate the pregnancy.[204] Hence, it is quite an understatement to point out that scientists are still some way from actually designing a person's entire genome easily and cost-effectively.

[199] Jennings 2009 p. 83
[200] Habermas 2003 See the Section 3.3.
[201] Sandel 2007 p. 81
[202] Sandel 2007 p. 82
[203] Sandel 2007 pp. 82-83
[204] Reported in Rollin 2006 p. 176

Putting recognition of this to one side, as this thesis is a defence of techniques not yet in existence; there are different understandings of what is meant by 'design'.

This is because it is not clear the extent that any parental involvement in how a child turns out (beyond procreation) constitutes design. After procreating, a pregnant woman stops smoking, drinks less alcohol and starts to eat very healthily. These choices will all have an impact on the embryo growing within her and therefore have an impact on the future child. Few would claim that this is fact design, despite the fact that this woman is not just 'seeing how things go' and letting the resultant child be a product of chance and her bad habits. Clearly, these decisions are active, so in that way they are identical to genetic modification.

Sandel may mean that once a couple have a child there is, currently, no way of knowing how the parental genomes will be combined. That a certain child is born is the result of this chanced mixing. Yet, if a step is taken back in the chain of events that led to this new life, it is not clear to what extent chance is involved in the two people meeting in the first place and then deciding to have a child together. For what reasons did the couple fall in love, if they did, and decide to have a child together?

For whatever reason the two *did* meet and *did* decide to have a child together. The determinist response would be that in fact the pair's meeting was not at all down to chance. This is not the place to enter the ancient and lengthy determinism/non-deterministic debate. I will assume that there is not an all-controlling metaphysical entity as this is consistent with my arguments above in Section 2.1. Thus, chance is still involved in the child being brought into existence in the sense that the genomes in the mixing pot were not deliberately selected.[205]

Perhaps my suggestion above about lifestyle changes will not satisfy Sandel as it would be expected that genetic modification would be more powerful in terms of extent of effects on offspring than abstention from smoking. Equally, though, this power could, and would, presumably be put to positive use. Moreover, in the same vein as problems with the Precautionary Principle in Section 2.2, the *status quo* must be justified, particularly if it appears that changes with modification would be better.

[205] It could be argued that this chance is different because it is designing *that* I exist rather than *how* I might exist. The 'might' is important because a genetically designed embryo will only have predispositions for traits.

Going back to Sandel's claim: if there is an element of parental design, then he suggests that the children thus produced have a different relationship to their parents than those who were produced through chance genetic mixing. Baldly, this is of course true in terms of description – their route to life was indeed different. However, in order for Sandel's claim to be supported there needs to be a moral difference in this important relationship rather than merely a descriptive one. Children who are not designed would be unreasonable if they held the stance that one of their parents should have procreated with someone else. It is an untenable position because they would then cease to be the child they are. If their parents had in fact procreated with other people then the child in question would be a genetically distinct being.

The complaint is further lessened when other actions parents may engage in are considered. Once a child has reached a certain cognitive capacity and reasoning ability, they are able, much to their parents' chagrin, to question decisions made by them. This could be the choice of food for supper, or school, or of course anything. Such questioning is reasonable in the sense that the parents may have been able to make different decisions which would have an impact on the child's life. This could be extended back to pre-life decisions. This *prima facie* might seem nonsensical but consider a child affected by foetal alcohol syndrome because their mother drank excessive alcohol while they were *in utero.*[206] Or, a child who was born prematurely due to excessive tobacco smoking. The child has a reasonable complaint.

The issue is if this can be extended to whether or not parents took an active part in their design. Let it be assumed, here at least, that the possibility of design is within everyone's reach financially in order to negate concerns about resource availability. If a parent could rid their child of something negatively affecting their health, a harm, then it should not be controversial to expect them to have done so, assuming also it could be safely realised. Following Harris:

> There is a continuum between harms and benefits such that the reasons we have to avoid harming others or creating others who will be born in a harmed state are continuous with the reason we have for conferring benefits on others if we can. In short, to decide to withhold a benefit is in a sense to harm the individual we decline to benefit. We have reasons for deciding to

[206] I am not going to enter the debate as to whether such a child, who in all likelihood, would be cognitively impaired, would be able to make such a judgement about their parent.

> create or confer even trivial harms, and we have reasons to confer and not withhold even small benefits.[207]

From the child's point of view, if they are in receipt of an enhancement, it can reasonably be seen as a benefit. Since the child would be benefitted by being enhanced and allowing for considerations made above concerning unconditional love, then this would point to there being normative weight behind enhancing rather than against it. So Sandel's claim remains unsupported. Chanced mixing would not necessarily be better and could often be worse than parental involvement beyond healthy living while the foetus is developing.

I have demonstrated that Sandel's claim is merely an exhortation to keep things as they are rather than considering how things may be improved. I have recognised that there would be an increase in responsibility. This would not necessarily be a bad thing as, on his own terms, virtues are all important, so surely the exercise of the virtue will strengthen the disposition in the moral agent. The appeal to loss of freedom failed when freedom was understood as either autonomy or chance. Autonomy was not reduced by design and the latter was found to be arguably better than keeping no parental involvement as the norm. All this has shown that Sandel's second route to societal moral turpitude is not in fact a concern, so I will now explore whether the third, threats to solidarity, prove sufficient to not allow genetic modification in society.

Solidarity

The second of Sandel's claims about societal moral turpitude fell short of doing the necessary work to rule out genetic modification. I will now turn to the third part of his argument. The final supposed negative consequence for society that Sandel thinks would be attenuated is that of solidarity with one's fellow members of society. That is, if people are properly aware of the contingent circumstances that made them who they are, the more likely they are to act in collaboration with other people who came into being in the same way.[208] He develops this idea thus:

> The natural talents that enable the successful to flourish are not their own doing but, rather, their good fortune – a result of the genetic lottery. If our genetic endowments are gifts, rather than achievements for which we can

[207] Harris 2009 p. 131
[208] Sandel 2007 p. 89

> claim credit, it is a mistake and a conceit to assume that we are entitled to the full measure of the bounty they reap in a market economy. We therefore have an obligation to share this bounty with those who, through no fault of their own, lack comparable gifts.[209]

Here, Sandel shows the link between solidarity and giftedness. Whatever it is that people achieve in the world, they should not forget that it was contingent on something outside their control. This contingency should continue to drive people towards beneficent behaviour towards others because they might not have been so lucky. Sandel claims this beneficent behaviour would be lost if they did not share the same type of path into existence, that is to say, they have been simply born without any design.

Currently in the world, there are many social inequalities. Maybe Sandel sees genetic intervention as something that will exacerbate already shaky feelings of solidarity. It would not be prudent for the harmony of global society to make the situation worse. An initial problem for Sandel's claim is that he is not concerned about access to genetic enhancement technologies:

> ...the worry about access begs the question of the moral status of enhancement itself. Is the scenario troubling because the unenhanced poor are denied the benefits of bioengineering, or because the enhanced affluent are somehow dehumanized?...The fundamental question is not how to assure equal access to enhancement but whether we should aspire to it.[210]

In Section 3 'Technology-based Objections' I have already discussed whether or not enhancement is morally wrong in itself, so here I will explore whether or not solidarity is threatened as Sandel envisages. Sandel is partially right in that people's talents are usually not of their making.[211] His moral concern is about a slow reduction to the extent that the better off help the not so lucky. The example he uses to illustrate the importance of a feeling of solidarity is the social institution of insurance:

> Since people do not know whether or when various ills will befall them, they pool their risk by buying health insurance and life insurance. As life plays itself out, the healthy wind up subsidizing the unhealthy, and those who live to a ripe old age wind up subsidizing the families of those who die before their time. The result is mutuality by inadvertence. Even without a

[209] Sandel 2007 p. 91
[210] Sandel 2007 pp. 15-16
[211] Sandel does not elaborate on what he means by talents. Presumably he means the result of extended practice of skills people happen to be predisposed to possess through the genetic lottery.

> sense of mutual obligation, people pool their risks and resources, and share one another's fate.[212]

Sandel's point is that if people know whether or not they will in fact need insurance in the future, will determine whether or not they enter such a scheme. This would cause those already unlucky, those with a 'sickly constitution', for example, to face further harms because they are not being supported by the better off in their society.

In terms of the societal problem he envisages, it is the more general feeling of solidarity with fellow humans that may be undermined by enhancement, not just the insurance system.[213] There are vast gaps in health, education and socio-economic status. Do those who through being born both at the right place and time to the right parents, the winners of the social lottery, actually think they should not make the most of their good luck, assuming they even think about it at all? This does not mean they will necessarily only act according to their own interests – they may in fact do their best to help humanity. It is not clear on Sandel's claims why people should not make the most of what they have. Society is of course more cohesive if people look past their own lives, but in the case that this is insufficient, many societies have institutions in place to help those who can or will not help themselves. If is assumed that society will continue to inculcate values such as looking after the disadvantaged, there is no reason that Sandel's pessimistic vision of enhanced agents will necessarily come to pass. Society will continue to raise children as it sees fit. The enhanced in a future society would be in the same position as those already better off in society as it is today.[214] There is no reason to suggest that they will be more prone than the unenhanced to ignoring the plight of others, regardless of where their talents have come from; everyone has to add effort to whatever they are born with. In fact, if they had certain psychological enhancements they may in fact consider the plight of others to a greater extent.[215] Sandel has not shown that solidarity will be lessened because his characterisation of the use of talents has assumed that, without argument, enhanced agents will act badly.

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[212] Sandel 2007 pp. 89-90
[213] Sandel 2007 pp. 90-91
[214] The social ramifications of genetic enhancement including the idea of social stratification due to those who have enhancements and those who do not has been discussed at length. See, for example Agar 2010.
[215] If it were possible to increase the empathetic response in conjunction with the practical application of skills to act on this for example.

Rather than thinking that those at the bottom end of the socio-economic scale as deserving some form of compensation for their disadvantage, Sandel worries these people will simply be seen as needing to be fixed. The meritocracy of the world will be harsher in its view of those who have not succeeded.[216] Sandel himself worries that such social degradation would be a slow process. Given that technology takes a great deal of time to permeate society, surely a more appropriate view would be that society will not suddenly change in its attitude to helping the most disadvantaged. To date medical innovations seem to have been employed in ways that tend toward helping those in need. The proximity of genetic and medical technology leads me to suggest that the same would be true with the former. The advantaged would use it to help the worst off – not in the form of eugenic cleanses as Sandel histrionically portrays – but by relieving pain or improving health. It is not clear why Sandel consistently takes such a pessimistic view of humanity. Solidarity, such as exists currently is not threatened by this novel technology; rather it is simply a virtue that is ignored by much of the world's population. However, I do not couch the virtue in terms of all having contingent beginnings, but rather in terms of a shared planet.

The subject of this thesis, namely, genetic enhancement in sport is worth mentioning at this point. Sport is a social practice and in many ways resembles the social institutions with which Sandel is concerned. Of course, sport does not specifically act to help the disadvantaged, but the practice often does act as a focal point for communities on a number of scales. This could be another aspect of solidarity that Sandel may see threatened; that sports would break down with the advent of genetic enhancement and these social foci would be lost. I will at length argue in Chapter 4 that the practice of sport will not be worse off and in fact may improve.

Concluding Remarks

This section has dealt with the first societal objection to genetic enhancement – the risk of moral turpitude as espoused by Sandel. I showed that the way parents behaved towards children with respect to keeping their futures open was far more important than any methods they might employ. I suggested that in fact enhanced children may have *a more* open future with greater options for life plans. Next, I argued within the moral framework that Sandel appears to occupy that responsibility though increasing would in fact benefit moral agents put

[216] Sandel 2007 p. 92

in this novel position. Leaving aside some concerns about the relationships between parent and child that differ from unconditional love of the former to the latter, again I pointed to the fact that it was good parenting that was of paramount importance. Children who are designed remain free assuming there are certain regulations in place concerning which enhancements are utilised. Parental involvement in *future* offspring beyond a healthy biological mother may in fact become a new set of duties if the tools are available to make the future's life 'better'. Finally I showed Sandel's claim about the failure of social solidarity was overly pessimistic and could quite easily be shown to have different results given the way technology enters society.

I have purposely argued as far as possible in Sandel's own terms rather than putting his arguments under my virtue consequentialist lens. This was because Sandel is not a consequentialist so it stands to reason that his arguments would not stand up to a consequentialist analysis. Rather, I have shown that the virtues he esteems would not be harmed. As it happens this fits partially within my framework because the bad consequences Sandel envisages have not been sufficiently shown to be expected, they do not point back to some defective moral fibre, that is lack of virtue, in the agents who make up society. I will now turn to another approach, based on ideas about human dignity that constitutes a society-based objection to genetic enhancement.

3.2 Human Dignity

The second problem opponents of genetic enhancement see threatening society is based on 'human dignity'. This argument is offered by Kass and Fukuyama. The general form of their claim is that the use of genetic interventions encroaches on something about being human that, if lost, the species will suffer greatly. I will present Kass and Fukuyama's basic positions before developing the former's to see if there is any weight behind this claim about society.

Kass opposes the use of genetic technology because despite the supposed moral neutrality of science,[217] the use of genetic engineering will change a great deal in society including norms, institutions, beliefs, practices and importantly how people see themselves. Thus it is the fear

[217] Compare Rollin 2006 pp. 11-30

of these changes and their relation to human dignity and humanity that is of concern.[218] Kass' focus is not the methods of genetic manipulation in themselves, but:

> ...the erosion, perhaps the final erosion, of the idea of man as noble, dignified, precious or godlike, and its replacement with a view of man, no less of nature as mere raw material for manipulation and homogenization[219]

Moreover, although there may be benefits to be found in some forms of genetic manipulation, people must think of it using the ancient notion of tragedy. While there will certainly be positive aspects to these novel technologies, because of the perfectionist motivations of its users, the negative aspects for humanity are unavoidable.[220]

Both Kass and Fukuyma appear to see the intuitive appeal of genetic technology; that it may start out with laudatory intentions, in the management of pain and suffering, yet the concern is that it is likely to end with the human race being unable to recognise itself in terms of how it once was. I will now lay out Fukuyama's version human dignity and then consider the issues that they raise together. According to Fukuyama, if limitless genetic manipulation is permitted, people will not...

> ...protect the full range of our complex, evolved natures against attempts at self-modification. We do not want to disrupt either the unity or the continuity of human nature, and thereby the human rights that are based on it[221]

He suggests that there is some sort of "Factor X" that makes people special as humans and it is this that is threatened. Factor X is "some essential human quality underneath that is worthy of a certain minimal level of respect"[222], which distinguishes *homo sapiens* from animals, despite our evolutionary heritage. This difference

> ...cannot be reduced to the possession of moral choice, or reason, or language, or sociability, or sentience, or emotions or consciousness, or any other quality that has been put forth as a ground for human dignity. It is all of these qualities coming together in a human whole that make up Factor X. Every member of the human species possesses a genetic endowment that

[218] Kass 2004 p. 129
[219] Kass 2004 p. 138
[220] Kass 2004 p. 134 His emphasis.
[221] Fukuyama 2003 p. 172
[222] Fukuyama 2003 p.149

> allows him or her to become a whole human being, an endowment that distinguishes a human in essence from other types of creatures.[223]

Fukuyama fears that such technology will make people less complex because of utilitarian aims. Rather than promote the multifarious ends in life that people typically pursue in using this new technology, such ends will be narrowed and will focus on, for example, autonomy, pain or pleasure. This is to say that people will focus on specific ends – curing disease, or controlling children at the expense of unknowable aspects of humanity such as genius. Simply put, diversity will be lost. People will therefore end up losing aspects of their characters that do not align with a narrow view of human life.[224]

Initial Issues

If Kass and Fukuyama are correct, then by undergoing genetic interventions something vitally important to being human is being threatened.[225] In bioethical discourse this approach would typically be described as an appeal to human dignity. Their analyses immediately show how difficult it is to provide a definition of human dignity. However, accepting this difficulty, does genetic enhancement somehow encroach on human dignity?

The reason bioethics often involves the use of the concept of human dignity is because it regularly explores dramatic changes to humans. Birth, death, disease, enhancement, destruction, how people see and treat themselves have all been explored using the concept and whole volumes have been devoted to the subject.[226] It has been noted that the concept is used a great deal in philosophical discourse[227] and in law[228] and in relation to enhancement.[229] Some authors favour a cluster of traits approach,[230] whilst others such as Kass and Fukuyama above suggest that there is something more to human dignity than checking off a list of capacities.

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[223] Fukuyama 2003 p. 171
[224] Fukuyama 2003 p. 172
[225] Human dignity, although an ethereal concept is probably easier to approach than 'human essence' for example, though they appear to amount to the same thing.
[226] See, for example: PCB 2008.
[227] Schulman 2008
[228] Beyleveld and Brownsword 2004
[229] Rubin 2007, Bostrom 2008a
[230] Explored by Nussbaum 2008

The list of capacities approach will inevitably run into difficulties, because, if it is claimed that human dignity is based on the traits $x_1, x_2, x_3, \ldots, x_n$ how are cases dealt with when humans, do not possess $x_1, \ldots, x_n$?[231] In this respect, Kass and Fukuyama have dispensed with one problematic aspect of defining human dignity. Their approach is one of emergence, the idea that the whole is greater than the sum of its parts.[232] They urge people not to try to define themselves in narrow terms[233] meaning that the concept needs some sort of expansion which I will consider in the following paragraphs.

Lived lives

If it is accepted that the reason human dignity is so difficult to explicate might be because of some ineffable fact about being human, is there still a workable concept? Kass and Fukuyama apparently think so in their resounding call to avoid the use of genetic intervention technology. In another work, specifically on the concept of human dignity, but not its relationship to human enhancement, Kass tries to describe this confluence of traits that is the human being:

> The dignity of being human depends not only for its *existence* on the presence and worth of human vitality; our dignity's full realization in admirable human activity depends for its *active pursuit* and *attainment*...on human *aspiration*, which although directed toward the high, is driven by sources in animate vitality itself. Everything humanly high gets its energizing aspiration from what is humanly low. Necessity is not only the mother of invention; it is also the mother of excellence, love, and the ties that bind and enrich human life. Human life is lived always with and against necessity, struggling to meet and elevate it, not to eliminate it...the downward pull of bodily necessity and fate makes possible the dignified journey of a truly human life. It is a life that will use our awareness of need, limitation, and mortality to craft a way of being that has engagement, depth, beauty, virtue, and meaning – not despite our embodiment but *because* of it.[234]

This excerpt shows Kass' claim that human dignity is grounded in a 'lived life'. A lived life is one that recognises humanity's limitations and its mortality. Moreover, despite these limitations, in living their lives, people regularly take themselves above the mere requirements of their embodiments. First, bodily needs are delineated. These would include

[231] Moreover, there are often issues about actually showing a moral difference to animals.
[232] Fukuyama 2004 p. 170 notes this explicitly.
[233] For example, by using terminology from normative discourse.
[234] Kass 2008 p. 326 His emphasis.

finding sustenance and shelter and so on. At a minimum, a human takes care of these requirements much in the same way an animal would. Next, there is the range of actions that humans typically involve themselves in: planning, contemplating, discussing and so on.[235] I will add to these human activities the normative life necessarily found in societies.[236] By this I mean humans operate within normative frameworks that allow and promote societal living. And finally, there are supererogatory actions. These are actions that are more than typically expected of a moral agent. Kass explains:

> Courage, moderation, generosity, righteousness, and the other human virtues are not solely confined to the few. Many of us strive for them, with partial success, and still more of us do ourselves honor when we recognize and admire those people nobler and finer than ourselves. We frequently give our wayward neighbors the benefit of the doubt, and we strongly believe in the possibility of a second chance. No one ever knows for sure when a person hitherto seemingly weak of character, will rise to the occasion, actualizing an ever-present potential for worthy conduct.[237]

If attention is paid to quotidian life, Kass says, what makes humans special will become apparent – the full range of human possibilities above and beyond a person's basic needs and drives will be seen. This then is how he grounds human dignity. Kass' efforts to describe exactly what about human life is important are interesting yet ultimately do not do the work he requires of it.

Kass is trying to show the awe inspiring wonder of being human. Being human means that rather than simply surviving, there is scope for so much more. At first sight, it is not at all clear how this claim would mean that it would be inappropriate to use genetic enhancements. Proponents of the technology might suggest that there is scope for enlarging certain human capacities such as empathy and so on.[238] The result of undergoing this sort of enhancement would point to an even more inspirational expression of the dignity of the species than before.

Yet, this is precisely the problem an adherent to human dignity might retort. It is absolutely imperative for humanity to be taken to have absolute value. If this does not pertain then there may be some people who indulge in atrocious acts involving the taking of some people to be

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[235] These are some of Kass' suggestions 2007 p. 314
[236] Clearly this is also a feature of some animal groups too, even if it is not articulated.
[237] Kass 2008 p. 314
[238] Douglas 2008 shows how some moral enhancements would be permissible and Hanson 2009 talks about being more truthful.

better than others, which as the related worry that some people will be taken to be less important than others and less worthy of moral consideration. Adherents of this view could point to the numerous large-scale horrors that have taken place in recent times and argue that the extreme wrongdoing in these acts was the failure to treat other human beings as having absolute moral worth. They might add that if enhancement is taken to be a good idea then people have committed themselves to thinking they are not of absolute value, because, in fact, they could be better. The result for this is that simply the idea of enhancement attenuates the morally vital attitude of interpersonal absolute respect.

I hold that there are flaws in this line of reasoning. It is unlikely that anyone would claim that education was contrary to human dignity.[239] Yet, clearly, an education enhances a person throughout their lives as it one, changes the number neuronal pathways when maturing, two allows the safer navigation of life and three, promotes the realisation of life plans. It is better to be educated than not. There are numerous other ways people enhance themselves all the time – they are actively trying to make themselves better. Certainly, genetic enhancement is more extreme than drinking a caffeinated drink to stay alert for longer. Also, it will probably be more effective. In many areas of life, actively bettering oneself is applauded – the adult who was an idle teenager finally engages with basic numeracy at evening classes or the slothful recluse who joins a running club and spends time with other members.

The person who has a preference for one way of living over another does not necessarily denigrate that other way of living. To change herself is not to say she is not still of absolute value. It is to recognise that humans have the possibility of reflecting on themselves and their embodiment and changing both or either as they see fit. This is to celebrate being human, not to denigrate it. Along the lines Kass and Fukuyama argue, or general claims about human dignity, to make oneself 'better' is not to say that humans are not of absolute value. If this were the case human dignitarians would in fact be claiming the very thing they abhor: that some humans are less worthy of moral consideration because of some sort of difference. Enhancements might change a person in a particular way, but to hold that they are now different and that they are no longer worthy of human dignity is to fall into the same trap with which the human dignitarians are concerned. Just as education changes a person for the

[239] Foster 2011 p.152 argues that education only respects human dignity where it does in fact allow one to more oneself and therefore promotes human thriving.

'better' he still remains a person and therefore has absolute value; he is still to be treated in such a way that recognises his human dignity. The onus is on the 'respecter' of dignity, not the respected. Someone who thought that the enhanced person was no longer deserving of respect due to their human dignity would need to point to something that would take the enhanced out of the class of beings who possess human dignity. Given that enhancements do not appear to do this,[240] the 'non-respecter' of dignity is simply failing to regard the enhanced person appropriately.[241]

Concluding Remarks

As initially conceived, human dignity was shown to be a celebration of the wonders of being human. The possibilities for extensive modes of behaviour beyond mere survival are something to protect. I argued that enhancement would serve to increase, not limit this conception of human dignity. Probing the concept further, adherents when pushed may claim that in fact it is the notion of each person's absolute value that must be protected. The worry is that by deciding to enhance, people are necessarily saying they could be better and therefore are not of absolute value. I showed that this conflates ideas about being better. People act to enhance themselves in uncontroversial ways every day of their lives. This enhancement makes them better in any number of ways but it does not change the fact of their equal moral considerability, their absolute value. To claim otherwise would be the claim that human dignitarians want to avoid; that differences between people do in fact alter moral considerability and worth. As changing oneself through education or enhancement does not change whether or not someone is a person, there is no reason to believe that a person's human dignity has been affronted. Agents have every reason to recognise the enhanced person as a being whose human dignity is to be respected. All this points to the fact that enhancement does not threaten the second societal concern. I will now move to explore whether the posited changes between generations within a society would in fact preclude genetic enhancement in that society.

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[240] As I argue throughout this thesis, enhancements are simply another way of changing oneself, they are aligned with being the 'real me'.

[241] Darwall 1977 distinguishes between 'recognition respect' where agents recognise limits on behaviour because of the personhood of another and 'appraisal respect' where agents appraise particular aspects of a person's character in a particular context. The latter sort of respect may change after enhancement, but nothing points to the former.

3.3 Intergenerational Distortion

The final society-based objection I will examine is that raised by Habermas about how the relationships between generations will be upset by parental use of genetic interventions. Habermas is concerned about how the designed person will feel:

> ...first, that genetically programmed persons might no longer regard themselves as the sole authors of their own life history; and second, that they might no longer regard themselves as unconditionally equal-born persons in relation to previous generations[242]

Such a person suffers

> ...a prenatally induced self-devaluation; to a harm to her own moral self-understanding. What is affected is a subjective qualification essential for assuming the status of a full member of a moral community[243]

Moreover, the designer:

> ...changes the initial conditions for the identity formation of another in an asymmetrical and irrevocable manner. There is no constraint of another's freedom to give shape to her own life on an interpersonal level – a level where one person could oppress another one. But as the designer makes himself the *co-author of the life of another*, he intrudes – from the interior, one could say – into the other's consciousness of her own autonomy. The programmed person, being no longer certain about the contingency of the natural roots of her life history, may feel the lack of a mental precondition for coping with the moral expectation to take, even if only in retrospect, the *sole* responsibility for her own life.[244]

That is to say a person who designs another removes the contingency from that other person's beginnings that make her feel that she is not morally responsible for her life. In addition, "we overtax the finite constitution of the human spirit by expecting that we can determine which sort of genetic inheritance will be "the best" for the lives of our children".[245]

This is a different view to Sandel's about the changed relationship between parent and child. There, Sandel was concerned about the intergenerational relationship, but in the sense of parents being open to the 'unbidden' which could only be promoted by allowing children to be born through the vagaries of chance, that, is, the genetic lottery. The emphasis in

[242] Habermas 2007 p. 79
[243] Habermas 2007 p. 80
[244] Habermas 2007 pp 81-82 His emphasis.
[245] Habermas 2007 p. 90

Habermas' writing is how the children so born are themselves likely to feel. He claims that because, unlike other children, they will have been born with the active involvement of their progenitors , they will suffer psychologically; they will not feel free. They will not feel like they are actually living their own life, rather a life that is only partially theirs. In addition, because they do not have the same generational source, they will not feel an equal part of the moral community. All this may lead the genetically designed child to not feel like they are responsible for their own life. Habermas finally claims that it is not possible for one person to know what would be good for another in terms of choice of genetic inheritance.

Freedom revisited

Above in Section 3.1 I briefly discussed how Sandel may be interpreting the notion of a child not being free if he was genetically designed in some way by his parents. I concluded there that although based some of his ideas on Habermas' work, that he was not interpreting freedom as autonomy. This, however, is the first of Habermas' claims about children who are designed. First, let me reiterate what has already been said above about contingency, design, freedom and choice. Whether designed or born through the contingencies of procreation, a child in no way has a hand in her own genetic make-up before she arrives in society.[246] This may seem trivially true, but it is important for this part of my exposition of Habermas' claims. Buchanan asks what Habermas might mean by his suggestion that a designed child cannot regard herself as free. This is because of the ambiguity of the language employed. The claim could be read as a statement about the child's psychology – it is not a capacity she possesses to think of herself as free. On the other hand it could be read as her being factually incorrect in thinking of herself as free. [247] The first interpretation is unrealistic because unless the designer of the embryo she once was made drastic to her future psychological functions then there is no reason to expect her to lack the relevant capacity for viewing herself as free. The second also has no basis: it does not matter whether the embryo one came from was designed or not, one simply came from that embryo. The important actors are her character and being in possession of capacities that make any person free. Wherever she came from, if these brute facts pertain, then she is free.[248]

[246] Once in the world, interactions with her environment can change her at the genetic level.
[247] Buchanan 2011 p. 5
[248] Buchanan 2011 pp. 5-6

Perhaps Habermas fears that the child will worry that her parents designer her in a particular way with a particular life in mind. This could cause tension between successive generations but I have already answered the problem of subtle pressures and the way they may affect a person's life earlier in 3.1. Here I shift the discussion to that of ownership of one's own life. Given my exposition of Buchanan's comments above, the case has already been made for why a child will in fact be free. They are exactly the autonomous agents they would be if they were not designed. Further strength is given to this reply when remembering that parental design is of an embryo not a person.[249] The fallacy of genetic determinism is once again apparent. Simply because a genome was specified does not mean that a particular person will result from that genome. The resulting person may have predispositions for certain things over other, but he can choose how, or if, to develop these in relation to his environment.[250] The contribution of the environment is entirely overlooked by the genetic determinist, but now this neglect has been rectified, further steps can be made. It is clear from the designed child's point of view that he is both autonomous and able to author his life in just the same way as if he were not designed. Simply because in becoming a person, there is the interaction between his genetic inheritance and the environment he is born into. He has lost nothing, especially nothing of moral import. If it is the case that the child is both autonomous and the author of his own life narrative, then he *is* morally responsible for any actions he does or does not take.

This last part is important as it would be a problem for society if children born of design did not feel as if she was a part of the moral community. She may decide to act in all sorts of negative and destructive ways while claiming that she was not morally responsible for her actions. She may say that according to Habermas, because she came from a designed embryo, not a contingent one, she lacks full membership of the moral community.[251] This takes the discussion back to human dignity. There I noted that regardless of design a person remained a person and was to be treated as having absolute value. To do otherwise would be to act in a

[249] Buchanan 2011 p. 5

[250] There is a common usage language problem here – bioethicists should talk of designing genomes and maybe embryos, but not people. If this were the case then fewer people would think that scientists are planning the exact characteristics of future beings. I will continue using the problematic phraseology as it used by my opponent.

[251] To be a full member of the moral community one must have moral worth and be fully morally responsible, that is an autonomous agent.

way that did not respect her human dignity. The same is true here: this designed person is still human, free and the author of her own life, thus she is a full member of the moral community. Habermas may retort that the concern is the child will not *feel* that this is the case. Yet how can this rest on design? If a child did not feel a part of the moral community when there are in fact free and self-authoring, this is because society has failed in some way to inculcate the child in its values, customs, norms and so on. This is importantly distinct from Habermas' claim.

Best Lives

Finally, I will address Habermas' contention about choosing 'the best' genetic inheritance for children. Again, he is right in that it is not possible to determine what precisely would be the optimum genome for a particular individual in a particular environment. Yet, traits *can* be chosen that would undoubtedly benefit a person. These would be traits that expanded the range of possible life projects and increased the likelihood of their successful completion. Examples of such traits would be a better immune system, or moderately slowed aging process and protection against cancers.[252] Similarly, this would be the case if these enhancements were also possible to achieve in non-genetic ways. Just as it is allowed, in a liberal society, for parents to bring up their children according to their vision of 'the good life' the same would follow with the above caveat for genetic enhancements, that there were not limiting in any way. Moreover, it has been noted at several points that any genetic enhancements would change a disposition; they do not create a person. Habermas is concerned about harmed people yet this can only be the case once they are actually in the word interacting with it. It is then empirical whether they are harmed and I have already argued that Habermas' posited existential harms are unfounded.

Concluding Remarks

Habermas was concerned that there would be problems between generations in a society that permits genetic enhancement. This intergenerational disruption would come from the designed child not feeling free, not feeling that she was the sole author of her life or feeling that she was a full member of the moral community. I have shown that Habermas'

[252] It is hoped that these are uncontroversial examples of ethical genetic enhancements.

characterisation is unfounded because to say she would not be free would be to make the claim that for some unknown reason, design would entail she did not possess the capacity to be feel free. As this entailment does not exist, the child is free and so an autonomous agent. She was shown to be the sole author of her life because *she* was not designed; it was the embryo she came from that was designed. If her parents acted overbearingly after her birth, the fault would rest with them and not the fact of having been designed. Having cleared these two concerns to one side, all that remained was to demonstrate feeling a full member of the moral community. Given the recognition of the part society has in the formation of all its members, if she not feel a full member, I suggested it was a failure of inculcation, not due to her having been designed. Finally I noted that positive genetic enhancements could be chosen that would undoubtedly benefit a person and that it was nonsensical to speak of the 'best' genetic inheritance given environmental factors. Habermas has thus failed to demonstrate that the third societal objection to genetic enhancement holds any normative force, thus there is no requirement to prohibit the technology. The designed child would not suffer existentially as he claimed, hence there would no intergenerational distortion which draws this section to a close.

Conclusion

This chapter has considered objections to genetic enhancement based on posited negative ramifications for society and those that constitute it. The first objection as articulated by Sandel was that society would suffer from moral turpitude if it engages in genetic modification. He offers a tripartite approach, all parts of which I showed were lacking. He predicts that the predilection for mastery amongst the species will result in a loss of humility with respect to the giftedness of human life. This will result in the loss of the norm of unconditional parental love. I showed that in fact he should be concerned about bad parents generally and that the emergence of this technology had no moral bearing on the situation. In addition Sandel failed to explain why the situation as it currently stands is the best of all possible situations for humanity to find itself in. The second part was an increase in responsibility. I accepted his claim given that if this technology exists then parents will be forced to make decisions about future offspring that they would not have had to do in the past. I suggested that when considered in Sandel's moral framework, however, this is beneficial to any agents in this position, as it allows them to express the virtue of responsible

action. The third part was the supposed loss of solidarity through no longer having contingent beginnings; the idea that people look after each other because their position in life is not their own doing. I argued that he is correct in as far as each person has an unchosen genetic inheritance, but what people do with it after that is entirely their own doing. Given the time it takes for technology to pervade a society, showed that it was not the case that society would change in its views towards the disadvantaged, and these new tools may in fact help the lower end of the socio-economic scale.

The second society-based objection was that to engage in genetic enhancement was to erode human dignity. I started by looking at the claims of Kass and Fukuyama. Their articulations suggested that human dignity was based on something more than a list of capacities. Even when the concept was grounded on human flourishing, there did not appear to be any reason to forego genetic technology as it could possibly extend the scope and range of flourishing. Another tack was considered whereby human dignity referred to the absolute value of all humans. To want to enhance was to say that one was making oneself better and therefore was not of absolute value. I showed that people engage in enhancing activities all the time and remain the same person; that they would not be considered better in the sense of moral worth that would be needed to start claims about human dignity being breached. This meant that the objection based on human dignity also failed to have any normative force.

The final objection was based on intergenerational distortion. Habermas argued that designed children would suffer a range of existential harms in the form of not feeling free, nor feeling they were the sole authors of their own lives and not feeling that they were a full member of the moral community due to a lack of autonomy. In each of these cases I showed that Habermas had incorrectly characterised the situation. To be free, one simply needs the capacity regard oneself as free, one's origin is irrelevant as it is the embryo that is designed, not the person. As this freedom means designed children are autonomous, they are the authors of their own lives. These two factors taken together meant that if designed children still do not feel part of the moral community, it was a failing on the part of their society. This is because those two factors meant that the designed are actually full members of the moral community. The third objection to genetic enhancement in society was therefore shown to have failed. Now that I have defended the use of genetic enhancement in itself and in society,

in the next chapter I will meet the final set of objections based on negative ramifications within the social practice of sport.

Chapter 4: Sports-based objections

Introduction

I have now met minor objections to genetic enhancement and dealt with posited negative ramifications society would face if such innovations became commonplace. Neither of these sets of objections presented conclusive arguments that enhancement at the genetic level should not be undertaken. I will now present objections raised by others to genetic enhancement in the social practice of sport itself. As would be expected of any social practice, there are issues specific to that particular practice that may warrant a different approach to that in society generally. These objections are all surmountable and do not produce compelling reasons for restricting genetic enhancement from sport, however they do require a sustained treatment, hence the length of this chapter. The sports-based objections will be split into four strands: 'Health, Treatment and Enhancement', 'Fairness', 'Proper Achievements', and 'Spirit of Sport'.

The first strand, 'Health, Treatment and Enhancement', will consider the charge that athletes' health will be at risk from using genetic enhancement technology. I will show that under proper supervision, this is not a concern. Additionally, the treatment-enhancement dichotomy is prevalent in work on enhancement. I will explore some arguments about its basis and conclude that, particularly in the sporting context, it does no moral work because it is unable to account for two aspects of the practice: that athletes differ to start with, and that all athletes will try to enhance their performance in some way as that is part of competing effectively.[253] If there were negative health based consequences through the use of genetic enhancements, then this could preclude their use. The treatment-enhancement debate will be shown not to ultimately illuminate the use of genetic enhancing technology in sport as it fails to pick out anything moral about the supposed distinction.

The second strand, 'Fairness', pertains to fairness of competition as opposed to fair allocation of enhancing technologies in sport. Critiquing this concept deepens the debate by showing that there are competing conceptions of fairness when applied to sports. These conceptions, apart from one notable exception, do not present sufficient reasons for precluding novel

[253] The nature of this enhancement could include the limitation of alcohol intake, a healthy diet, extensive training sessions, for example.

genetic technology. The exception is the conception based on strict adherence to the rules. As set out at present, the relevant regulations state that use of genetic enhancement is forbidden. As the purpose of this work is to show that this particular rule is unreasonable, the fact that it does give a reason to remove such enhancement from sport has no bearing on the project. This exception notwithstanding, I will show that the inclusion of genetic enhancement will in fact have positive repercussions within sport, by increasing fairness within the practice.[254]

The third strand concerns 'Proper Achievements'. This is the issue in which opponents of genetic enhancement claim that any performances made by the enhanced are in fact not their own and are therefore not meritorious. I will investigate the various ways this general claim can be understood and show that genetic enhancement does not result in an athlete's achievements being any less their own than they would be without enhancement. The athlete remains true to themselves and their chosen practice, which means that internal goods to that practice are still realisable by them.

The fourth and final strand, 'Spirit of Sport', is the idea that somehow allowing genetic enhancement would undermine the very practice of sport itself. I will analyse WADA's broad conception and narrow conceptions of this. Having dispensed with their claims I will show that rather than taking something away from the practice, such technological innovations support the spirit of sport. This resoundingly positive consequence justifies use of the technology within the practice.

These four strands of sports-based objections are important because of their direct relationship with the claims about genetic enhancement under consideration. They show that there are multifarious issues that necessitate examination because clearly the practice will change with the advent of genetically modified people. Importantly they show that there are aspects of the current sporting paradigm that many instantiations of the practice, namely different sports, would be better of changing. These will be noted in the forthcoming arguments.

[254] At first sight, my opponent may suggest that inequalities could also exist with respect to the enhancements – I meet this claim below.

4.1 Health, Treatment and Enhancement

Clearly, it is important that genetic enhancement innovations do not adversely affect the health of athletes, so I will consider this aspect first. In the literature concerning genetic enhancement in general, there has been much written about the distinction between therapy and enhancement.[255] This is the idea that a genetic intervention that simply corrects a genetically caused harm, some sort of disease for example, is morally acceptable, whereas a genetic intervention that makes a typically functioning trait better is rather more controversial and not necessarily permissible. The former could be Sanfilippo syndrome[256] and the latter could be the heightening of an archer's visual acuity. Given that the treatment-enhancement dichotomy is very much linked to the concern about the health of the athlete, I consider these together in the following sections.

Health

I will start with the objection based on genetic enhancement having a negative impact on the health of the athlete. In the medical arena, gene therapies are emerging. These aim to tackle medical problems at the genetic level. Hidde J. Haisma reports that gene therapy has had encouraging results with x-linked severe combined immunodeficiency disease, adenosine deaminase deficiency, chronic granulomatous disease and haemophilia B.[257] However, he foresees multiple problems. In the medicinal setting, all gene transfer vectors[258] have been created in a suitable environment that will include levels of testing for safety and toxicity that befit such an establishment. Although such safety is just as important for athletes, it is not likely that the same level of testing would occur. This is because sports venues are not as well-equipped as hospitals and laboratories.[259] This immediately increases the level of risk to the athlete. Additionally there are concerns about the use of medical interventions in healthy people. As such interventions are made for ill people, it is not clear what side effects would

[255] Frankford 1998, Resnik 2006 are examples
[256] Lissauer and Clayden 2007 pp. 470-472 Sanfilippo Syndrome is a neurodegenerative disorder that results in decreasing motor and intellectual function.
[257] Haisma 2011 p. 260
[258] The method of introducing the genetic material into the body.
[259] Initially I would expect genetic enhancements to take place in hospitals, which may not always be necessary if the technology is developed. The concern is that is not permitted then athletes will not be enhancing themselves in appropriate locations; this is easily solved by permitting genetic enhancement.

indicate when they are used in a different and untested demographic.[260] Given the current illegal status of genetic enhancement in sport, safe trials would be impossible to carry out. This is because for a trial to take place, both funding and ethics committee approval must be place. The former will not be in place if actions are illegal and the latter will not approve practices that are not ratified by law. This means that in order for the trial of genetic enhancements in sport to take place, the enhancement would have to be made permissible first. It may be also be very difficult to test for genetic enhancement technologies.[261] This would of course be superfluous if genetic enhancement is accepted by everyone, as my thesis hopes to persuade people to do.

The risks involved are linked to which vector; whether DNA, chemical or viral, is used in the process and the encoded transgene itself.[262] Apart from deaths due to complications and symptoms resembling influenza, these are so far minimal, although risks would sharply increase if gene manipulation were carried out in uncontrolled locations.[263] An additional concern is the transfer of whatever genetic material is being used to others and the environment. Although to date there have been no reports of this, it is far more likely if genetic manipulation is undertaken in secret, uncontrolled laboratories.[264]

Haisma's work suggests that much of the discussion about genetic enhancement in sport is necessarily putative because the techniques are simply not yet available. This means it is particularly beneficial to question WADA's decision to ban the use of genetic enhancement in sport because there may be room for regulatory movement in the time it takes for relevant techniques to be mastered. Haisma's main concern is that genetic enhancement would take place in settings and with people that the techniques were not designed for. This is a similar concern to the use of steroids as an ergogenic substance in the healthy. Genetic technology will be more complicated to apply than steroids, which can be administered with a syringe. If it remains the case that such technologies are banned, then those that do insist on using them will inevitably use them in the dangerous settings that Haisma envisages. The simple solution is not to ban the innovation as this will dramatically increase the safety of its use. Such a

[260] Haisma 2011 pp. 260 - 261
[261] Haisma 2011 p. 262 and Schneider and Rupert 2009 present practical issues, while Miah 2004 pp. 144-148 presents some ethical issues linked to testing at the genetic level.
[262] Haisma 2011 p. 261
[263] Haisma 2011 p. 261
[264] Haisma 2011 pp. 261 - 262

move would allow for regulatory oversight of the techniques used. There is nothing different to this suggestion that does not follow through to all ergogenic substances. If they are allowed, the overall health of the athlete could be tested rather than the presence of certain substances.[265] Theodore Friedmann and Eric P. Hoffman worry additionally that use in uncontrolled situations would also go against the principles that make up ethical human experimentation including: full disclosure, informed consent, and experimental subject protection[266].

Nancy M. P. King and Richard Robeson have examined these latter topics because they think that without always being aware of it, athletes are used as research subjects, for example when they are given a new design of helmet in American Football.[267] Although it has generally been the case that athletes use innovations from medicine, there has also been movement of innovation from sport to medicine.[268] Part of being an elite athlete is looking for ways to enhance one's performance. While an individual athlete can consider the offers of scientists in terms of risks and adequate information, this is not usually the case for those involved with team sports where being part of a team necessarily limits their choices because this is exactly what it is to be part of a team – to subordinate the self to the greater whole.[269] This makes the latter group particularly vulnerable because authorities linked with the team tend to be in charge of decisions affecting the team. Additionally, when there are medically trained personnel involved at the level of elite sport, it is not always clear where their loyalties directly lie. They may face conflict due to multiple responsibilities including the athlete's health; the promotion of the athlete's achievements; as well as taking care of any interests the sport; or the team itself may have.[270]

King and Robeson suggest that if information is collected about the effect of deliberate changes to training schemes whether it is in terms of an athlete or their equipment, then this in fact constitutes research. This means that if enhancements are introduced then various factors must be considered including conflicts of interest and an athlete's freedom to be

[265] Savulescu et al 2004
[266] Friedmann and Hoffman 2009 p. 252
[267] King and Robeson 2007 p. 8
[268] King and Robeson 2007 p. 3 For example the treatment of bone and joint injuries, degenerative illnesses and head trauma.
[269] King and Robeson 2007 p. 11
[270] King and Robeson 2007 p. 9

involved with the enhancement or not. The latter is very important and the consideration of enhancement's continued effect on the sport in terms of these considerations must remain in place.[271] In adult sport, it might be considered overly paternalistic to intercede in the sort of scenario just alluded to. The reason for this is clear: in many sports[272] at the top level, the best players command extraordinary wages. If extreme financial inducement is part of the fabric of many sports, surely this must be managed first so then it will be clearer whether an athlete is actually acting freely.

In terms of genetic enhancements, the concerns are magnified by the current state of technological development as noted by Haisma above. King and Robeson's practical analysis will be useful in the future, but as with many other issues surrounding genetic enhancement, the concern is at the social and institutional level and is not specifically related to the enhancement being genetic.

It has been suggested that certain sports are more likely to face the intrusion of genetic enhancement technologies than others.[273] This is the basis of Loland's 'vulnerability thesis' that predicts that those sports with a higher level of specialisation of motor skills rather than those requiring tactical and technical skills are more vulnerable to novel technological innovations being used.[274] Thus, a less vulnerable sport might be football. An example of a more vulnerable sport would be long distance running, or generally the so-called 'record sports'[275]. These are the sports practices based around competitors covering a distance in a certain manner or throwing an object or the athlete themselves in a particular fashion. Success in such sports is usually determined by proximity of distance, time and so on to the current world record or one's own personal best. As it is likely that the employment of these genetic enhancement methods will require significant technological support, Loland worries that the support systems of athletes will end up using them as a means to their ends[276] rather than the other way around. This is to say that a support system will be so positioned because of access to the highly specialist techno-medical techniques. This may result in the use of an athlete in ways that do not constitute proper treatment as a person, someone who should not

[271] King and Robeson 2007 p. 12
[272] American Football, football, basketball, baseball and tennis are prime examples.
[273] Loland 2005
[274] Loland 2005
[275] Loland 2001
[276] Loland 2005 p. 162

be used as a 'mere' means. Typically this would be as a way of generating revenue for the support system. The coercive use of any technology is certainly a moral problem, however, if Loland is correct and it is more likely they appear in sports where the individual athlete typically has more control over which training methods to adopt and so on, then it is less likely that they would find themselves forced to engage with the technology.

This last point warrants expansion because of the clear differences between the record sports and those sports more akin to games. As noted above, in team sports, the individual submits themselves to the needs of the team in order for the proper functioning of that body of people. The issue brought into sharp focus by the advent of genetic enhancement is that people on teams may feel the subtle pressures of needing to use such technology in order to remain on the team. They can forego its use but, for example, they may feel particularly connected to that specific team. Members of a team would start to feel a reduction in autonomous agency with respect to any decisions about which enhancements to use. Modern sport would appear to already present example where athletes feel they have no choice but to acquiesce to all the decisions made by those running the team.[277] The concern is that this new technology would further exacerbate the problem. The response to this depends in large part on how far into the future the situation is being considered. If enhancements were prevalent in society, then athletes are more likely to be happy to use them given the opportunity. This claim is based on the recognition that novel artefacts and behaviours can take time to permeate society. Once that has occurred, and it need not be a dramatic uptake, just enough for any initial stigma to have passed, then those that are not currently using an artefact or mode of behaviour are likely to look more favourably on them.[278] However, it is the point where enhancements are not readily available that is more difficult; I return to this concern shortly. As athletes tend to want to enhance performance where possible, they may jump at the chance to do so assuming that it was a sanctioned part of the practice. If this latter issue was not resolved, then anyone forcing athletes subtly or otherwise would be acting unethically and should be sanctioned accordingly.

[277] Consider the power structures in a football or American football team for example.
[278] Robertson 1996 and Silver 2007 p. 339 talk about the uptake of assisted reproductive technologies, for example.

Of course, an opponent may argue that if pressures were sufficiently subtle, it would be effectively impossible to find unequivocal evidence that would support such a sanction. It would be a mischaracterisation of this sort of situation to make the claim that everyone involved would find pressures equally subtle. Each agent will react differently, so it would be expected that while some would be affected by pressures without properly realising this to be the case, others would in fact be aware of the situation and remain proper agents. In fact, they may be able to address the situation so that the less aware are not driven to something that they would not do if they were in possession of all the facts of the situation. This is the reality for all areas of life so should not have any priority in this instantiation of the problem.[279]

The final aspect of health that I will consider is not about the use of genetic technology specifically, but about the fact that a great number of sports are inherently dangerous. It is accepted by those that play American Football or engage in boxing that there are attendant high risks associated with using the body as an offensive of defensive object. This source of health risk is distinct to any that may be sourced in genetic technology. This does not legitimise the latter's possible risks but does go some way to suggesting that much of the approach to risk in the sporting milieu is different to that in the non-sporting life. Accepting this difference then, means that it would not be unexpected to find athletes willing to take extra risks when using genetic enhancement technology in its infancy – precisely when it will be more dangerous and in those uncontrolled settings that Haisma noted above. Of course, this does not mean that athletes should be subjected to any risks whatsoever; it is just that as long as they are aware of them, it is not unexpected that risk-taking personalities *do* accept a higher level of risk. If this was not the case, players of dangerous sports would change to something safer, such as tiddlywinks.

In relation to use of genetic enhancements then, this means that in finding an edge, regulatory authorities must be aware that certain risks will seem unimportant to some athletes. This culture of excessive risk taking is generally a negative one because it means that athletes are closer to harm and may feel compelled to take these risks to compete effectively. The

[279] Although this is my response, Asch 1956 explored the notion of social conformity and the possibility of shifting independence by the presence of allies and confederates with respect to judgements about a particular issue.

solution is as above, to allow the use of the supervised technology assuming that its inclusion can be justified – something this thesis aims to demonstrate.

If the technology that is under scrutiny is particularly harmful to athletes, over and above any harm inherent to the sport they are involved in, then the prospects of utilising the technology are severely limited. The negative consequences associated with such specific, additional unnecessary harm do speak to a justified ban on the technology. However, the model may be more like that of steroid use. In themselves, steroids are not inherently dangerous; it is possible to gain their performance enhancing effects safely if taken in a supervised situation.[280] The problem is when they are used to excess.[281] An answer would be to allow athletes to use the new technology under supervision so that they can gain the positive benefits, including simply better health,[282] and avoid the harms.[283] Supervision could be made a mandatory feature of support systems for example, and is likely to include a medical professional. This would make the use of genetic enhancements morally acceptable in terms of health.

Treatment and Enhancement

Having explored the health-based objection to genetic enhancement in sport, I now turn to the treatment-enhancement distinction. The point made by proponents of this view is that it is in fact a normative distinction, not simply a descriptive one. It is acting in accordance with morality to undergo treatments but it is against morality if enhancements are undertaken.[284] The connection to health is such that a treatment is commonly understood to restore health, whilst an enhancement goes beyond it. An initial note on the distinction is made by Harris, who recognises that, for a person whose body is not functioning as expected for a member of the human species, to be returned to such normal functioning would be an enhancement, except in those cases where the person has better than usual functioning or the method of

[280] Todd and Todd 2009 pp. 49-53 talk about an actual experiment with steroids.
[281] Perhaps genetic enhancement, by increasing the general health of athletes will prevent overtraining syndrome from setting in and hindering an athlete's career.
[282] For example with a genetically enhanced immune system.
[283] Holm 2010 suggests that even with medical supervision, the taking of performance enhancing substances would still be problematic, for example, commercial interests are likely to count against proper testing being conducted for legal performance enhancing substances.
[284] Although Morgan 2009 argues that certain substances such as steroids are in line with things thought valuable to sport and in fact constitute treatment so should be permitted.

changing to normal functioning is harmful to them. This means that often, when interventions are described as therapies, they are in fact an enhancement from the person's state in advance of the so-called therapy.[285]

This suggests that use of the supposed therapy-enhancement distinction fails to provide a restriction on enhancements. This is because many treatments collapse into enhancements when considered in terms of the effect they are having on the individual. It is an agent relative criterion that does nothing to show a distinction that is important morally or in terms of explication.[286] It should not be forgotten that it is species-typical to be susceptible to disease. Thus a routine vaccination for any disease is in fact an enhancement to a person's usual existence.[287] If it was possible to alter a person's immune system at the genetic level to reach the same end; immunity or decreased susceptibility to disease, then they would receive the same benefits as vaccination simply via a different method, and there appears to be nothing about genetic technology that is inherently objectionable.[288]

Resnik has helpfully surveyed the problems of the therapy-enhancement distinction.[289] He took various lines of enquiry that have been used to show the supposed moral distinction between them. Although Harris' note above makes it clear that the existence of a bright line of demarcation between therapy and enhancement is not necessarily obvious, the main thing of interest is whether there is something *moral* about it, even if it is difficult to discern. Resnik considered 'The Concepts of Health and Disease', 'The Goals of Medicine', 'The Rights of the Unborn', 'Eugenics' and 'Our Humanness'.

The first two lines of enquiry presented the same issues as the therapy-enhancement distinction they were meant to illuminate. This was because of definitional difficulties. Health and disease are difficult to determine on either descriptive terms or normative terms alone because the former requires normative input as to why genetic technologies can be used to manage disease but not to enhance the already healthy. The latter is too broad because if disease was simply a deviation from physical or psychological norms, anything that resulted

[285] Harris 2009 p. 141
[286] Harris 2009 p. 143
[287] Harris 2009 p. 143
[288] Resnik 2006 p. 211 Some authors have suggested that vaccinations be seen as preventative, that is, a third category of intervention distinct from therapy and enhancement. See Bostrom and Roache 2007 p.121 and Parens 1998 p. 10
[289] Resnik 2006

in such a deviation would point to the person being considered sick. This would mean there would be a loss of variation as well as a reduction in freedom of choice with respect to various norms of health[290]. All athletes differ in health terms in the sense that they are genetically varied,[291] and it is not clear how a conception of health can be reasonably forced upon all athletes even within one sport. This is not to say that testing for health as I promote in Section 4.1 above is unreasonable. This would include certain parameters and allow for a degree of genetic variation and enhancement to promote the safety of athletes competing. Rather than measuring across whole populations specific health norms are the only acceptable ones. An example of this might be the haematocrit level in cyclists; if it is above 50%, athletes are not allowed to compete as they are deemed to be ill.[292]

There are similar problems with Resnik's second line of enquiry: the goals of medicine. As there is not a robust distinction between health and disease, it is very difficult to know how the goals of medicine directly relate to the promotion of health and the reduction of disease. Moreover, Nick Bostrom and Rebecca Roache identify the dichotomy as not being aligned with standard medicine as it is now or with how it could be in the future.[293] Their point is that medicine as it is commonly practised today involves numerous examples of interventions that are not treatments of disease,[294] but rather actions that necessitate medical input to realise.

As to the third line of enquiry, Resnik does not challenge the assertion that unborn children have rights. However he points out that as parents are already allowed to exercise proxy consent to remedy, for example, genetic defects, this could also be used for other relevant interventions as long as they as they are demonstrably in the interests of the future children.[295]

Resnik's penultimate line of enquiry is that of eugenics – usually understood to be the improvement of the human gene pool. Although many may see it as inherently wrong, Resnik asks if this is actually the case when trying to control the human gene pool. An important

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[290] Resnik 2006 p. 211
[291] All athletes start from differing levels of health in the same way everyone in the population differs.
[292] Moller 2009 p. 9
[293] Bostrom and Roache 2007 p. 120
[294] The examples they offer include "preventive medicine, palliative care, obstetrics, sports medicine, plastic surgery, contraceptive devices, fertility treatments, cosmetic dental procedures" Bostrom and Roache 2007 p. 120
[295] Resnik 2006 p. 214

distinction here is between who is doing this control – parents, or state based eugenics programs. Whenever people choose to procreate with each other or through selection of gametic donors, they are in fact making eugenic choices. These are probably not made with control of the human gene pool at the forefront of their decision making process, yet any effects on the gene pool remain as a result of these parental actions regardless.[296] If it is acceptable to allow some level of parental choice that does affect the human gene pool, then such an action in itself is not considered by society to be inherently wrong.[297] The problem is that as soon as the term 'eugenics' is used there is an understandable, if not *always* warranted, negative reaction. State eugenics programs are rather more controversial. Past events[298] suggest that to be undertaken today defenders of such eugenic schemes must strongly demonstrate their moral acceptability.[299] This still means that even if such proof was not provided, *parental* eugenics is not wrong.[300]

The final line of enquiry Resnik considers is that of humanness. What it means to be human is by no means a settled issue in philosophy. This means from the outset that use of the concept may prove to be difficult. Resnik notes that it is necessary to know what makes people human; which traits, and why it would be immoral to change them.[301] His suggestion is that "Humanness is best understood as a cluster concept in that it can be equated with a list of characteristics but not with a set of necessary or sufficient conditions."[302] He concludes that the majority of ethical systems do not suggest that alterations to the human form are inherently wrong.[303] Hence a Kantian deontologist would have concerns if changing a person's humanness was a violation of human dignity and autonomy,[304] and the consequentialist will have to consider the summed envisaged consequences. Both these theories suggest that while there may be some genetic interventions that *are* wrong, it is not the case that *all* of them are.

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[296] Of course, one's mate might have genetic failings or recessive genes that could problems in the future. By choosing to procreate, one is necessarily accepting the ramifications these genes will have on future generations.
[297] Resnik 2006 p. 215 This is very much linked to the discussion of open futures in Section 3.1.
[298] Kevles 2004 examines these in detail.
[299] Resnik 2006 p. 210
[300] Agar 2004 examines this topic.
[301] Resnik 2006 p. 212
[302] Resnik 2006 p. 212
[303] Resnik 2006 p. 213
[304] Resnik 2006 p. 213 Also, see my exposition of Kass' arguments in Section 3.2.

The foregoing shows that the therapy-enhancement distinction is not especially clear. Moreover, the various lines of enquiry have not pointed to anything that would imbue the distinction with something of moral import. It is the therapy or enhancement that is moral or immoral, and in line with the theory informing this thesis, it is the resulting consequences of any undertaken that would give it such a denotation. In addition, this analysis would point back to whether the agent conducting the enhancement was in possession of certain character traits. This will also be relevant to the non-consequentialist who might be concerned about the internal qualities of a person so engaged.

If it is the case that there is no moral distinction between treatment and enhancement, is there a concern with the way it is undertaken, that is, through genetic rather than other methods? I have already detailed in Chapter 2 why the technology itself is not morally wrong, but here the comparison is between *types* of enhancement to discover if there is anything morally relevant at the genetic level. Allen Buchanan situates biomedical enhancements in the context of the history of humans enhancing themselves. He notes the examples of literacy, numeracy and better nutrition that have enhanced human cognitive abilities and additionally have measurable *physiological* effects as well, in case the examples he offered are deemed merely external and therefore different in kind.[305] It is also the case that enhancements throughout the species' history have changed the genome of *homo sapiens*. The examples he gives are dairy farming leading to changes at the genetic level resulting in tolerance to lactose, as well as transportation technologies that have meant a greater mingling of gene pools.[306]

Jonathan Glover also questions why it would make a difference to intervene in environmental cases as opposed to genetic ones. He notes that at the environmental level people are influenced in more extensive ways than just ridding them of physiological and psychological limitations. Only focussing on this in schools, for example, would result in a far worse schooling system than is currently possible. The whole point of education and upbringing is to transcend a child's current possibilities rather than just make sure they can merely function.[307]

[305] Buchanan 2011 pp. 38-44
[306] Buchanan 2011 p. 41
[307] Glover 1984 p. 53

In quotidian life, developed societies for the most part do not accept the bare minimum for survival for any of their members. Older members of such societies pass on their accumulated knowledge and do their best to help younger members maximise their potential as future full members of that society. The permanence of genetic changes may initially seem to be the reason why there is a posited difference between genetic and environmental interventions but this does not allow for the often permanent effects of various forms of upbringing.[308] A difference in degree is more likely to be the case. If, when children were raised, it was possible to ensure they were not able to be cruel or unpleasant would such a lack of irreversibility be such a bad thing?[309] As discussed in Section 4.2.3 'Responsibility, Freedom and Chance', liberal societies tend to avoid the over-formation of children's characters and prefer a partnered approach where parents help develop the emerging self as it so emerges.

Thus, neither the idea of therapy as opposed to enhancement, nor the fact that the mode is genetic has shown why this would serve as an ethical boundary on enhancement activities in general. The foregoing discussion has highlighted the fact that it is each enhancement that must be ethically evaluated.

Even though the treatment-enhancement dichotomy appears to be an unhelpful guide in medicine or even in typical societal life, its ardent supporters may claim that its place in the sporting context is different. That is, while the hockey player may need reconstructive surgery on her knee due to an impact with a high-flying ball, this is morally different to the sprinter who undergoes surgery so as to be able to build more muscle in his quadriceps to increase acceleration and top running speed. The adherent of this view reasons that there is a moral difference between the two cases as the former is a return to typical functioning and the other as taking the athlete past it.[310] The similarity with the problems demonstrated in the discussion about treatment and enhancement above are clear, yet within current sport the first operation is legitimate, but the second is not. At this point, I am only concerned with the supposed *moral* relevance *in sport* of the distinction – matters such as 'Fairness' and 'Spirit of Sport' will be dealt with in subsequent sections.

[308] Glover 1984 p. 53
[309] Glover 1984 p. 53
[310] Athletes are typically 'better functioning' than the rest of the population anyway.

In sport, the two examples above have similar *personal* consequences for the athletes concerned. They are both able to perform better than they could before the operation. It was, I will assume, chance that left the hockey player in need of surgery. Yet, after surgery, she can still be properly involved in a social practice and direct herself towards its internal goods. Thus, using a virtue consequentialist analysis, the fact that she has had the surgery means that she is still acting appropriately with respect to her chosen practice. This is because in its absence, she will not be able to engage in the practice. This results in her being unable to realise the aforementioned internal goods. If these cannot be realised then good consequences are not being brought about. In an optional activity such as sport, it is presumably the case that there are limited bad consequences due to the hockey player not playing but that she brings about positive events when she does play.

Now I will consider the case of the sprinter. His case is not so clear, but I will show how, although his was an enhancement, he too is acting appropriately. The sprinter has chosen to enhance himself. Given the state of current regulations, I will assume that these have been changed and the enhancement is legitimate with respect to the rules. Moreover, I will assume that he has chosen an enhancement that is readily available to all elite competitors. These assumptions are reasonable in as far as I will defend them in Section 4.2 'Fairness' below. He is already a good sprinter but thinks that his training regime will be more effective if he can increase his muscle mass in his legs. He knows he will have to keep doing more weights to make the muscles grow and be effective, but at least he now has increased the extent to which he can do this. He was, unfortunately for a sprinter, not born to particularly well-muscled parents and it is already impressive that he has made it to the elite level.[311] He undergoes the surgery and proceeds to throw himself into his training regimen. His focus is on winning the 2012 100m final at the London Olympics – a good very much internal to the practice of sprint running.

This surgery has enabled him to better approach his goal and so his behaviour is morally correct in terms of internal goods and has highlighted virtues for the enhanced athlete in the same way as for the treated athlete. There *are* other consideration for the genetically

[311] The sprinter is not predisposed to the gain of skeletal muscle.

enhanced athlete that I have yet to explore, but in terms of treatment and enhancement there is no moral difference with respect to sport.[312]

In this section I have recognised that genetic enhancement would be impermissible if it put the health of the athletes at a greater risk than the sport they already undertake. The assumption is that techniques will need to be perfected in the laboratory and then used by appropriately qualified professionals. Opponents of genetic enhancement must also answer why the improvement of the health of athletes generally, for example in terms of strengthened immune systems, would constitute a negative action. The treatment-enhancement distinction failed to have any normative force in either society generally or sport specifically. Thus, it did not preclude genetic enhancement in sport as it did not stop the internal goods of a practice being realised and therefore allowing the associated good consequences to obtain. The strength of the latter part of the argument will be supported in the sections that follow.

4.2 Fairness

If it is the case that both the process of genetic enhancement and the subsequent use of those enhancements are safe, then the next question that is usually raised is whether such use is fair. Given that the WADA have stated that gene doping is not permitted,[313] it could quickly be argued that it is simply not allowed. People who undertake it are going against the rules and hence are not acting fairly towards other competitors: they are cheating. However, the purpose of this thesis is to show why the WADA's stance is not justifiable, so the fact that genetic enhancement is currently against the rules will be put to one side. The issue of fairness is relevant to those players who may have differing motivations. As above in Section 1.6, people who are directed toward only external goods have no reason to play fairly because they do not care about the practice in its own right or its internal goods. Those who really are so inclined will never consider fairness an issue,[314] but for the rest, in what follows, there are a number of approaches to appropriate, fair, play. As I have suggested that the WADA have

[312] It is trivially clear that repairing a broken foot is treatment and giving an athlete bigger thighs than anyone has ever had before is an enhancement, the reason for this is because the latter misses the point about genetic enhancement; an athlete would not just be given enormous thighs, he would have to train just as much, except now he is predisposed to gain the muscle he desires. I explore this more in Section 4.3.
[313] WADA 2011 p. 6
[314] Butcher and Schneider 2007 pp. 137-138

acted prematurely and rather than stop the discussion here, I will pick up the defence of my claim that genetic enhancement in sport is ethical by showing that the objection based on fairness is insufficient to stop genetic enhancement.

Although most people have a general idea of fairness due to inculcation in their society's norms, the concept needs to be fleshed out as there are various conceptions that are pertinent to this discussion. However, it is worth noting at this juncture that I do not propose to offer my own conception of fairness. Rather, I will demonstrate that even when considering some of the many conceptions of fairness in sport, I will show that that they do not provide grounds for restriction of genetic enhancement from sport.

The issue of fairness is multi-faceted because it can be considered on a number of levels. These range from the specific actions of competitors in their interactions with each other while taking part in sport, to the way the competition is designed in the first place. I will start by briefly considering John Rawls' comments on games. This is because while Loland has written extensively on fairness in sport[315] he has based some of his ideas on Rawls' work.[316] I will then combine Loland's analysis of fairness in sport with Robert Butcher and Angela Schneider's claims on the subject.[317]

Rawls uses the example of games to show important features of cooperative social ventures. Whilst noting that there may be different ends for those involved in games,[318] there must be a shared end that all involved must want the game to played properly, which is only possible within the rules, thus making it fair.[319] Importantly:

> Whether individuals have a shared end depends upon the more detailed features of the activity to which their interests incline them as these are regulated by principles of justice. There must be an agreed scheme of conduct in which the excellences and enjoyments of each are complementary to the good of all. Each can then take pleasure in the actions of the others as they jointly execute a plan acceptable to everyone. Despite their competitive side, many games illustrate this type of end in a clear way: the public desire to execute a good and fair play of the game must be

[315] Loland 2003, 2009
[316] Rawls 1999
[317] Butcher and Schneider 2007
[318] Rawls 1999 p. 461 The examples he gives are excitement gained by playing the game and a desire for exercise.
[319] Rawls 1999 p. 461

> regulative and effective if everyone's zest and pleasure are not to languish.[320]

In many ways, Rawls' account of fairness in games appears sufficient. The good game is the fair game where prescribed rules are followed by all involved. Moreover, it is important to note that Rawls writes of an "agreed scheme of conduct" that, if followed will presumably be "acceptable to everyone". This account is close to being a formalist reading of fairness in games; in order for play to be fair then the rules must be followed, but he has also added the idea of agreement or what might be considered a contract in the sense that if people are playing a game they must have agreed upon this set of rules that they are following in order for the game to be played at all. Below I will present other views from writers who find adherence to rules and, or agreement about games to be insufficient in terms of fully capturing the notion of fairness in games and develop the idea further.

Broadly using Butcher and Schneider's analysis[321] and combining it with Loland's work, I will consider the following conceptions of fair play in sport. Fair play can be articulated in terms of 'Virtues', 'Play', 'Fair Contest', 'Respect for rules', 'Contract' and 'Respect for the game'.

As concern about genetic enhancement is relatively recent, it has not featured much in the literature in 'fairness' terms with respect to the above conceptions. I will suggest how I think that the particular issues raised by this emerging technology relate to them, drawing on specific writers where appropriate. Although six conceptions have been suggested, several of the conceptions really amount to the same thing – I will make it clear where I think this is the case and direct analysis accordingly because much of what can be said about each, in fact, applies to more than one conception of fairness.

Virtues

The first, 'bag of virtues' approach is where a list is made of character traits, often referred to as virtues, and these are linked to sport.[322] Hence, those that do not act in accordance with these virtues are not acting fairly towards those that do. There has been much discussion

[320] Rawls 1999 p. 461
[321] Butcher and Schneider 2007 conclude that 'Respect for the game' is the most suitable conception, but I as stated above, this, though interesting is not the area I am exploring in this work.
[322] Butcher and Schneider 2007 p. 121

about the content of such a list of virtues and there is the difficulty that the plurality of ethical systems results in different constituents of this list, which is the basis for fair play.[323] In the same way that there is no ideal, external, observer who can conclusively judge which ethical system is best, there is no suitable way of properly delineating the required list of virtues for fair play.[324]

However, as it is the case that sport necessitates those involved to be taking part in the same practice, fairness in sport itself would, in theory, be exactly the route to gain adherence by all athletes.[325] The grounding of fair play within sport as contract is discussed below. At this point it is enough to state that the issue presented by this view is that it is difficult, and likely impossible to agree upon a set of virtues linked to sport that adherence to would ground fair play. There is a slight departure here from MacIntyre's conception of practices. He thought that in order to successfully realise internal goods that the *specific* virtues of justice, courage and honesty must be in place. These positive traits do contribute to the gain of internal goods, but they are not the only relevant types of positive behaviour. If the good consequences of internal goods are still realised by the agents' actions in being involved with sport then certain extra traits will be picked out.[326]

The impact of genetic enhancement on the virtues approach to fair play is difficult to ascertain. This is because of the aforementioned difficulty about identifying precisely the virtues that are linked to sport. However, I will consider the situation in broad terms. If it is the case that virtues, whatever they may be, are something people have to work towards rather than being innate, then is the situation as laid out altered if genetic enhancement is used?

Typically, athletes might be expected to increase muscle strength or oxygen uptake levels through genetic means. These and similar enhancements do not have any direct bearing on virtues but they may do indirectly. Currently, an athlete has to strive for their goals using their genetic make-up and social background as they stand. Such striving is linked to psychological traits such as determination and will power. These almost certainly have a

[323] Bredemeier and Shields 1994 and Lumpkin, Stoll and Beller 1994 in Butcher and Schneider 2007
[324] Butcher and Schneider 2007 p. 121
[325] Butcher and Schneider 2007 p. 121
[326] In addition to those suggested by MacIntyre, for example perseverance and so on.

genetic component too but I will assume that it will not be possible to manipulate these in the near future, something I also consider in Section 5.2. The situation is such that an athlete finds himself working with whatever physical traits they happen to have. This means that if enhancement occurs before birth, at the behest of the athlete's parents, then from the athlete's perspective nothing has changed. They are honing their psychological traits with respect to their physical traits as before.[327] However, the situation differs if the athlete uses genetic manipulation once they are an adult.[328]

In this case, the opponent to genetic enhancement in sport could easily argue that by enhancing themselves, the athlete is reducing the amount they may have to strive for certain goals. In turn, this would lower the amount or proximity to the virtue in question. Baldly the opponent is correct yet for their position to be secure, they must demonstrate how such self manipulation is relevantly different to other methods of performance enhancement. It is not enough to say that it is simply against the rules as these could or in this case should be rewritten. An example of the similarity with other forms of self-manipulation for performance enhancement is weight training. It is an arduous process yet is undertaken because it makes the athlete more adept at their chosen physical movements. Considered at one step removed, the result of weight training is to make the athlete's life easier through better performances. Similarly, there is the taking of nutritional supplements such as vitamins to make an athlete's life easier by being healthier. It is certainly the case that genetic enhancement will make an athlete's life *easier*, but it will not make it *easy*. They will still have to undergo extensive training. Unless one adopts the position articulated by Sandel in Section 3.1 above that people forego anything that is not what they are born with,[329] on the virtues as fairness approach, the opponent cannot reasonably insist that genetic enhancement is unfair. I discuss further ideas about striving and other challenges below in Section 5.4 'Proper Achievements'.

Play

Next, there is 'fair play as play' on which approach sport is understood as a distinct practice from quotidian life. People enter the practice because they so desire and for the practice in

[327] See also Section 3.2.
[328] The exact point this may be, in terms of maturation or age, is unimportant.
[329] Although he does inconsistently allow certain influences such as medical treatments. Sandel 2001 p.49

itself. Thus, the attitudinal stance fitting sport is playfulness. Hence, by entering the practice with the correct attitude, the sport will be played fairly.[330]

The main issue with this characterisation is that it fails to properly characterise sport played at different levels, as well as failing to consider link between pleasure and play. It does not allow for the differences between the complete amateur on a Sunday afternoon using jumpers for goalposts, to the consummate professional at the World Cup. Someone who supports this view of fair play needs to answer how these different approaches to sport relate to play for its own sake. Also, there does not seem to a strong link between fair play sourced in seeking pleasure through playing sport. This is because the practice of sport itself, and any similar, optional practice, brings pleasure to those involved. The point is that pleasure is not sought and a route to it is decided on after the fact. People undertake practices and all they entail *precisely* because the result of so doing provides them with pleasurable experiences.[331] The javelin thrower does not think she will maximise pleasure by throwing the javelin further than everyone else. Rather, she aims to thrown the javelin further than everyone else, which she expects will bring her great pleasure.

This approach to fairness does not have a great deal to say about genetic enhancement in sport. This is partly due to it not concerning itself with competing at different levels. However, even allowing for that, the genetically enhanced may add a better level of play, even play for its own sake, as they may have higher skills, better endurance and so on, therefore developing the game.[332] This all would mean that even on this limited view of fairness, there will still be good consequences as internal goods would still be realised with universal inclusion of genetic enhancement.

Fair Contest

The idea of 'fair play as fair contest' sees sport as a contest. Hence when athletes enter a sports contest, they make an agreement that they will test their respective skills within this particular practice. The practice itself determines which skills are relevant and the extent they

[330] Butcher and Schneider 2007 p. 123
[331] Butcher and Schneider 2007 p. 123
[332] This is, of course, the case if genetic enhancement is available to all, otherwise the competition would indeed be removed from this conception and be unfair because it would be one-sided. I explore this further in Section 5.1.

can be brought to bear. If an athlete breaks this agreement, they are no longer involved in the practice and are not in the running for victory.[333] This conception is clearly linked to the discussion of 'Respect for Rules' and 'Contract' below. At this point I will just note that commentators have observed that fair play seems to be more than the "mere absence of cheating"[334] which this negative conception seems to be suggesting.

A philosopher who has developed the concept of fairness in sport is Loland. Essentially, Loland sees morally right conduct in a sports competition as being fair and just.[335] Loland draws on Rawls' work, which was briefly considered earlier. He interprets the notion of fairness generally as the idea that having freely entered the practice of sport, which is necessarily structured by rules, the agent is then required to behave in certain ways. Thus it is the particular context that determines which moral principles are involved. In terms of sport specifically, this means that distributive justice is a major feature of competitive sport. This form of the practice is based on a meritocratic scheme whereby goods, in terms of victory and any advantage, are based on superior performance. Conversely, inferior performance or rule breaking results in loss or disadvantages.[336] The result of this is that:

> The characteristic, structural goal of sports competitions is to measure, compare, and rank competitors according to performance of relevant skills within the framework of the rules[337]

This leads Loland to suggest that for this to be done fairly means competitors must have open to them an "equality of opportunity to perform".[338] He therefore analyses inequalities linked to a) External Conditions, b) System Strength and c) Persons.[339]

a) External Conditions

These are climatic and material conditions, which are the weather – is it raining or sunny – and the actual arena in which the competition takes place – the state of the piste, running

[333] Butcher and Schneider 2007 p. 123
[334] Butcher and Schneider 2007 p. 124
[335] Loland 2003 p. 103
[336] Loland 2009 pp. 161-162
[337] Loland 2009 p. 162
[338] Loland 2009 p. 163
[339] Loland 2009 This is not the order Loland tackles these issues, but because of the relevance to my thesis I have decided to approach them as set out.

track or pitch.[340] In terms of external conditions specifically, unless events are held inside then equality of opportunity to perform will have to be found elsewhere,[341] simply because the weather cannot be controlled. In order to increase equality of opportunity to perform with respect to external conditions, this would begin with some sort of random system for selecting starting positions, for example[342] so that competitors would randomly face inequality in the state of the arena for their performance. Clearly, the specific future effects of climatic conditions cannot be predicted in the sense of whom they might benefit or disadvantage, so no scheme of distributive justice can be invoked to manage such benefits. Given that Loland sees that competitions are concerned with the ranking of participants,[343] if a system is found which at least allows the correct ordinal ranking of competitors, the organisers will have succeeded in their role of creating a fair competition.[344] This means that it might not be possible to measure the differences between the competitors except as far as their finishing position; that is to say the margins between them may remain unknown.

On the other hand, events held outside will sometimes suffer a change in conditions as the event progresses. I took part in the Vesta Sculler's Head in 2000.[345] This involved sculling a single rowing boat along the Thames from Chiswick in London to Putney, with times being taken to determine the winner. The first hundred competitors or so were set off based on their finishing position from the previous year. After that, scullers went off in divisions based on age, sex and experience. At the start of the race the Thames resembled the North Sea on a windy day, but as time went on the wind died down and the river was entirely flat. Clearly this meant that later competitors had better conditions to engage with than those going off first. Even though those starting first were presumably better scullers generally, the final results suggested that scullers starting later had particularly benefitted from the absence of rolling waves. Inequalities are inevitable when nature is given free reign. As they negatively affect the accuracy of the final result, there is reason to allow for this in the distribution of advantage and disadvantage.[346] In guiding those that organise sporting competitions, the route

[340] Loland 2003 p. 47
[341] Loland 2003 p. 49
[342] Loland 2003 p. 50
[343] Loland 2003 p. 51
[344] Loland 2003 p. 51 There is likely to be less accuracy in the measurement of the actual difference between competitors.
[345] Vesta Rowing Club 2012
[346] Loland 2003 p. 52

to a fair contest should be followed to the greatest extent that will allow equality of opportunity to perform.[347]

The relationship between external conditions and genetic enhancements is not as clear as with some of the other sports-based concerns. If an event takes place outside, competitors are aware that adverse weather conditions may make the event last considerably longer. A long distance event such as an Ironman™ Triathlon takes the fastest competitors around eight hours to finish and the slowest up to seventeen. This means that the prudent course of action is to ensure that their capacity for endurance is not at the minimum to get them round the course on a good day.[348] As it is always going to be difficult, if not impossible for race organisers to allow for changing conditions, the onus is on the athletes to prepare themselves for such an eventuality. Whether this was through traditional endurance training or enhanced endurance training, competitors would be acting in ways aligned with what the practice itself necessitates. This would mean that the sport's internal goods are still being appropriately targeted and not undermined by genetic enhancement.

b) System Strength

Today, many athletic feats have been realised through the assistance of extensive 'systems' of resources including: material, technological, scientific, medical, facilities, coaches and so on.[349] This is a far cry from earlier times in competitive sport where John Hoberman notes that even having a coach or doing any extra training at all was not considered appropriate behaviour.[350] Loland worries that any admiration that an athlete or team of athletes gains is not properly directed. Modern sport has resulted in the situation that it is not a case of ranking the athlete or team against others within a sport, in fact it is their whole system strength that is being ranked.[351]

In line with comments above concerning when differences between competitors should be compensated for in order to increase the fairness of sports competitions, it seems that system strength is a legitimate target. This is because it is merely contingent on circumstance which

[347] Loland 2003 p. 53
[348] Otherwise they will not be considered to have complete the course within the rules.
[349] Loland 2003 p. 61
[350] Hoberman 1992 p. 6 Has many examples of differing historical attitudes to training with early ideas being about human potential.
[351] Loland 2003 p. 61

system an athlete is supported by and this is not something they can easily change alone; they cannot choose to be born in the USA or Australia, or even more there easily for example. This lack of freedom means that the inequality resulting from their position is not something they are responsible for. This leads to the conclusion that the right thing to do is to reduce inequalities in system strength and access to resources.[352] Suggestions for managing this include the redistribution of economic resources each season, standardising equipment, and sharing relevant scientific advances.[353]

Loland warns that as genetic technology progresses, athletes might be put at risk because of their reliance on the expert administration of such technology. Athletes may find themselves at risk because of how they are treated with respect to this technology and could end up having to rely even more on the moral or otherwise nature of their support systems.[354] This concern was seen above in Section 4.1. There, I pointed out this was a particular concern for team based sports where submission to the needs of the team was a vital part of being a member of that team. As with other issues relating to team sports, this is an institutional concern that could be met with suitable regulatory oversight. Yet it is important to remember that "A sports performance is an extremely complex result of a high number of interactions between genetic potential and environmental influence, and can probably never be fully controlled and manipulated."[355] As many athletes are already reliant on extensive support systems, a relevant concern here is that enhancement techniques would increase this reliance, not give athletes greater freedom. Although, it enhancements made athletes healthier, they would presumably be able to reduce such reliance in other aspects of their sporting lives. They may need a medical professional to assist in their genetic enhancement but they might not need her services in terms of general physical well-being.

If this new technology does in fact exacerbate the inequalities between support systems as well as severely limiting an athlete's options for engagement with a practice, then there are

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[352] Loland 2003 p. 62

[353] Loland 2009 pp. 168-169 One nation doing this is unlikely, but if the governing body of the sport introduced the rule, nations and their athletes may have no choice but to abide by it.

[354] Loland 2009 p. 171 Given some interpretations of the doping phenomenon this is already a concern. Consider the history of doping to see state sponsored programs where athletes have had little choice but to take whatever substances their coaches provide. Consider East Germany's horrors Hoberman 1992 pp. 221-224. Also, see above in Section 4.1 related concerns.

[355] Loland 2009 p.171

clearly negative consequences both for the individual and for wider society in terms of his relationship to the social practice of sport. The latter negative result is linked to the problem of limited access. Competitions will be entirely one-sided if, for example, one team in rugby has a genetically enhanced front row and the other merely has the 'larger than average member of the species' but unenhanced variety. Spectators are typically expected to gain less from an easy victory where the result is already known in advance than a close competition which would end in either team's favour.[356] Moreover, it could be extremely dangerous for the weaker side if they are seriously outmatched in a contact sport.

The continued existence of the current model of support systems suggests that overall, the sporting world and its regulatory institutions are not too concerned about this particular inequality. However, I will assume that this is an oversight, deliberate or otherwise, and explain why this still does not necessarily preclude genetic enhancement. Just because everyone does not have access to something does not mean, *in society*, people should wait until it is universally available. To ask *sport* as a social practice to solve a global endemic issue is unreasonably asking too much of the practice. On the other hand, precisely because sport is a particular practice, it could allow those enhancements that were as readily available as, for example, a team doctor. At the elite level at least this should assuage fears about the negative consequences of one-sided competitions. The amateur level is harder to delineate, because of the multiple levels of involvement with the practice that occur within the non-professional arena. Some sports, such as triathlon, are notorious for their resource heavy requirements. These include a wetsuit, bicycle and running shoes. Interestingly though, because any of these artefacts, particularly at the non-professional level are only as effective as the *person* using them, having a worse bicycle is not usually a reason for a marked worse performance. I take up the idea of the person performing in the section following on 'Persons'.

The issue about a reduction of freedom is pertinent because it again highlights the dependence on support systems for those at the top of any sport. As I discussed in the Introduction, this is to be expected because athletes over the decades have realised they can increase performance by using the expertise of others. The extent that this situation is

[356] Section 1.6

exacerbated by the introduction of these novel technologies will be at least partly determined by how difficult they are to administer. As with most technological innovation, a process that is initially very difficult and is only feasible through the employment of experts typically gets simplified over time. If genetic enhancements reached the stage, relatively quickly, of the ease of an injection for example, then there would not be the posited loss of freedom through over-reliance on others. If this does not pertain to this particular technology, then the situation is similar to that of support systems and *de facto* acceptance of differing resource strengths. Sports could decide what athletes can use, although, this decision must include exploration of whether such technology is actually different to methods currently practised in sports medicine. Ruling out practitioners of the latter would be simultaneously difficult and negligent because even given their possible failings by helping athletes break the rules or only considering the team and not the individual, caring for the health of the athlete *is* a vital part of their role.

c) Persons

This final inequality is particularly relevant for the discussion about genetic enhancement in sport. It is clear that when an athlete acts within a sport to produce a performance, any difference in a performance when compared with others is based on a number of initial differences between competitors. The performance is not simply a function of the athlete's genetic profile but must be considered in relation to the athlete's environment as well as the context of the specific contest in which the performance is found.[357] It would be highly unusual to find a 110kg man who was 197cm tall in the Olympic Final for any gymnastics event, but not in the Rugby World Cup Final.

Yet, Eric Juengst has identified the problem with genetic enhancement to be precisely the fact that competitions aim to "preserve *the hierarchical ranking of inherited talents* as a key feature of sport's celebration of human excellence"[358] moreover, "far from celebrating human diversity, does sport intrinsically glorify a genetic prejudice that the world is working hard to evolve beyond in other spheres of human life?"[359] The 'genetic prejudice' Juengst remarks on is the idea that praising the genetically lucky is only going to exacerbate social inequalities

[357] Loland 2003 p. 53
[358] Juengst 2009 p. 176 His emphasis, although he does not apparently think this is a good thing.
[359] Juengst 2009 pp. 176-177

outside sport. Social institutions are often structured to account for the vagaries of the genetic lottery, whereas sport does not. Consider the notion of a welfare state that acts to look after those who for whatever reasons cannot look after themselves. Although it might be argued that competitions for the disabled are the same is true, this is not analogous. This is because while the welfare state acts to help people function within the same system as those not disadvantaged, parallel competitions take the disabled into an entirely different practice. However, this disparity is a very important aspect of my thesis as is explained in Section 5.3 where I suggest that actually allowing genetic enhancement would help alleviate problems cause by the genetic lottery and allow greater involvement in the practice. The wider social concerns that Juengst articulates are not relevant at this stage while I am discussing fairness, but the fact that opponents of genetic enhancement might oppose the technology on the grounds of removing the ranking of athletes based on their genetic make-up and social luck is absolutely vital. It may *prima facie* seem that sport is simply about such ranking.[360] It can seem particularly unfair that if someone wishes to be a top level basketball player but is not close to two metres tall, they stand little chance of being successful. Loland notes that equality of opportunity to perform does not mean *all* performance related inequalities must be linked to a system of distributive justice; it is just those that the athlete cannot control effectively. This means performance inequalities due to biological and physical invariables such as sex, body size and age should feature in any scheme of distributive justice that is acting to manage such inequalities.[361]

This is because those inequalities that are outside an individual's control, such as the genetic lottery, are such that the individual can in no way be held responsible.[362] Loland examines the issue of allowing for genetic variation through extensive classificatory systems. In some sports, for example martial arts, athletes fight opponents of similar weight because weight is seen to be a relevant difference that can affect the outcome of competition. However, in many sports where a physical trait, such as height in basketball which clearly makes a relevant difference, there is no accompanying system of classification. However, if there were dramatically increased levels of classification, this would be linked to a lowered sense of achievement by those competing. Winning an Olympic gold medal against all comers in the

[360] Ranking makes up a great deal of Loland's conception of the good sporting competition.
[361] Loland 2009 p. 166
[362] Loland 2003 p. 54

100m sprint is not the same as winning the 100m sprint for people who weigh less than 50kg and are 160cm tall. Loland notes that there are many sports that suit different body types that preclude the necessity of finding new classification systems.[363] The situation is different at the non-elite level where sports typically classify by sex and age. Masters swimming, for example, starts out at 25 and progresses in five year increments up to the oldest competitor in the competition.

On the other hand, all systems of classification could be removed, although this would probably have negative consequences for those sports such as boxing and martial arts that have had them for much of their history for the good reason in that it makes the competition more interesting and not just a case of who is the larger human.[364] Loland adds that it is not clear at what stage classification should stop. It is well known that environment plays a large part in determining who people turn out to be, so should this be a factor in classification too? He points out:

> To a certain extent, individuals can influence the development of their strength and speed. We can train and improve. Limited natural talent from genetic predispositions can be compensated for by the strength of our own efforts. Moreover, even if the environment influences to a large extent what we become and what we can achieve, we may still hold on to the conception of persons as moral agents with the potential for unforced choices based on reason. Problematic social and cultural backgrounds can be fought against and overcome.[365]

It is reasonable to expect people to strive for what they desire and not be compensated for *every* inequality that that they may face. The question, then, is the extent to which the advent of genetic enhancement would impact this conception of fairness.

Using Loland's analysis of the fair contest I have shown that there are indeed some inequalities that organisers of events should at least strive to compensate for. Although the analysis explores the fair competition in a number of ways, it is with respect to persons that genetic enhancement has particular ramifications. At all levels of sport there are clear advantages to being built in a certain way. The small and agile do well in gymnastics, the large and powerful fulfil certain roles in American Football and those with extraordinary

[363] Loland 2003 p. 56 Although whether athletes would want to change sports is another matter.
[364] Loland 2003 p. 56
[365] Loland 2003 p. 57

endurance do well in ultramarathons. Through the genetic lottery, not everyone can either excel in all sports or they might not even be suited to a particular sport. Moreover they may not have any desire to specialise in the sport that they are in fact most suited to.

One aspect of living in a liberal society is allowing people to make choices about their lives to the extent that these choices do not harm others. Of course, sport is a social practice *within* society so it is not expected that all of society's norms will be carried through. Contact sports for example allow the deliberate infliction of force on others that is typically unacceptable in society. Yet, if people were at least willing to fund genetic enhancement for themselves in order to better their sporting goals, it would only serve to balance the currently random system that is now in place. Self-funded genetic enhancement is linked to another of Loland's concerns articulated above about system strength. Sport is not required to be perfectly equitable in terms of resources in the sense that the rest of our social practices have failed. This is not to say efforts should not be made to achieve it, but sport alone cannot be expected to achieve what governments have yet to manage. My suggestion above was to allow certain enhancements which were more easily accessible and required less expert administration. This would be in an attempt to not exacerbate the inequalities based on system strength.

One worry with allowing genetic enhancement on these grounds is that the world would end up with 'clones'[366] of the current world leaders in various sporting disciplines.[367] It is unlikely that it would be particularly detrimental to the world of sport as noted above because of the complex of physiological and psychological traits that make up the athletic elite. In addition, there is not a particular system of training that will work for every athlete, so at the least, athletes would still need to engage in different programmes to ready themselves for competition. In the end it seems that genetic enhancement would not infringe upon this conception of fairness, and in fact it may promote it with the corollary that certain sports need to specify, as they do for non-genetic enhancements, which are reasonable. It would simply allow people to have more control over the way they affect their 'initial' bodily conditions. As I discuss in Section 4.3 it would not absolve them of the hard work necessary to become brilliant athletes.

[366] In physical attributes, not necessarily genetic clones.
[367] Of course, world leaders do not always have styles that are typically considered effective – see Section 5.3 where I discuss the marathon runner Paula Radcliffe. The point is that something about them has resulted in their reaching the top of their sport.

Respect for Rules

The conception of 'fair play as respect for rules' develops the idea that in order to play fairly one must abide by the rules of the game. Butcher and Schneider also note that it is not only the letter of the rule but the spirit of the rule that should be respected too.[368] They comment that this conception is important because sports are necessarily based on systems of rules, which in fact define them.[369] This is the basis of the 'logical incompatibility thesis' that is the idea that it is not possible, by definition, to win, if one cheats in a sport.[370]

Currently, as has been stated, genetic enhancement is against the rules on doping as set out by the WADA. Hence, to engage in it would necessarily be unfair on this conception of fairness. The WADA response is, as I maintain, premature, and in place, amongst other reasons which in explore in the Section 4.4 appear to be to stop athletes taking advantage of a new technology before it has been widely understood or made available. Sports are social practices, most of which have been developed over a considerable number of years. The internal goods of a practice are expected to change as the practice evolves.[371] If this were not the case and the internal goods of a particular sport remained static, the introduction of such a novel technology would be contrary to those internal goods – where those internal goods are partly defined by the system of rules that structure the sporting practice.[372] Yet, all around society there is the empirical evidence that practices *do* change. In the case of sport, the practice could and (I am arguing) should redefine itself to allow the inclusion of genetic enhancements. Such an existential redefinition could be incremental over a reasonable period of time, in the same way that practices in general do not change overnight, but slowly. This would allow the new internal goods of the practice to be realised as good consequences of involvement with the practice.[373]

Contract

The penultimate conception of fairness is 'fair play as contract or agreement' which is characterised as the idea that given a sporting practice is defined by its rules and participation

[368] Butcher and Schneider 2007 p. 124
[369] Butcher and Schneider 2007 p. 124
[370] Butcher and Schneider 2007 p. 124 note this, although it is not their term.
[371] MacIntyre 2001 pp. 193-194
[372] An effective play in rugby for example requires the ball not to be passed forward.
[373] This is similar to the idea of background constraints in Section 2.1.

in the practice tests, performance within the framework of those rules, such participants tacitly *agree* to this framework by *being* participants. Hence, unfairness on this conception is due to a breaking of this agreement.[374]

The exact nature of the tacit agreement or contract is determined by those competing in relation to each other and the rules. This solves the problem of the content of rules as well as their interpretation, providing all involved agree to the latter. To act in accordance with this agreement would be to act fairly. Butcher and Schneider feel that this conception captures much but not all of what is necessitated by fair play.[375] This conception allows for varied interpretations of the rules. The 'house' rules for croquet may mean that a ball hit out may be placed back at an arbitrary line rather than one metre from the boundary.[376] These agreed to variations are one way in which practices are malleable and show that it is the participants in the practice that partly define the practice in particular situations.

If a sports competition is fair because it is reached through the agreement, tacit or formal, of those competing, then it is not unreasonable to suggest that genetic enhancement in sport could be agreed to as well. The good consequences of internal goods may change in scope with their inclusion, but they still exist.[377] An objection to this is that if genetic enhancement becomes prevalent, those competing may feel that they have no choice but to use it. This pressure is already felt in various sports today with other methods of performance enhancement.[378] If the enhancement is safe and easily accessible then this would set genetic enhancement apart from the current, subtly coercive environment that exists in, cycling, for example. However, this is not really the issue because the technology is not mature. The problem with the current situation for non-genetic performance enhancements is that though there are regulations that do not allow enhancements, these are in conjunction with an ineffective testing system.[379] Many athletes are aware that certain substances are against the rules yet also know that the likelihood of being caught using them is low. If this atmosphere is pervasive, many athletes feel they have no choice but to involve themselves with such

[374] Butcher and Schneider 2007 pp. 125-126
[375] Butcher and Schneider 2007 p. 127
[376] World Croquet Federation 2007
[377] See Section 4.3 below.
[378] Moller 2010
[379] Moller 2010

practices, even if only to compete effectively against others who do.[380] The solution to this is clear; regulatory bodies must either allow the use of various substances, or find effective methods of testing. The question then becomes one of whether genetic enhancement adds to sports or not. This will be discussed in Chapter 5.

Respect for the game

The final conception that I will look at is Butcher and Schneider's suggestion for a complete conception of fair play; that is 'fair play as respect for the game'. As sports are social practices, this means they in turn have interests. So, to show respect for the game, respect must be given to the interests of the game.[381] This leads them to suggest the following practical aspects of sports and games that go towards promoting the interests of the game and therefore towards fair play:

1. The contestants should be evenly matched. The ideal contest requires that the contestants be at comparable levels of skill and fitness;
2. The contestants should play at or near their best;
3. The outcome of the contest should be in doubt until the end. (This should be guaranteed by having evenly matched contestants playing at their best.)
4. The outcome of the contest should be determined by sporting skill or ability, not extraneous factors such as egregious bad luck or errors in officiating. Conditions of play, such as weather, may create additional obstacles but must not be so severe as to undermine the exhibition of skill;
5. The match must be fairly contested, that is, played within the rules of the game;
6. For an ideal match, the contestants must have a high degree of skill. Good contests can, however, take place between evenly matched opponents at any level of skill.[382]

This list of practical suggestions clearly captures many of the important features of the other conceptions of fair play. I have included it as distinct to the others because it demonstrates

[380] I discuss subtle pressures in Section 4.1.
[381] Butcher and Schneider 2007 p. 127
[382] Butcher and Schneider 2007 p. 133

how such conceptions can be more or less detailed as well as illustrating issues about genetic enhancement in sport.

Genetic enhancement in sport would only be a concern for sport if only one side had access to the technology. This could be remedied by employing some of the suggestions I made in the above sections on 'System Strength' and 'Persons'. Point 2 above is unaffected by genetic enhancement and Point 3 will stand, as the authors recognise, on Point 1. Points 4 and 5 have been dealt with above in my exposition of Loland's work. The final, Point 6, is one which could be met through the use of genetic technology. Although it may be harder to enhance fine motor skills and spatial awareness, putatively at least, if these were increased, then so too would the level of skill involved, which is explained further in Chapter 5. On this comprehensive final conception of fairness, genetic enhancement could in fact have very positive consequences for sport.

The foregoing explorations of fairness in sport seem to suggest that there are at least some avenues open to genetic enhancement and that its inclusion might actually make sport fairer. There would need to be regulatory changes to counter some of the more problematic issues including access to the technology and being at the mercy of support systems. A modest proposal would be to gradually allow the inclusion of genetic enhancements into sport that will ensure safety and better access by requiring the sharing of technical progress. It is worth recognising that additional support systems are already in a morally dubious relationship with many of their athletic charges. Creating better oversight of their activities will be difficult, particularly in state run schemes, and many systems have extensive financial incentives for maintaining the *status quo*. These, far more than genetic enhancement, need moral analysis if the practice of sport is not to turn into simply one company against another.

Consider an example of unfairness that the opponent to genetic enhancement in sport may offer as a test example against my arguments above. A young man in his late teens is reasonably healthy for someone his age. He has dabbled in a number of sports in his short life but has never particularly excelled because he is too lazy to train properly for any of them. He unexpectedly wins an extraordinary amount of money and decides that he is going to use his ostensibly limitless funds to help him in his quest to win gold at the London 2012 Olympics in the 100m running event. He is aware of new techniques that will allow him to genetically modify himself. He changes his ability to build skeletal muscle as well as his cardio-vascular

system. The problem, my opponent might ask, is how is it fair given that he is relatively talentless and lazy, but rich, if he powers past athletes who have been virtuously striving towards their own goal of this particular medal?

At first sight, if the lazy athlete were successful, it would seem incredibly unfair. I will show that this is not the case. This is because, unless certain events pertain, the athlete would not in fact be successful. In advance of his surgery, the athlete was lazy and talentless. When he only had the capacity for a certain amount of skeletal muscle and VO_2 Max,[383] he did not possess the willpower to improve his performance in his chosen sporting activity. My first response is to suggest that this could still be the case after the surgery. Talent aside, in order to increase his performance, he would need to train for many hours. This is often overlooked in discussions of genetic enhancement. The assumption is that anyone could turn up at hospital and undergo an enhancing operation and then shortly afterwards arrive at the World Championships and win every event entered. I discuss how striving for excellence will still pertain with the inclusion of genetic enhancement and develop the idea of purposeful practice in Section 4.3. This assumption about 'winning without effort' is simply false. Human beings are not robots who are giving more powerful pistons around their leg joints. Humans must learn how to move in an efficient way with whatever skeletal muscle and cardio-vascular system they possess. It is important to remember that any new skill takes time to perform effectively, whether as a child or adult. The changing of the predisposition of one's body constitutes enough novelty to legitimately assume that great effort would be needed to use the body effectively. Even if genetic enhancement has meant that people are able to develop skeletal muscle and cardio-vascular output to a greater extent, they will still need the willpower to actually train so they are developed. Perhaps, my interlocutor might claim, that the surgery is enough of a life changing event that the athlete's outlook on life will have sufficiently altered so that he can properly direct himself to do the training.

Even if it is the case that such surgery is not what normally constitutes a 'life-changing' event, I will allow my opponent that much. The athlete can now develop himself physically in ways that he could not before and has shifted his attitude enough in order to do so. The athlete is now in the position to start on the arduous road to success in running. Yet, having

[383] This is one measure of fitness.

allowed my opponent all that I have, how is this any different to the supposedly virtuous athletes striving away with what they already have? They have the predispositions to skeletal muscle growth and cardio-vascular system development precisely because they have won the genetic lottery. The fact that they have developed these to be amongst the top performers in their sports is likely to be related to having won the social lottery too. It would be to fall into the genetic deterministic fallacy to assume that just because of a person has a certain genetic inheritance that this means they will be particularly adept at a specific sport. By having the surgery, the athlete has levelled the playing field. He has put himself in a position that, given suitable and extensive training, he can compete with the best in the world. He has made sport fairer by doing so. My opponent has failed to show that the genetically enhanced athlete will be acting unfairly towards his virtuously striving competitors. This is precisely because the enhanced athlete will have to also strive virtuously in order to have any chance of being competitive at the elite level. I develop these ideas in Chapter 5 where I positively argue for the inclusion of genetic enhancement in sport.

The competing conceptions of fairness in sport all have their strengths. I found that in each case the conceptions did not preclude the use of genetic enhancement in sport. This was because of the following; the creation of a list of appropriate virtues is ultimately infeasible; there are differing levels of involvement in sport, not all of which can be characterised as playful; practices can be adjusted to allow for external conditions as well as for disparities in system strength and the initial differences between athletes can be improved with genetic enhancement; the rules can and should be changed; theoretically any set of rules could be agreed to; and finally although Butcher and Schneider's expansive conception includes much that is important about fairness, it needs to include Loland's ideas about the distribution of advantage with respect to certain conditions about people in order to fully capture the nuances of fairness. If I were to adopt a theory of fairness, it would be a synthesis of these two sets of ideas. I have shown how these would separately not be reduced by the inclusion of genetic enhancement and would in fact allow for a fairer approach to much of sport.

4.3 Proper Achievements

This objection is whether the genetically enhanced athlete is in fact truly responsible for their results. If it were the case that athletes so modified were not actually responsible for their achievements then allowing them to compete against athletes whose achievements are

properly characterised as being their own should not be allowed in sport. Moreover, it would suggest that the genetically modified athlete should not be praised or rewarded for any achievements that at first sight appear to be theirs but in fact are not. In large part, the concern about proper achievements is asking whether these achievements are authentically produced. I will begin with an examination of this and then consider some lesser claims that are concerned with proper achievements but are not readily subsumed into a discussion about authenticity.

In advance of engaging with authenticity itself, it is worth going over the paradigm of modern elite sport once again because it provides the relevant context for understanding how athletes produce performances today. This is because of its relevance to the claim that a genetically modified athlete's part is being eroded from the whole process of producing a result in the first place. It is an uncontroversial characterisation of modern elite sport that an athlete does not rely on solely their own approach to training and competing alone. The modern athlete does not compete or ready themselves through training without a whole host of external influences. The team doctor, nutritionist and physiotherapist for example will all have their parts to play in addition to any number of coaches and assistant coaches. This shift over the last century or so from the individual to the support team approach to competition came from a realisation that although one might have some success through the honing of one's skills alone, the input of others who have their own areas of expertise will be invaluable in terms of increasing the likelihood of success in competition.[384]

If it were accepted that opponents of genetic enhancement are correct and the technology is in some way different in kind to the other forms of external assistance, then one way to understand the genetically enhanced athlete's performance as not being their own is because of a supposed lack of authenticity an idea which I outline below. If the athlete's performances could be shown to be inauthentic, then opponents of genetic enhancement technology would have reason to call for their use to not be permitted. In order to consider whether or not actions and agents are inauthentic I will first explicate the notion of authenticity by considering ideas from Charles Guignon, Neil Levy and Gary Cox. I will then relate this to the work of the Sandel, a prominent opponent of genetic enhancement technology. Following

[384] A feature of humanity is the accumulation of knowledge such that individuals need not re-learn everything about the world from scratch. Huxley in Rachels 1999 p. 138

this, I will then consider the views of the President's Council on Bioethics, whose writing contains ideas that can also be interpreted as a claim about athletes who have been genetically modified not producing their own results. There is thus a shift from questions about authenticity to a number of different claims that I will meet, including 'Personal Identity', 'Bodily Understanding', 'Self-objectification' and 'Striving'.

Authenticity

The call to be authentic, whether in quotidian life or specifically in sport sounds like a reasonable one. On the face of it, being the 'real you' sounds like a better way of living than not being the 'real you', that is someone else who is like you, but not in fact who you truly are. Yet in fact, such a goal is not easily realised as the following paragraphs will illuminate. A prolific writer on enhancement, Erik Parens, defines being authentic as follows: "we are authentic when we exhibit or are in possession of what is most our own: our own way of flourishing or being fulfilled".[385] This initial offering for an explication of the concept sounds promising, but it ignores the fact that people must act in this way against the background of the society they live in. I will therefore start by considering existentialist ideas about being authentic which capture the idea of situatedness.

In order to be authentic[386] people must accept and take on the reality that is human existence.[387] Rather than merely reacting to events and the contingencies of life, people must exert their wills and take responsibility for themselves and their actions.[388] It is very easy to simply conform to the society a person finds himself in but such a life is not authentic. He must recognise his freedom and

> Instead of exercising his freedom in order to deny his freedom, instead of actin in bad faith choosing not to choose, the authentic person assumes his freedom and acknowledges it in a positive way.[389]

The inauthentic agent views his existence as simply contingent and makes excuses about his failures and sees himself as an entity that cannot be changed.[390] Moreover, a true

[385] Parens 2009 p. 184
[386] Although, according to the existentialist, that is not something to be achieved, rather something aimed for.
[387] Cox 2011 p. 82
[388] Cox 2011 p. 5
[389] Cox 2011 p. 82 Emphasis in original
[390] Cox 2011 p. 86

> …existentialist approaches life with the attitude that he can always do better, or at least with the attitude that he only approaches his best if he achieves what he set out to achieve which is certainly not to fail in doing what is required[391]

Finally,

> Authentic existence is a project that has to be continually reassumed. A person is only as authentic as his present act. Even if he has been consistently authentic for a whole week, if he is not authentic right now then he is not authentic. Given the world's endless temptations to bad faith, the difficulties of resisting regret and imposed inauthenticity, the fact that habit and other people's expectations shape a person's life as much as his capacity to choose, it is very difficult for anyone to sustain authenticity for a significant period of time.[392]

The foregoing paints a picture of the authentic life that may seem negative in the sense of being extremely difficult to even approximate and necessarily impossible to achieve. For as soon as the agent sees himself as a fixed entity, he is no longer authentic. The elite sportsperson fits this conception of authenticity very well. She is constantly acting on her own freedom to achieve her goals. She knows that she is responsible for achieving what she wants to achieve and constantly acts to exert her will towards it. She will monitor her training, weight, sleep and food intake. It is only through protracted effort that she will have any success at all.

Although this conception of the authentic life matches that of the elite athlete, there is more explanation necessary with respect to what this affirmation of responsibility actually entails. According to Guignon there are a number of steps to the living of an authentic life. To begin with, the agent needs to focus on their inner life. They must draw away from social distractions and reflect on the self deep within. In doing so they will discover characteristics that make up that self and these will be an important part of guiding how they are to live. Next, the agent must ensure that they live their social life in accordance with these inner characteristics. The latter step is important, because to be authentic, one must know who one truly is.[393] This is not the end of the process as this could mean the agent is such a solipsist that they are not good members of society. Although there is their inner self, the agent must

[391] Cox 2011 p. 90
[392] Cox 2011 p. 92
[393] Guignon 2008 p. 146

recognise that they are not separate from their society and that this too has a role to play. The agent must actively deliberate on how they can positively interact with society.[394] Hence:

> ...authenticity is a personal undertaking insofar as it entails personal integrity and responsibility for self. But it also has a social dimension insofar as it brings with it a sense of belongingness and indebtedness to the wider social context that makes it possible.[395]

Thus, authenticity is made up of the personal that people are responsible for and the social that allows this responsibility to be realised. Thus the authenticity seeking agents have considered themselves and how to act with respect to their society. They then, argues Levy, can choose one of two paths, or a combination of both, to being authentic. These can be described as 'self-discovery' and 'self-creation'. The first emphasises the inner self that Guignon alluded to above, whereas the second emphasises the construction of the self that the existentialists were arguing for previously. Importantly, for the purposes of this thesis, Levy presented an argument for why both of these conceptions did not end in a stalemate over the question of enhancement:

> First, we are and remain deeply attached to the self-discovery conception of authenticity. We appeal freely to the idea that we are each selves of a particular kind; gendered, sexuated, even embodied in precise ways, where being a self of that kind is a deep fact about oneself, deeper than the surface features of genitalia or limbs. All this is good news not only for proponents of the self-discovery conception, but also for those who would utilize this conception to criticize the use of enhancements. But the second point is less congenial to this perspective. The inner voice to which we listen, and which tells us what being human is for us, may not whisper of acceptance. Instead, its message might be that we should change, to bring inner and outer into harmony. Self-discovery might require change from us, and to that extent it is entirely compatible with the use of various enhancements.[396]

Thus, the self-discovery conception suggests that people may look within themselves and feel that they do in fact want to enhance themselves. If they acted otherwise, they would not be acting authentically. The self-creation conception fits well with enhancement technologies because they provide tools with which to be the person someone wants to be.[397] Any conception of authenticity which ruled out the latter idea would be weighted unreasonably

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[394] Guignon 2008 pp. 154-163
[395] Guignon 2008 p. 163
[396] Levy 2011 pp. 315-316
[397] Clearly, foetuses and children cannot do this effectively (or at all). My examples below comparing the enhanced child and adult show this is not damaging to the arguments for allowing enhancement.

towards the self-discovery conception. This is unreasonable as it would miss a great deal about one of the wondrous aspects of being human, that people are able to change themselves to become the people they really want to be. It appears that most animals simply exist, while humans are in a position to self-reflect and then act on this self-reflection. Such a feature of humanity cannot be appropriately missed out of a conception of authentic living.

Having shown some of what makes up an authentic life and how this aligns with the elite athlete's approach to sport as well as the use of enhancements generally, I will now consider some of the arguments of opponents to the use of genetic enhancement. Sandel worries that the spectator's admiration of an athlete's achievement will diminish in proportion to the place of enhancement in that achievement. The once positive reception by spectators will be transferred from the athlete to their pharmacist.[398] The fear is that achievements will be brought about *through* the athlete, but without the athlete's actual agency. Sandel does not use the term 'authenticity', but his ideas about being the *actual* author of one's projects certainly match up with this claim. The claim is along the lines that the athlete who uses genetic enhancement is not being authentic because they are reducing responsibility for themselves. They are removing themselves from the process of achieving excellence and passing this responsibility to their society, or rather, certain members of it – doctors and sports scientists. Before considering these claims against the ideas about authenticity above, I will further articulate Sandel's position.

Observing typical conversational norms, Sandel notes that people tend to speak of the expert athlete having a gift for their chosen activity. There is no need to assume that such a gift comes from a metaphysical entity such as a Christian understanding of God, but rather that their talents are not entirely their own doing. The source of this talent is not important, simply the fact that the talented possess something gained through a means beyond their control.[399] This means that people should not treat the natural world, or its inhabitants, instrumentally, but value them properly. If people fail to do this, they are not showing sufficient respect, but it is important to realise that this imperative does not have to have a specific metaphysical source.[400] This is because Sandel realises that while he could stress a particular metaphysical

[398] Sandel 2007 p. 25
[399] Sandel 2007 p. 93
[400] Sandel 2007 p. 94

source, such a commitment would have the likely result that people who did not share it would not see it having any importance.

In this claim, which also features throughout his work, Sandel is reminding people of the benefits of going though life as they are, rather than trying to change themselves to meet the demands of conformity or a competitive environment. He is talking about the positive features of the *unadulterated* life and activities. This aligns at least in part with the self-discovery conception of authenticity, but not the self-creation conception. He seems to be saying that once they have considered themselves it would be inappropriate to want to change themselves in any particular way. He is apparently asking for athletes to simply turn up and play, rather than actively decide to exert their wills on themselves and become what they want to be.[401] This may be accurate at the amateur level of sport but clearly misses a great deal that is important at the top levels. Society holds top athletes in esteem precisely because they have developed themselves in a particular way.[402] They are being authentic when they are doing this – on the lines I have considered above.

Additionally, Sandel's is a rather narrow view of how people achieve what they do, whether in sport specifically or life generally. It is not simply a case of having a particular genetic make up. There are multifarious societal factors involved too. The activities children are exposed to and the support their parents or society offer will to a large extent determine the longer term achievements of each person. It would be rare for people to achieve all that they wish without the input of others. The training shoe designer, the weights coach and the nutritionist clearly have major roles in the success of sprinters. Recognising this, the question is whether or not genetic manipulation is akin to these things or different enough in kind to render an agent's subsequent actions inauthentic. In Chapter 3 I explored this issue by looking at whether there was something inherently remiss about genetic enhancing technologies. I took this approach to counter various criticisms of the technology based on it supposedly being wrong in itself. My analysis concluded that while there could be negative consequences linked to the *use* of the technology, but in itself it was morally neutral. This

[401]Sandel 2007 pp. 26-29 Sandel does not say athletes should not train though he does seem to underestimate the importance of effort to athletic development which suggests that he may as well hold this extreme view. He simply wants people to cultivate what they are born with and nothing else. I maintain that genetic enhancement is simply a way of giving an athlete something appropriate to cultivate. In Section 4.4 I argue that adherence to the genetic lottery is itself morally suspect.
[402] As recognised by Syed 2010 and Gladwell 2009.

conclusion was not controversial but here the concern is about both the technology and the use to which it is put. The similarity with the actions of a sports doctor and a nutritionist is relevant. These two professions are in the business of offering guidance with respect to the administration of a variety of substances. This may be in the form of anti-inflammatories or a protein milkshake after training. These would be taken to aid performance just as genetic technology might be administered.

Given these conclusions and the articulation of authenticity in this chapter I am now in a position to consider whether genetic enhancement renders lives inauthentic. I will do this by looking at the putative lives of a genetically enhanced child, a genetically enhanced adult and finally a genetically enhanced athlete.

The enhanced child

A child is genetically manipulated in advance of being born. For the purposes of my exposition, it does not matter whether this is at the embryonic or foetal stage. The point is that she has been manipulated in advance of being part of her society. This means she will start her life with a set of traits. She can then do with these as she wishes in concert with her parents and environment generally. This is phenomenologically the same as if she were unenhanced. She can look inside herself and discover her inner self and attributes, and work with this in the context of her society. She may focus on working out who she in fact is, or decide that she wants to be a particular type of person. As she matures, she is increasingly aware of her freedom and therefore responsibility to exert her will rather than merely float through life. She may have better characteristics than if she had not gone through enhancement, but, assuming she was given better versions of positive traits, she is more likely to fulfil her life plans effectively than without enhancement. At worst, she will have more extensive projects open to her and be better placed to realise and engage with them. This is to say that if a person has higher cognitive functioning, they are better positioned to take on either the same projects as those with average intellect more easily or, more importantly, projects which are more complicated. This may be the type of project that is more extensive in scope for example and for a longer period of time. The enhancements do not act as an external artefact like a calculator which takes the task of complex calculations away from the agent, but in fact they *are* the agent. She may choose to try to discover more about herself or build on these enhancements in any number of ways. As it would be the case

in this scenario that the enhanced child simply possesses a better set of initial traits, this will have a bearing on how she interacts with her environment for the remainder of her life. Thus for children, at least an authentic life can be lived whether enhanced or not.

The enhanced adult

Now, I will consider an adult who enhances himself. He could also be considered to have an authentic life in as far as enhancements can be likened to educating himself or, for example, actively making personal character changes by trying to be kinder to others. When I outlined the conception of authenticity that I was using above, I showed that the authentic person might choose the self-discovery or self-creation path. Thus, if changes to the person result from their own deep wishes – presumably from a combination of these two routes, then the person is in fact being authentic. Enhancements are simply another way of achieving that change. Of course, an enhanced adult would necessarily have to be in some way self-reflective to choose either or both paths to being authentic. The existentialist claim is that this is something an agent ought to be aiming towards. My claim is simply that genetic enhancement does not preclude the enhanced adult from being reflective and therefore strive towards authenticity. The parallel with the enhanced child is clear; the enhanced athlete decides to change himself at the genetic level. He will still need to work in his environment to express the change in desirable to ways. It is not simply a case of undergoing an operation and then being able to do something that no human has ever done before.

The enhanced athlete

Finally, I will consider the genetically enhanced athlete. Simply put, this is an athlete who has enhanced herself at the genetic level. She was already an athlete but did not have the genetic inheritance that would allow her to develop herself in the way she desired. She opted to increase her potential for building skeletal muscle as she would like to become adept at lifting weights. Whereas before, no matter how much training she did, because of her (in her eyes) unfavourable genetic inheritance, she could not build enough muscle to lift heavy weights, she was not in a position to do so. The hard work in the gym has not been removed from the process, she is simply now in a better position to realise her current life plan. This is clearly aligned with both the self-discovery conception – her choice to become better at lifting

weights, as well as the self-creation conception – she genetically modified herself so that her target of lifting heavy weights was a feasible one.[403]

The three examples show that the authentic life is entirely compatible with being genetically enhanced. Authenticity as I have presented it can be understood in terms of looking within the self and by reflecting on one's own being, and then deciding how one would like to be. Actually realising this is through engagement with the agent's society. This includes educational and technological aspects of that society, not just the members of that society. It is for this reason that, *contra* Sandel, the athlete can be considered to be acting authentically when they enhance themselves. They have decided to alter themselves using the tools of their society and have undertaken the necessary procedure. Thus, achievements that come from the enhanced agent's actions have an authentic source and are authentic in themselves. The enhanced child finds herself in the position that she simply is the child with enhancements that would make her no different to any other child. The enhanced adult and enhanced athlete merely change their predispositions to certain traits; they both will need to work and interact with their environments to express these traits in desirable ways. This means again that although they have changed themselves in some way, they are still acting authentically. Moreover, to argue otherwise *per* Sandel is actually to ask elite athletes to be specifically inauthentic, which is precisely the charge made by opponents of genetic enhancement in the first place.

If it is the case that the genetically modified athlete's approach and therefore achievements are in fact authentic, the opponent may still have other concerns, which I will now explore.

Other Objections

The foregoing has demonstrated why performances are in fact authentic, but there are other claims about achievements not being relevantly attributed to genetically enhanced athletes. Using the work of the President's Council, I will explore other claims that are such that the genetically modified athlete's achievements are not their own. I will begin by presenting their claims and then discuss 'Personal Identity' a concept that will be fleshed out shortly.

[403] Sandel cannot legitimately argue that she should have realised that lifting weights was not 'the real her' as this is to claim that only the self-discovery conception of authenticity is relevant and as I have argued above, the self-creation conception is also very important.

According to the President's Council on Bioethics, an agent, if they have been genetically modified is:

> …less obviously *himself* and less obviously *human* than his unaltered counterpart...he is also (or increasingly) the passive recipient of outside agents that are at least partly responsible for his achievements[404]

The President's Council are probing the meaning of being involved in competitive sport by trying to look past the *prima facie* clear situation – a human has decided to compete against other humans in a competition necessarily consisting of a set of rules that allows said competition to exist in the first place. They suggest that when evaluating an activity, it really does matter precisely *who* is undertaking that activity. The mere end result that is the product of that expenditure of energy must be looked past. This much I have accepted as being reasonable, at least as far as spectators are concerned.[405] Their concern is that, by being genetically modified, the athlete is not as clearly human as he or she would be otherwise. The athlete is objectifying herself, which I will consider below. The act of being genetically modified means agents are no longer themselves and rather than striving towards a particular goal through purely their own efforts, are disassociating themselves from the process and ending up in a situation where they are not in fact producing proper achievements. The President's Council add:

> In pursing superior athletic (or other) performance, we are cultivating and exercising both our common and our particular gifts, seeking our own individual flourishing. We discipline our gifts through choice and effort in the service of enabling them to shine forth in our own beautiful and splendid activity. We take pleasure in our own performance and achievement. The added bonus of victory and the recognition that follows from it we esteem largely because they confirm that our own embodied excellence has been attained and that our desire for superior performance has been satisfied.[406]

Hence by enhancing ourselves:

> we are not honouring our bodies or cultivating our individual gifts. We are instead, whether we realise it or not, voting with our syringes to have a *different* body, with different native capacities and powers. We are giving ourselves new and foreign gifts, not nature's and not our own...treating ourselves rather as if we were batting machines to be perfected...These acts

[404] PCB 2003 p. 144 Their emphasis
[405] See Section 1.6
[406] PCB 2003 p. 148

> of will do not respect either our own individuality or the dignity of our own embodiment – on which, by the way, our will absolutely depends for its very existence.[407]

There are a number of other ideas that these passages bring out. The authors are concerned that by changing ourselves so quickly, an agent is not really the same person, that is, they are not the actual 'them', the authentic agent, a discontinuity of personal identity, which I will consider shortly. The first issue I will briefly consider is the notion of external assistance. The brevity of treatment is due to the recognition of the nature of modern sport. The problem of people understanding their own bodies will be considered next, and then I will meet the claim that, in undertaking such enhancements, athletes are objectifying themselves, acting not as if they are individuals but using their wills to treat their embodiments as a mere means not ends in themselves that I will consider in 'Self-objectification'. Finally, I will consider whether the virtue of striving is diminished by allowing genetic enhancement as it could be argued that an achievement is not properly described as being worthy if significant effort has not been involved.

The President's Council on Bioethics in their examination of the subject do not comment as to how a biotechnological modification would in fact be any different to, for example, the team doctor prescribing an anti-inflammatory after a particularly vigorous weights session. If it is the case that they see *any* outside assistance as reducing the athlete's role then superficially they are correct; although they do not explain why this demands a negative assessment. However, the current elite sporting paradigm though does not look like it is going to change. It would not be possible to suddenly say to all top level athletes that it is now up to them and them alone to prepare to compete[408]. Moreover, for both the athletes and spectators it is better, though not necessarily fairer, to have such external input as it raises the standard of the competition[409]. So, although what they say is baldly true, even if it were possible to remove external influences it would not be beneficial to do so. The use of genetic enhancement must be seen in the context of elite sport where external assistance is simply part of the fabric of the practice.

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[407] PCB 2003 pp. 148-149

[408] Although there are risks involved when considering 'is' and 'ought', applied ethics must examine actual practices and attempt to determine whether these have any moral bearing on actions related to these practices.

[409] I consider this below in Chapter 5. It is not necessarily farer because often this external assistance is in the form of extensive support systems. Athletes do not have universal access to these systems and some may be hindered by this lack.

Personal Identity

In advance of drawing out the concerns the authors have, I will briefly outline a number of approaches to the concept of personal identity. This will allow me to properly situate their claims. There are two main approaches to personal identity – the numerical and the narrative. The numerical approach asks "whether a being at one time and a being at another time are, despite change, one and the same being".[410] This is distinct from the narrative approach which "asks what is most central and salient in a given person's self-conception".[411] The former can be broken down into criteria that might need to pertain for numerical identity to remain – psychological continuity, somatic or bodily continuity, or a third view; anticriterialism that claims there are not specific criteria for this judgement.[412]

The concern with personal identity that the President's Council are dealing with here is: if a person alters herself in an extreme way in a short amount of time, does she remain the same person she was before she undertook the alteration? In terms of proper achievements, this is important because if it were the case that she was not the same person after the alteration, an opponent of the alteration could justifiably make the claim that the alteration technique should not be allowed as a new person made these achievements, not the original person.

On the numerical approach to person identity, it is clear that after undergoing genetic enhancement, the person remains the same being as she was before the alteration. This does not demand subscription to a particular variant of numerical identity as all three views are fulfilled. The athlete will still have all her memories from before the operation so will have psychological continuity as well as being aware of her body before and after the alteration, thus persisting in the somatic sense. In the numerical sense then it seems that there is a continuity of personal identity. This means that the person before the alteration is the same as the person after the alteration, hence any achievements are properly described as belonging to that person.

[410] DeGrazia 2005 p. 266
[411] DeGrazia 2005 p. 266
[412] Olson 2010 pp. 13-14

Continuity of narrative identity may be more difficult to defend.[413] Given that this "involves an individual's self-conception: her most central values, implicit autobiography, and identifications with particular people, activities, and roles",[414] there is the scope for an enhancement so extreme that a person really does view themselves entirely differently to the point that they no longer see themselves as the same person. I am defending the use of genetic enhancement in sport specifically. I recognised above in Section 4.2 that to enhancements would need to be introduced slowly in order for the practice of sport to remain at a high standard. If this was not the case and there were many one-sided competitions, it would be increasingly difficult to realise internal goods such as the joy of battling an opponent with a similar level of skill. This partly answers why there should no issue about narrative identity (in sport), but only partly. I have also argued elsewhere in Section 4.3 that genetic enhancement would only result in the possibility for further self-development through extensive training. This means that it would necessarily take some time for any changes to actually be apparent. It is not the case that the athlete will turn up the next day with enormous thigh muscles. They will simply be able to achieve enormous thigh muscles by going to the gym every other day, just as those people can who happen to have been born with a genetic predisposition for building large amounts of skeletal muscle. The athlete would still be adding something genuinely hers to any athletic performances, so they again remain their own. It is clearly true that it may be possible to disrupt narrative identity if major changes could happen overnight, but in sport this would simply not be the case.

If it is the case that genetic enhancements do not adversely affect an agent's personal identity, on either conception, then the athlete does in fact clearly remains the same person as she was before she underwent bodily modification. This means that any achievements she makes with her altered body are in fact her own and are worthy of inclusion in the practice of sport. They would not detract from the realisation of internal goods and hence the good consequences associated with these goods would still be produced. This would point back to the existence of certain virtues in the athlete as discussed in Section 1.4. There is another understanding of the athlete that the President's Council draw out at the bodily level: bodily understanding.

[413] DeGrazia 2005 defends many enhancement technologies against the claim that they would disrupt narrative identity.
[414] DeGrazia 2005 p. 266

Bodily Understanding

When people undergo training, they are self-directing their body through repetition that results in improvements which are theirs and are limited by each person's embodiment.[415] Moreover:

> To be a human organism, possessed of a body all of whose activities are mediated by invisible and molecular events, means that our identity is always to some degree independent of all our self-conscious efforts to mold or control it. In important ways, our bodily identity and our bodily capacities are inborn, inherited, and 'given,' and much of what our bodies do thereafter is shaped by processes and ways we do not direct or fully grasp at the level of inner human experience. We cannot make our bodies into just anything we like, no matter how hard we try. As human individuals, we are not simply the beings or persons that we *will* ourselves to be, precisely because we are biological beings – with finite capacities and a finite body, which make having an identity possible in the first place. And yet, if there are limits to what we can do, there are also possibilities. We can actively change our bodies and change ourselves in important ways, precisely by trying, doing, working, and performing the very activities we seek to do better.[416]

The President's Council on Bioethics are saying that although people are not altogether clear about how the very bodies which give them identity operate, they can still alter their embodiment through practice. People are, however, limited by what they start with. Even if it were the case that their parents had had an active rather than passive part in a person's genetic profile, that is, they had designed them to be a particular way, without self genetic modification, it is true to say that people can only work with those phenotypes they happen to exhibit. The concern for opponents of such novel technology arises when people can in fact genetically modify themselves; the point where they can do more with their starting conditions than before. The President's Council see genetic modification is a matter of degree different to training, for example, not kind.[417] Yet this degree is still important to them:

> When we seek superior performance through better training, *the way our body works* and our experience and understanding of *our own body at work* are more closely aligned. With interventions that bypass human experience to work their biological 'magic' directly – from better nutrition to steroids

[415] PCB 2003 p. 130
[416] PCB 2003 p. 130 Their emphasis.
[417] PCB 2003 p. 130

> to genetic muscle enhancements – our silent bodily workings and our conscious agency are more alienated from one another.[418]

They articulate this in more detail thus by drawing the reader's attention:

> …to the difference between perfecting a capacity by using it knowingly and repetitively and perfecting a capacity by means that bear no relation to its use…the difference, *on the plane of human experience and understanding*, between changes to our bodies that do and those that do not proceed through intelligible and self-directed action, capable of being informed by the knowledge of human experience. Thus, though the decision to take anabolic steroids can be said to be, in one sense of the term, a rational choice, it is a choice to alter oneself by submitting oneself to means that are unintelligible to one's own self-understanding and entirely beyond one's control. In contrast with the choice to adopt a better training regimen, it is a calculating act of will to bypass one's own will and intelligibility altogether[419]

Although these passages are rhetorically effectively, they are not ultimately convincing. I have noted elsewhere in this section that genetic enhancement would not remove the requirement for repetitive practice in order to excel. The authors do not explain why genetic enhancement is relevantly different to sleeping properly for example in terms of improving performance by doing something that does not 'bear relation to its use'. Their arguments also fail on other fronts. When an athlete decides to adopt a training plan that involves interval training, for example, she is undertaking a specific approach to their sport. In sports such as swimming or running, interval training results in the athlete training at paces below, at and above the pace they hope to use in a race. The better the athlete, the more likely she is to be able to change pace as required. The training at different paces has various uses in race preparation, such as the higher pace sessions meaning the athlete will feel more comfortable at her chosen race pace. An athlete without much knowledge of physiology can appreciate at a superficial level that she is using her cardio-vascular system at different intensities. However, it is highly unlikely that she would be aware of what exactly is happening at the molecular level when training at different paces. The same would be true of lifting weights.

In the analysis offered by the authors, though this was probably not their intention, the use of genetic enhancement would be of exactly the same kind as non-genetic enhancement because athletes would still be in the same situation with respect to a lack of knowledge about exactly

[418] PCB 2003 p. 130 Their emphasis.
[419] PCB 2003 pp. 146–147 Their emphasis.

how their efforts to enhance performance are helping them. Athletes are unlikely to understand precisely the action of genetic enhancement, nor the effect that training has on their enhanced bodies. This claim about a lack of bodily understanding is in no way an effective argument against use of genetic enhancement simply because it is asking for an unreasonable level of physiological knowledge on the part of the genetically modified athlete. This has not been demanded for every other type of enhancing training that an athlete may undergo, so to place the charge at the foot of this type of enhancement is unjustified.

The athlete is likely to not be aware of his own body in the way the President's Council seem to think he would be in other situations. However, there is another group that may also fail to understand the athlete's body. The concern is such that spectators will not be able to identify with athletes that are genetically modified.[420] There is a romantic notion that the spectator may think that the athlete in front of him could have been him or one of his neighbours, had their lives only been slightly different. This overstates the legitimate identification between the spectator and the athlete. The impressive physiologies of athletes are already entirely disconnected from the reality of body image most spectators have about themselves. This is particularly apparent in sports such as rowing where 195cm tall men are commonplace. Yet even in a sport such as football, where physically, players appear to be athletic but more 'typically built' humans, the spectator only sees the football player's superior spatial and tactical reasoning along with complex motor skills when the player is actually playing the game. This difference when compared to athletes is precisely what is interesting to spectators[421] and genetic enhancement would serve to promote this interest.[422]

The President's Council unreasonably demand complete understanding of this technology whilst there is inconsistently no equivalent call to understand the action of other technologies that may increase performance. Additionally, associations between the bodies of spectators and athletes mischaracterises the appeal of the latter to the former. The reason people spend time and resources watching athletes is precisely because they are impressed by the differences between the two groups. If this was not the case then spectators would just go down to the park each Saturday afternoon.

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[420] Wasserman 2011 pp. 139-140, Agar 2011 pp. 157-158
[421] Agar 2011 p. 157
[422] A conclusion also reached by Tamburrini 2011 p. 116

Self-objectification

Another interpretation of the President's Council is that they may see use of genetic enhancements such that the athlete will be treating himself as a mere means and not an end. Although of course his concern was not about genetic technology, it was Kant who brought this general moral concern to philosophical attention.[423] Athletes who act in this way are viewing inappropriately by becoming a mere vessel for enhancements to achieve superb performances, rather than the performances being simply from their own embodiment. If people treat themselves as an object, they are not treating themselves, in the moral sense, as a person, so the charge goes. This lack of self respect is therefore morally unacceptable.

However, Buchanan helpfully explains why people can still be acting morally when they treat themselves as objects not subjects. He claims that it is necessary to acknowledge that people are not perfectly willed. This is in the sense that will alone is not always enough to realise all the behaviours they desire. Recognising this imperfection in people's wills is to recognise that to some extent they are like objects that are open to externalities that impinge on their wills.[424] Buchanan is drawing to attention the fact that people will not always be able to act in accordance with their wills and that those instances require them to figuratively step outside themselves and consider themselves to be objects, so that their wills can in fact be realised. This management of a far from perfect rationality can be effected using incentives that may be positive or negative. He gives the example of a friend who said he would give money to a religious group whose views he vehemently opposed if he did not produce enough writing each week. The result was that his friend always produced sufficient material. This self-imposition of incentives is to treat the self as an object. There are many cases when such treatment would be permissible and others where such action would in fact be required by morality.[425]

He adds that it cannot be the fact that such self treatment is effected using biomedical means is morally problematic as that would be question begging in the sense that an opponent is asking: would using such techniques be an exhibition of appropriate behaviour toward

[423] Brown 1995 interestingly explores Kant's ideas in relation to doing one's best in sport.
[424] Buchanan 2011 p. 92
[425] Buchanan 2011 p. 91-92

themselves or not?[426] Such biomedical exceptionalism[427] does not illuminate the issue under debate. If it is the case that there are times when it is appropriate to self-objectify, then what is more important is discovering when this is so. Buchanan takes the discussion of self-objectification in another direction[428] but I will discuss the relevance of the sporting context.

An athlete is aware that simply 'turning up' at a high level competition will not be sufficient to secure much in the way of internal goods or for that matter external ones. In order to fully participate, at the top level at least, an athlete will have to dedicate many hours of practice. He wants his body to move in certain ways, even if the realisation of such movements is an arduous process achieved through much time in the gym or on the field. The agent may not enjoy this process *all* the time, and is aware that his will is thus differently directed to other motivations and in so doing, he is objectifying himself in order to realise his goals. That is to say, the athlete may not always feel like punishing his body at the track but rather he might feel like sitting and watching a new DVD. He forces himself to do the training even though at that particular time he is differently inclined. To train or to be trained is in fact to objectify the self. This is not a moral concern precisely because it is bound up with the morally legitimate goal of realisation of internal goods to the practice, including better performances. The fact that it is not a moral concern suggests that it is not a strong claim that the supposedly self-objectifying athlete's performances are not their own. As the foregoing has demonstrated, the fact that the athlete thinks of themselves in this way, *strengthens* the claim that their performances are their own. Additionally, self-objectification seems to be a very important part of realising the internal goods of a practice. This is especially the case when athletes are at the top of their chosen sport because they are likely to have to undertake even more gruelling training sessions that they might not always feel inclined to put themselves through. However, they do so anyway. They are acting appropriately towards themselves and equally their achievements are their own. This leads me to the final concern about achievements not being sourced in the athlete.

[426] Buchanan 2011 p. 93
[427] I take this term from Buchanan 2011
[428] Buchanan 2011 pp. 94–100 Namely, the general case.

Striving

The final issue about results being proper achievements or not is the criticism that that enhanced athletes will gain results too easily and too quickly. The benefit of striving for excellence will be taken out of the process, so in the practice of sport I will explore the relevance of efforts toward results. The concern is that through using genetic technology to quickly solve problems, the agent's willpower will diminish until it fades entirely. There is the implication in the President's Council's writing that users of this novel technology will be able to achieve their goals without character building struggle.[429] A lack of use will atrophy the trait, leaving the agent morally worse off as well as not 'owning' their achievements.

The genetic lottery means that people are not always endowed with precisely the right natural talents that will allow them to excel in their chosen athletic pursuit. In addition, the social lottery means that people may or may not be given the appropriate support by their families and community in order to better reach their goals. This realisation is partly why the public are impressed by those people who 'against the odds' achieve greatness in a particular field. As has been noted by various popular sociology writers, there is no short-cut to being the top of *any* field.[430] An example is Bill Gates, the founder of Microsoft. As a teenager, unusually he had access to computer time where he honed his programming skills, which meant that by the time he reached university, he was many hundreds of hours ahead of his peers.[431] Those who excel may have certain threshold talents that gave them a head start, but it is these talents working in concert with support systems and a great deal of effort,[432] that in fact is what has made them the superior performers they are.

The charge that genetic enhancement undermines striving breaks down into two points. First, is it the case that a genetic enhancement is a quick fix? Second, how does this relate to the performances the possessor of such enhancements is able to produce? The first point is troubled by a lack of empirical evidence, given that the technology is not yet in mainstream use. A comparison with the use of steroids is relevant here. The negative side-effects through excessive use notwithstanding, steroids allow faster recovery after weight-training. This

[429] PCB 2003 pp. 148-149
[430] Syed 2010, Gladwell 2009
[431] Gladwell 2009 p. 50-55 or the time spent practising by The Beatles pp. 47-50
[432] Ten thousand hours of purposeful practice has been suggested. Gladwell 2009 Although this was not Gladwell's figure, he did bring it to the public's attention.

means *more* weight-training can be undertaken and an athlete will therefore gain more effective muscles. Far from being a route to not having to do weight-training, steroids in fact promote more training, and so more striving. Given that the difference between winning and losing is measured in thousandths of a second, athletes are surely unlikely to leave anything to chance and opt for *more* training.

Advocates of the virtues of training and the necessity of this for a favourable analysis of the method used to produce a particular result should then be in favour of allowing this enhancement in sport; that is, the enhancement of muscles through genetic means.[433] The other major genetic enhancement that would change sport is that of an increased number of red blood cells. This too could be manipulated at the genetic level and has been suggested that this would allow endurance athletes to do less training.[434] If striving for its own sake is morally beneficial, then this could be a concern.

Before going into the issues raised by this, there is a preliminary objection that this notion of practice contains an implicit (but unreasonable) assumption that anyone could therefore compete in elite sport. This misunderstands the role of the thousands of hours of purposeful practice. People are necessarily limited by human biology. A thirty year old is unlikely, even if they spent the next ten years of their life honing a particular athletic skill, to find themselves in an Olympic final. This is because the purposeful practice is situational and related to a person's biological state. If the practice is started too late in life, unfortunately, the practice cannot make up for the gradual reduction of biological function that accompanies senescence. Typically those who have made it to the top of their sport have spent the time practising from a young age, when their activity works in concert with their bodily process rather than counter to them.

I will now go back to the claim of genetically modified athletes doing less training because of an enhanced red blood cell count. This is a simplistic view of athletic prowess. Above I noted that it was a large number of hours of *purposeful practice* that was vitally important. It is superficially true that if an athlete has a higher red blood cell count then they could spend fewer hours working to improve their cardio-vascular capacity. However, this overlooks the

[433] Steroids are prohibited for a number of reasons, but notably the negative side effects.
[434] Murray 2009

side of athletic performance that is based on the honing of particular movements. It is not simply enough to have a large lung capacity, sufficient muscle strength and a high red blood cell count. The superior athlete has to hone their motor skills - whether it is in terms of running style, accurately hitting a table tennis ball, or tumble turns in swimming. The point I am making is that a superior engine is not enough, the superior athlete is also better at putting this engine to good use and creating superior performances with it. This side of effort cannot be avoided.

However, striving for results can also be understood in another way. Andrew Stark, using a Kantian model, analyses the difference between striving for a goal and enhancing oneself to reach that goal. His work is actually an exploration of a Kantian approach to the treatment-cure dialectic. As the arguments he offers are directly related to the foregoing and are not reduced in meaning with a substitution of 'genetic enhancement' for 'cure', I shall do so.[435] The relevant term he uses is 'struggle' by which he means: "the most effective action that an individual can take to alter her phenotypic condition, as long as that action necessitates exertion or difficulty".[436] This is important because he thinks only developed traits sourced in struggle are genuine. Those traits the agent happens to be born with or gained through, for example, pharmacological means, are not. These two latter sources of traits are not to be overlooked in that an agent will never form themselves completely via struggle, but if it is available, it should be chosen because it is more genuine.[437]

This means that athletes are only allowed to take on a genetic enhancement if it is not the case that it

> ...will diminish struggle, transferring traits or accomplishments that had been achieved genuinely by the subject, through struggle, to the realm of effortless (hence artificial) attainment.[438]

Stark further refines his Kantian model by saying that enhancements must not reduce any of the struggle that the agent is in the process of undergoing, even if this struggle is not maximal.[439] The result for the athlete is that, as long as there is no reduction in struggling,

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[435] Stark's actual thesis concerns those cases where a cure would in fact count as an enhancement, but his analysis is still relevant here.
[436] Stark 2006 p. 91
[437] Stark 2006 p. 93
[438] Stark 2006 p. 93
[439] Stark 2006 p. 96

they are permitted to be enhanced to the social ideal, from which point the agent will struggle as they did previously.[440]

It is empirical whether or not an athlete would in fact retroactively justify any genetic enhancement by showing at least as much struggle as before. However, I posit that given the competitive mindset set of many athletes, if they now realise that they can actually compete with the best in the world, they are likely to carry on striving for that goal as before – it is just that now they have a more realistic chance of achieving it. At the top level of sport this is not such an uncontroversial psychological claim, but what of other levels? It is conceivable in 'Masters' sports such as swimming for those older than 25 that this would not be the case. This is not to say that older athletes are any less psychologically competitive than younger ones, the issue is that typically they are competing and training in a different context. They are not full-time athletes whose whole life is devoted to the sport; they are working members of society, often with dependents, who happen to still compete. Such a group, and I think this could be the case across many sports, might welcome the chance to ease off the struggle and still reach the same standard through genetic enhancement.[441] On Stark's analysis, they should not be allowed access to such benefits as the struggle would clearly be reduced. Since struggle seems to confer ownership on a person's achievements, this would permit certain genetic enhancements where continued effort was demonstrated.[442] I have shown that the continued striving for excellence within a sport will not be atrophied at the top level at least by the inclusion of genetic enhancement. Practitioners will therefore still realise goods internal to the practice. They will still hone their skills for years on end and be properly engaging with the practice. The relevant virtues will still be involved and therefore the good consequences of such engagement will pertain.

In this section on proper achievements, I have analysed the objection to genetic enhancement based on the suggestion that any performances so gained are not the properly considered to

[440] Stark 2006 p. 97 Where social ideal is understood as "an object of general desire, possessing value which appeals to the mass of the population" Stark 2006 p. 32

[441] Although, as I have argued at multiple points in this thesis, genetic enhancement would not mean a free-ride; here I am simply suggesting that if it could take away some it might be taken advantage of. Masters sport is different to top level sport because many practitioners were once elite athletes but can no longer compete at that level. They may already have expert skills, but are battling reduced functioning due to old age.

[442] My claim is that genetic enhancement would still require virtuous effort; Stark's claim is that genetic enhancement would only be permitted if this effort was instantiated.

be sourced in the agent. On this view, agents are not deserving of praise because it was not really them who achieved the result. On two conceptions of authenticity – self-discovery and self-creation – enhancement did not preclude authentic and therefore self-owned actions. On neither numerical nor narrative conceptions of personal identity was the athlete removed from producing better performances. The same was true when the target was that of the athlete failing to understand how genetic enhancement would affect his body. This was no difference in kind to any other form of training at the level of knowledge demanded by proponents of this argument. I showed that athletes could legitimately view themselves as mere means, and that this was aligned with the life of the elite athlete. In fact, the athlete needed to do this in order to maintain the volume of training necessary to perform at the top level. Thus, again, the charge failed to show that the athlete did not produce her own performances. Finally, I considered striving. This was not precluded from the practice if genetic enhancement were permitted – rather it allowed more people to push themselves towards the goal of being top athletes. The struggle remained and once more the achievements belonged to the enhanced athletes. If it were the case that the charges had been justified, this would have been particularly problematic for my argument that there are ethical genetic enhancements to be included in sport.

4.4 Spirit of Sport

The previous section showed that the genetically modified athlete's performances are in fact deserving of approbation. This section will consider the suggestion that the genetic enhancement of athletes is against the 'Spirit of Sport'. This can be understood to be the *telos* of sport or what sport's essence is. Understandably when trying to determine the so-called *essence* of a social practice, there are competing conceptions. It will be shown that even on the conceptions offered by the WADA, the regulatory body who have ruled out genetic enhancement in sport, the technology would not in fact be contrary to them.

Broad conception of spirit

Given its prominence as a regulatory body, I will use the WADA's conception of the spirit of sport:

> The spirit of sport is the celebration of the human spirit, body and mind, and is characterized by the following values:

- Ethics, fair play and honesty
- Health
- Excellence in performance
- Character and education
- Fun and joy
- Teamwork
- Dedication and commitment
- Respect for rules and laws
- Respect for self and other Participants
- Courage
- Community and solidarity[443]

This excerpt is saying that in essence, sport is a way of celebrating being human. Presumably, the authors think that if the above list of values is adhered to and promoted, such a celebration will be most effectively achieved. The list is broad enough that it provides a far-reaching conception that covers many, if not all, aspects of sport that might be considered part of its essence. Its lack of detail also means that it is harder to interpret when hard cases are brought to bear. Given the prominence of its authors in the world of sport, this is certainly practical, from their point or view, as it allows a great deal more interpretation when novel problems arise. I will consider genetic enhancements and compare them to the list of values that embody this celebration of being human, and determine whether or not genetic enhancement is in fact contrary to the spirit of sport on the WADA's broad offering.

The first set of values, 'Ethics, fair play and honesty', make up much of my thesis. I have already considered fairness in Section 4.2 above. Honesty would not be breached if genetic enhancement were conducted openly, and without knowing the nature of the ethical system they are citing, it is harder to determine what they mean by this. There is certainly not one way of living a human life that is accepted and followed by many or even most of the world's sporting population, so this part of the conception is not especially illuminating.

[443] WADA 2009 p. 14

The 'Health' of athletes has long been a concern of those involved in sport. In Section 4.2, I discussed issues surrounding health and enhancements and pointed to the fact that in themselves a variety of sports are both directly and indirectly dangerous activities. However, it is not a controversial claim that many of the substances on the WADA prohibited list carry with them attendant health risks, particularly when used in excess. Given the current state of genetic technology, it is unlikely that it could be used by athletes until it had been deemed safe by relevant medical organisations. Of course, this would not mean some athletes would not misuse it, but that in itself cannot be a reason for banning it. Even water taken in excess can cause extreme health problems[444] and this commonly occurs in the sporting context.[445] Moreover, genetic enhancement may increase athlete health generally. This might be through the strengthening of the immune response or the improved removal of toxic metabolites.

The next value, 'Excellence in performance', could in fact be promoted by genetic enhancement by allowing more people to produce superior results. I discuss this at length in Section 4.3 and Chapter 5. This is also the case for the first part of the value of 'Character and education'. In terms of virtue consequentialism, certain traits must be in place in order to realise the beneficial consequences linked to the promotion of internal goods. The second is harder to determine but in as much as genetic enhancement becomes another part of modern elite sport, then if sport without it allows the promotion of education, then there is no reason to expect that genetic enhancement specifically would detract from this.

The next two values, 'Fun and joy' and 'Teamwork', are similar and pose no significant issues for the inclusion of genetic enhancement. I have demonstrated elsewhere in this work – this is also the case for "Dedication and commitment' – that genetic enhancement would not take this positive aspect of sporting practice away.[446] However, 'Respect for rules and laws' does pose more of a problem. Currently genetic enhancement is on the prohibited list, so necessarily to use it would not be in accordance with the WADA's conception of the spirit of sport. The aim of this work is to show that the WADA were premature in adding genetic enhancement to the prohibited list. It is hoped that over the coming years the situation will change.

[444] Hyponatremia can result in a coma. See National Institutes of Health 2012.
[445] Mass participation events such as large marathons, for example, present instances of over-hydration.
[446] Section 4.3.

I have considered the first part of 'Respect for self and other participants' in Section 4.3. The second half has been examined in Section 4.2. The virtue of 'Courage' would not be lessened through genetic enhancement if I am correct in saying that elite level athletes will continue to push themselves as before.[447] Finally, 'Community and Solidarity' are in fact linked to respect for other participants as without this in place, they are not practical propositions. MacIntyre himself noted that certain virtues would need to be place for participants to successfully realise internal goods. His suggestions together form a picture of respect for others involved[448] in the practice. This too, then has been dealt with in other parts of this thesis. The broad conception of the spirit of sport may appear to be a straw man, easily knocked down by the arguments I have already made. This is unintentional – it has been included because the regulatory body, who I maintain have acted without adequate justification, did so by considering the board conception as reason enough to preclude genetic enhancement. However, the WADA have offered a more interesting conception of the spirit of sport that I will now tackle.

Narrow conception of spirit

The foregoing suggests that baldly, there is no reason apart from the current inclusion on the prohibited list to forego genetic enhancement in sport, allowing for the arguments in the rest of this thesis, but the WADA has elsewhere have developed its conception:

> The spirit of sport, as we understand it, celebrates natural talents and their virtuous perfection. We say 'virtuous' in this context because virtues are qualities of character admirable in themselves, the qualities that outstanding athletes develop and embody in their quest for excellent performance. Some means we respect and want athletes to employ exemplify aspects of character that we admire in people more generally, such as fortitude, dedication, self-discipline, the willingness to suffer in the service of a worthy cause, courage, and strategic wisdom...So, for any particular means for enhancing performance...the crucial test will be whether it supports or detracts from sport as the expression of natural talents and their virtuous perfection.[449]

Juengst clarifies this as follows:

[447] To whom the list is mainly aimed.
[448] Justice, honesty and courage.
[449] WADA 2009 Note Cited in Juengst 2009 p. 195

> Sport is concerned with celebrating differences in natural talents and the virtues that can be displayed in attempts to differentiate one's own talents even further. The virtues that sport celebrates are socially admirable traits in themselves, and their promotion is what gives sport its social value as a practice. However, within the practice, the virtues are instrumental...to the 'perfection' of the athlete's natural talents....[450]

He goes on to note the work of Loland: "The characteristic, structural goal of sports competitions is to measure, compare, and rank competitors according to performance of relevant skills within the framework of the rules"[451] and although he has concerns about how ranking in sport can reinforce morally dubious social hierarchies[452] realises that within sport this is inevitable. He then draws out the WADA wording involving 'natural talents' that he understands to be those talents people are born with and therefore have no control over.[453] Since

> Sport creates a system of values, virtues, and practices designed to hierarchically grade people in terms of their (virtuously perfected) inherited traits and glorify the best specimens as champions...biomedical interventions at the genetic level would miss the point of the sport if this view is correct, because gene doping would undermine the ability of sport to distinguish those who passively inherited their talents from their progenitors from those who actively acquired them from their physicians...Gene doping is wrong for athletes to pursue and sports medicine to provide because it compromises the ability of sport to segregate and elevate genetically advantaged athletes from their disadvantaged competitors, which is a key element of the spirit of sport and one of the intrinsic values of the enterprise[454]

Loland's conception is uncontroversial and makes up at least one aspect of the spirit of sport – if there are going to be contests, then they will result in a final ranking of those involved. Unlike Loland's ideas, those of the WADA and Juengst are certainly more provocative. It seems that they are arguing that people should only be concerned with the results of the genetic and social lotteries. This means the genome people happen to be born with and the society they happen to be brought up in. If this is disrupted by undertaking genetic enhancement, people are actively going against the spirit of sport as they may change the results that such adherence would offer.

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[450] Juengst 2009 p. 195
[451] Loland 2009 p. 162
[452] Juengst 2009 p. 197
[453] Juengst 2009 p. 198
[454] Juengst 2009 pp. 198-199

I have dealt elsewhere with the ideas that genetic enhancement would not be a 'free-ride' to the top of elite sport and that it would not preclude extensive effort on the part of the enhanced athlete.[455] My concern here is with the insistence that competitors should be ranked on a random process. Although it may seem trivially obvious I will note that people cannot help who they are born to and in which society this happens to be. The WADA and Juengst are, in effect, arguing that this is all that should count in sport. Earlier in this work I considered various conceptions of the natural and their implications, if any, for normative discourse. The use that the WADA are employing is far simpler; it is simply that of a person's genetic inheritance. This, as Juengst himself points out is in line with Sandel's concerns about going against the 'given'.[456] I have argued at length in this thesis about why that is not an argument against genetic enhancement *per se*, so here I will consider the claim in relation to sport.

It is not at all clear why the WADA would cling to the notion of a person's contingent genetic traits and upbringing as the basis for their conception of the spirit of sport. This contingency is the source of a great deal of inequality in the world. I am not suggesting that sport would be any more successful at managing this inequality than successive societal structures over millennia, but it *is* a concern that they think it is morally appropriate to use such inequality as the basis for the essence of sport. Moreover, it appears as though they think it should in fact be celebrated and kept no matter what, rather than reflected on and altered if at all possible.

If genetic enhancement became commonplace, then sport would still be able to successfully rank competitors. Athletes may make up for a lack of height via genetic means for example and then hone their dunking skills, so as to rise to the top of elite basketball. Arguably this is more laudable than simply having been born to tall parents who took an interest in one's sporting future. The stifling acceptance of things as they are runs counter to the way sport as a practice encourages athletes to actually approach it. It is expected that through genetic and social variation, different athletes will take on the demands of their chosen sport in different ways. The tall may not worry so much about leg power in basketball, because they are already nearer the net, but may have to work on ball control and so on. What matters is that

[455] Section 4.3.
[456] Juengst 2009 p. 198 See my Section 3.1.

they compete fairly. How they got there is not relevant except in as far as the media can find some sort of back story about a particular athlete.

There are certainly other conceptions of the so-called 'spirit of sport', but none are as broad as those offered by the WADA.[457] I have examined their articulation in addition to the defence of it offered by Juengst. I found that apart from the contingent issue of genetic enhancement being currently against the rules, their suggestion that such actions undermine the ranking of athletes based on passively inherited talents was lacking on egalitarian grounds. I agree with Savulescu et al when they say: "Far from being against the spirit of sport, biological manipulation embodies the human spirit – the capacity to improve ourselves on the basis of reason and judgement. When we exercise our reason, we do what only humans do"[458]. Thus, even if there is a coherent spirit of sport, genetic enhancement would not appear to run counter to it as the rest of this thesis shows. So, once more, genetic enhancement does not have harmful consequences, and may in fact have beneficial ones; the further realisation of the internal goods of a practice while not removing the necessity for certain virtues to be in place in practitioners.

Conclusion

In this chapter, I have considered the last set of objections to genetic enhancement – those based on aspects of the social practice of sport itself. I showed that while there might be health issues for those that are early adopters of the technology, if it were made permissible, athletes are less likely to be harmed by it. The positive consequences found throughout this work certainly point towards this. The treatment-enhancement dichotomy was found to lack any moral relevance in sport as it did not show that enhancements would preclude the appropriate pursuit of goods internal to the practice.

I then examined competing conceptions of fairness. In those instances where genetic enhancement appeared to exacerbate unfairness, I suggested that sufficient regulatory oversight and gradual inclusion would help make the practice fairer. Moreover, this step would go towards managing the pervasive problems of domination by support systems. The section on proper achievements showed that in all claims that the genetically enhanced

[457] Fraleigh 1984, Simon 1991, Morgan 1994, Loland 2003
[458] Savulescu et al 2004 p. 667

athlete's results were not their own were in fact inaccurate. Superior performances would emanate from the genetically enhanced and deservedly so as there are no simple methods for getting to the top of any practice.

I then explored whether or not use of the novel technology would be contrary to the essence or spirit of sport. Even on a broad conception issued by the regulatory institution that decreed genetic enhancement to be against the rules, it did not seem that genetic enhancement would undermine any of the aspects of sport that are considered important. Lastly, I showed through consideration of a narrow conception of the essence of sport how adherence to the genetic and social lotteries was not a morally appropriate approach to the social practice. I then demonstrated that genetic enhancement would have a positive effect on this ethically dubious characterisation of ranking in sport.

Having responded to all these objections, I will now go on to positively justify the inclusion of genetic enhancement in sport.

Chapter 5: Arguments in favour of genetic enhancement in sport

Introduction

The work of the last three chapters was to meet objections to genetic enhancement technology. This has been achieved in three ways. The first set of objections were minor and considered the technology itself to be morally dubious or to be too risky to utilise. The second set of objections viewed its use as having negative ramifications for society and its members, while the third set of objections claimed that sport will be negatively affected by its inclusion. These points have raised a great number of issues about the use of the technology and its role in sport. Having shown that these arguments do not preclude genetic enhancement in sport, I will now approach the issue in a positive way and show how genetic enhancement will have beneficial consequences for the practice. I will begin with a brief consideration of 'Access' to enhancement technology before exploring the positive ramifications for 'Psychological Enhancements in Sport' and 'Physical Enhancements'. The latter will be broken down into 'Raw Performance' and 'Wider Participation'.

5.1 Access

As genetic enhancement technology is brought to the market, initially in the medical world, there will be associated improvements in the health of those members of society that have access to it. It is to be expected that it will be some time before even a relevant approximation to universal access is possible. This is the model for most novel technologies in any sphere of human experience. This new technology is one way that the general health of society will continue to improve; even if this is only in terms of the management of disease rather than lifestyle linked problems such as obesity. As sport is a social practice and takes its participants from wider society, if people in that society are healthier, athletes will have a better starting point than they would otherwise. The point being: once they become athletes people are generally healthier than the rest of the population, however with genetic enhancement technology, their base level of health will also be higher.

Whilst this is a positive consequence of the technology, the question remains about access. Initially it is likely that only those with considerable resources will be able to use the technology, but the level of resources necessary would be expected to lower over time. Although I have already made practical suggestions about the gradual inclusion of the

technology as each technique becomes safe, it is worth remembering that at the elite level, questions of access are somewhat less pressing than in society in general. One of the positive aspects to having powerful support systems involved is that they will ensure that their charges have use of whatever technology is available. This may, however, mean that those who are trying to break into the upper echelons of their sport will struggle as the already supported athletes' performance accelerate away with yet more assistance.[459] If it seems to be the case that genetic enhancement exacerbates this problem, then the WADA or a similar institution would be in a position to determine which innovations are permissible and start with those that are not as resource heavy. This is the reason in Formula 1 motor-racing there are limitations on the design of the cars. [460] It is certainly possible to make faster cars, but those involved with the sport do not want the victory to simply be a case of whichever support system has the most resources.

5.2 Psychological Enhancements in Sport

In the future, it may be possible to manipulate the human genome in order to make changes to a person's psychological make-up. If this sort of innovation is made use of, there might be claims that the agent before the operation is not the same as the agent after. I considered issues related to the preservation or not of personal identity in Section 4.3 and found that even if identity was not preserved, this was not a moral reason for not undergoing such an operation.[461]

There are a great number of psychological factors that contribute to superior athletic performance. Some of these include: willpower, determination, and poise under pressure. The latter can be effected pharmacologically using beta-blockers, but the others are less easily manipulated. There is as yet no 'drug for willpower'. Given that these psychological characteristics are a feature of humans in differing degrees, it is to be expected that there is a genetic component to such traits. The complex nature of the development of human psychological traits mean that these are polygenic and depend a great deal on the

[459] Gladwell 2009 p. 33 discusses this as one of the reasons having a fixed age starting point in children's sport arbitrarily helps those born at the beginning of the calendar year. His suggestion is to take cohorts in month to four month intervals.
[460] Formula 1 2012
[461] Presumably the person who undergoes such an operation, even quite an extreme one, wants to become the person that the operation will make them become. However, the relevance to sport does not rest on the preservation of personal identity.

environment they are expressed in.[462] That is to say there is unlikely to be a 'gene for willpower' for example. Although it is not clear how polygenic traits would be manipulated and also the extent that they need to be developed through interaction with the environment, I will consider a thought experiment, that is, that they *can* in fact be increased.

In order to become adept at any sporting endeavour, a great deal of repetitive practice is necessary. Some athletes, typically those who have reached the top end of their sport, find this repetitive practice something they can endure without too many psychological issues. Now, consider an athlete who has considerable technical skills but knows they have a weakness using these skills towards the end of a competition. They know that in order to build muscular endurance, they must spend more time going through the actions involved in their sport. They sometimes find that although they enjoy honing these bodily movements, they struggle to keep doing so for the length of time that would be necessary to keep performing throughout a competition.

An opponent of genetic enhancement might suggest that unfortunately the athlete is just going to have to keep trying to better their performance themselves. Narrowly conceived, this is an understandable reaction, yet it misses an important point about the development of psychological traits. Top athletes have usually won both the genetic *and* social lotteries. It is the latter component that is vital in this example. The athlete who lacks willpower, because they were never encouraged to persevere as they were growing up, is likely to struggle to keep going when their body resents what it is being put through. They are unlikely to persevere or show reliance in the face of adversity. Arguably, if it had been the case that the genetic component of such a trait was increased, this lack of encouragement would not have been so limiting. The point is that the athlete is trying to overcome a deficiency for which they are in theory not responsible.

Yet, this is a problem for enhancements in general and those in sport. An athlete is not responsible for their genetic makeup, or the society they are born into. The extent that this can feasibly be compensated for is probably not possible to determine because, apart from the fact that a person is formed by the interaction of the antecedent circumstances and their genetic profile, not much more detail is yet known about this interaction. This makes any

[462] Barnes and Dupré 2008 pp. 141-171

metric-based considerations impossible, but there is another avenue. If the athlete above went to evening classes on, for example, 'self-motivation techniques in the face of adverse physical situations' then, presumably their behaviour would be applauded. They are spending time and energy trying to correct a deficiency in themselves that is hindering their life projects being realised. I have already countered arguments that genetic enhancement is different in kind to this type of self-improvement. Presumably such an operation would take some time and require rehabilitation after the event. They would probably need psychological rehabilitation in the same way a physiotherapists approach the return to functioning of the body after an operation. The operation would not make the athlete immediately iron-willed, just more likely to be able to direct his will in the face of adversity. The struggle would continue as before, but now the athlete has a better chance at success this time. The athlete's results would still be their own in the sense that it would be appropriate to apportion praise for them.[463]

If the result is genuine and the method is not morally dubious then the WADA are not justified in ruling out such psychological enhancements from competitions. Athletes would still be showing that they wanted to develop themselves and be involved with the practice, they just realise that while they may have certain physical attributes that makes this a feasible prospect, their psychological 'failings' are holding them back from superior performances. By engaging with genetic technology in this way they are opening up the opportunity for a greater engagement with their chosen practice. This in turn means that they are more likely to be a position to realise its internal goods. The majority of good consequences in relation to sport stem from the engagement with the practice and the realisation of its internal goods. This thought experiment demonstrates that it would be in line with virtue consequentialist thinking to allow the inclusion of genetic psychological enhancements. I will leave the thought experiment at this point, as, although I have demonstrated how the inclusion of psychological enhancements would be justified, medical science is a long way from realising them at the genetic level.

[463] See Section 4.3.

5.3 Physical Enhancements

Although the psychological component of an effective performance is undeniable, it is not likely that these will be able to be augmented at the genetic level for some time. However, the same is not true of physical enhancements. As an example, in the medical setting, work has been undertaken that aims to genetically increase muscle mass.[464] I will assume that useful physical enhancements will become feasible in the near future. Assuming also that such enhancements are readily available to those who choose to use them, the practice of sport will certainly change. The fact that social practices change over time is not a controversial claim. It is not a justifiable stance to want something to remain static simply for the sake of avoiding change because this implies that the *status quo* provides the best state of affairs possible. The adherent of such a view must point to something valuable about the way a practice currently is or was to defend their position.

Precisely such a defence of something valuable that was deemed to have been lost as the practice changed, is found in competitive swimming. During the World Championships in Rome in 2009 there was a slew of world records.[465] These were achieved by a change in the practice, namely, the use of a particular type of swimming suit that compressed swimmers into a shape more suitable for moving through water, as well as making them more buoyant. It was then decided that these suits were taking too much of the skill and work of swimming away from the swimmers with the evidence being the remarkable number of world records to fall, and their use was then banned in January 2010. The practice *changed* with the arrival of the novel technology and then returned; another *change* back to the previous situation when only textile swimming costumes were allowed. This shows the flexibility of a practice. Swimming could have decided to allow the suits and the practice would have turned into a race for technical innovation rather than training innovation. The latter was deemed better for the sport, hence the alteration of the rules. Something that was deemed valuable was in fact found *and* returned to.

This draws out a pertinent issue for the inclusion of genetic enhancement. It is entirely expected that practices change over time. Just because at this stage such enhancements are

[464] Juth 2011
[465] Partridge 2011

not permitted does not mean that the sports could not change their approach in the future. Sports may decide that they could be improved by testing the inclusion of genetically enhanced athletes. Rather than ignoring medical and technological innovations, sports may consider a period where such methods are permitted. This would be a more pragmatic approach than simply a knee-jerk refusal to even try the technology. Like the practice of swimming, sports could return to a pre-enhancement state by subsequently removing its permissibility from their rule books. Admittedly this might be more difficult than stating that certain design standards must be met for a swimsuit, particularly if genetic enhancements are prevalent in society. Yet, if they *were* prevalent, then it is even more likely that sports practices would ratify their inclusion. This is because part of the spectacle of sports for the external spectators is seeing people who can perform feats that the spectator cannot. I discuss this observation further in Section 1.6.

In Section 4.2, I discuss the issue of different system strengths. System strength is the pool of resources available to each athlete or team. This may be at the level of the club they are a member of, or the nation they belong to. There are many examples of races for technological superiority in sport, the design of golf clubs for example,[466] and an opponent of novel genetic technology may argue that its advent will shift this race to that field rather than human artefacts. In most sports there are limitations on what technological innovations can be included,[467] but the understandable concern is that where efforts were once made by support systems and equipment manufacturers to give competitors the edge, this will now take place within the field of human physiology. Where once it was the case of trying to find a way to make a golf club more accurate and stay within the rules of the game, it might be easier to genetically alter athletes so they are in fact more accurate. The example of Tiger Woods undergoing laser eye surgery to give improve his vision is archetypal.[468] As should have been clear in the foregoing arguments as well as those later in this section, the complex nature of sporting performances means that there is simply not one way to be better than anyone else. It is expected that genetic enhancement will be a part of the 'arms-race' that is modern elite sport, just in the same way companies offering products to help the energy intake of athletes

[466] Brenkus 2010 pp. 101-128
[467] Boxing, shot put, discus and high jump are also examples.
[468] Sandel 2007 p. 30 Clearly this is not genetic enhancement and it should be noted that Woods had poor vision before the surgery.

proliferate. I have already explained how to limit the negative impact of one system dominating the field in Section 4.2. Moreover, if it is the case that these enhancements do allow a better interaction with the practice for all involved then there will be increased realisation of internal goods and so better consequences too. Genetic enhancements with suitable regulatory oversight will not exacerbate the race for technological innovation in modern sport; that race simply *is* part of modern sport. It merely allows another avenue to be explored in pursuit of athletic excellence.

The current practice of sport favours contingency a great deal. This is evidenced in the WADA's declaration above, in Section 4.5 being based on the ranking of *natural* traits. In Section 2.1 I explained that the natural does not always align with the good. The authors of the WADA declaration seem to be overlooking the social component that results in great athletes. That is, having certain physical characteristics is not sufficient to excel in a particular sport. Someone who is 195cm tall will not simply be a good rower; they will need to develop their cardio-vascular system and motor control through hours of practice. This also necessitates a conducive social situation, for example, proximity to a river or lake and supportive parents and educational institution. However, that is not an issue at this point. Using genetic technology would not be a case of simply turning up for an operation and then magically winning an Olympic gold medal; otherwise everyone would do it and the overall situation would not change. It is not a case of designing a humanoid robot that is indistinguishable from human competitors. It is the very multifarious factors that make up an athletic performance that mean the situation is far more complicated than this. Once the idea of waving a magic genetic wand is cleared aside, the route is clear for an analysis of the positive reasons for including physical genetic enhancements in sport.

Raw performance

The first aspect of physical enhancement is that of simply raising the performance levels of those involved in the practice – raw performance. If Loland's suggestion for the good, fair game is correct,[469] that is, the game will be better the closer in skill and extent of that skill of those playing, then for both those directly involved in the competition and those watching it, there are major gains to be made in terms of increasing the performances of all those in the

[469] Considered also in Section 1.6.

former group.[470] Presumably the agent who has a strengthened cardio-vascular system and a more efficient skeletal muscular response would be better off given suitable training than someone who was not in possession of these physical characteristics. A person who enhances their fine motor skills as well as the engine with which to use them, will presumably be able to throw themselves into the competition to a greater extent if their opponent has also increased these physical aspects of their performance. The latter is important, because, if this were not the case then the first athlete or team would simply win the competition with minimal effort. On the other hand, having better skills may result in their frustration at times. When a highly skilled player meets an opponent with mediocre capabilities, the former may win with ease and feel that they have not had the opportunity to fully utilise their skills as they had no need to do so. The possibility of the increased involvement in the practice makes this sort of bad consequence worthwhile.

As it is not the case that there is simply one way to be a great tennis player, footballer or dragon boater, then the increase in physical attributes would open up new avenues of competition. In competitions where tactical input is key, such as ball sports, the increase in the range of physical capacities would add to the level of competition as the players would have to work out new methods to overcome their equally physically well-equipped opponents. They would have to spend time forming different strategies based on, for example, the reduced times for a basketball player to run the length of the court. In rugby, players currently look for open ground while putting the other team under pressure in the hope that they make a mistake. These mistakes usually occur because the other team has become less organised and tired. If the opposition is less likely to tire, because of all the extra training they have been able to do because of genetic enhancement, then more open and aggressive rugby will be required to win. Teams might try to keep the ball in hand as if they lose possession, they will have to have a period of defence. Another ploy might be to send the enormous forwards by the middle of the pitch, not tiring or making so many mistakes, than let the backs into play once the opposition has been distracted by the charging forwards. In cricket, if bowlers are faster and fielders are more reliable, the fielding team might position itself more aggressively, which would mean that the batters would find it harder to score

[470] This is not to say because it would be better that everyone should be forced to undergo enhancement. Rather, the assumption is that those engaged in the practice would want to raise their performance levels.

unless they took greater risks. They would have to try for a boundary rather looking for single runs where the fielders could more easily stump them out. The challenge of the opposition, provided they too have access to enhancements would heighten as the extent of physical enhancement increases. The spectacle would in fact, *contra* Sandel, positively increase.[471]

Sandel's concern with genetic enhancement is that spectators would simply watch an enormous baseball player hit balls out of the field in the same way that people used to attend 'freak-shows' at the circus or in travelling fairs.[472] His description suggests his use of the word 'spectacle' is meant only in a negative sense. This is a mischaracterisation in that there are many activities that are spectacular in the positive sense – the Olympic Games for example. There are of course *mere* spectacles in modern society, such as minor celebrities eating unpleasant looking creatures in the jungle. This is a spectacle in a less positive light because these people are unlikely to engage in these activities without financial inducement and the 'fame' garnered from so doing. This is in stark contrast with the majority of sport that would be performed whether or not there is anyone watching, and does not include any remuneration and in fact can be financially taxing simply to undertake. This is the situation that amateur athletes face whenever they do their chosen sport.

The basketball scenario above shows one way in which the internal goods of the practice of sport will be extended by the inclusion of genetic enhancement. The opponent may suggest that all that will happen is that the advent of genetic enhancement will simply result in a physiological arms-race that cannot be won. I will return to this shortly. The increasing size of athletes at the top level of many sports has been recognised.[473] Although there are social factors such as better standards of living, including diets, the increasing size of athletes is manifested because it is clear that in any competition where simply being larger is beneficial, support systems will go in search of an even bigger blocker, for example, in American Football. Another example is found within rowing. The actor Hugh Laurie rowed for Oxford in the Boat Race in 1980. Anyone familiar with his physical appearance cannot help compare it with Sir Matthew Pinsent who competed in the same race 10 years later. In rowing there is

[471] Sandel 2007 p. 12
[472] Bogdan 1990
[473] Christensen 2011

a system in the UK that specifically looks for certain physical characteristics in teenagers and young adults as these are linked to superior performances.[474]

I have included the above examples to illustrate the claim that the current sporting paradigm already includes what amounts to a physiological arms race. This is not to say that this existence either justifies a continuance of this arms-race nor that the situation is beneficial. There are two ways to manage the inclusion of genetic technology with respect to this problem. The first is that with the ever more powerful athletes it may be necessary to change the parameters of the competition they are undertaking. Raising the hoop in basketball for example would be one way of realising this. It would stop so many athletes being able to perform the slam-dunk, and once again open up the game to more extensive tactical play.[475] The notion of altering the challenge involved in a competition is commensurate with both the acceptance that practices change, as well as a way to preserve other aspects of the practice that participants find valuable. The second is the suggestion that by allowing genetic enhancements, the arms-race may be decisively dissolved. If it was the case that enhancing technology was universally or close to universally available, then support systems could not simply opt for the development of ever larger athletes in order to beat their opponents. Recognising that this is only one factor of a superior performance, they would have to explore other methods of performance enhancement. Again, this might be along the lines of tactical developments.

The genetic innovation, by reducing the search for people with out of the ordinary physiologies,[476] will act to deepen the possible internal goods realisable within practices where their inclusion is permitted. This claim is based on an understanding of engagement with a social practice. As MacIntyre explained, only those who have fully immersed themselves in the practice are able to judge standards within that practice.[477] I am suggesting that if it is no longer the case that support systems are looking for another giant, then efforts will be directed toward a deeper understanding of the practice itself. This ties in with the general recognition that at the top level, competitors will always try to find an edge over their opponents. If this edge could not be found at all, or at least not found as easily (because

[474] British Rowing 2011
[475] Brenkus 2011 pp. 154-158
[476] By this I mean support systems expending their efforts on looking for ever larger people to turn into athletes.
[477] MacIntyre 2011 pp. 188-189

anyone with access to the technology could choose well built athletes and then increase their size through its application and training) then other methods of performance enhancement would have to be found. As the permitted methods are defined by the practice, for example certain types of tackling in rugby, then this deeper understanding will come from agents or support systems considering their chosen practice more attentively, to discern where a new advantage could be found. For example, could a more effective freestyle stroke in swimming be developed? Perhaps taking the catch of the stroke at a different angle when swimming would result in a greater surface area in contact with the water. In turn, with sufficient strength, this might allow for more effective propulsion past the water.

Whilst this suggestion of a deeper understanding has positive ramifications for ball sports, the situation may not be the same in record sports, my example from swimming notwithstanding. Record sports are those where athletes, for example, cover a set distance in as short a time as possible by running, swimming or cycling and so on. Or, they may have to lift or project an object of specified mass and form. Although there have been suggestions about the 'perfect' athletes in many such sports[478] who will gain the ultimate result, there is still a great deal to be gained by having a certain body shape for certain sports. It is the very recognition of the fact certain physical attributes promote superior performances that has resulted in support systems looking for athletes so formed for possible entry into national squad training programmes. I will explore concerns about targeting very young future athletes below in 'Wider Participation'; at this point I am discussing physiological form and genetic enhancements.

At first sight it appears that here there *is* an instantiation of zero-sum gain by allowing genetic enhancement. If all athletes can simply make themselves larger and better-muscled, then there is no possible positional advantage. However, there are a number of reasons why athletes may still use genetic enhancements that would still be positive for the practice. The first, which I have already alluded to above, is that there are various ways, for example, of being a good runner. Compare the styles of Paula Radcliffe and Haile Gebreselassie, for

[478] Brenkus 2011

example.[479] The predilection for the spectacle of watching athletes race at the top level suggests that even with heightened performances across the board, people would still want to watch. Athletes may take 7 seconds rather than 9 for the 100m. There would still be limits to the extent to which the human form can be changed, yet one of the valuable aspects of the practice – the speed of competitors – would still be a major feature. The athletes would still be producing performances, just at a higher level. Their involvement with the practice's internal goods would remain static with respect to each other because there is no positional advantage if every athlete has access to enhancement, however, their *individual* engagement is likely to increase. They will have to consider form of movement, nutrition and training techniques for example to an even greater extent. As the engagement with the practice in terms of realising its internal goods is a measure of morally appropriate behaviour, because of the production of good consequences, then genetic enhancement, even in record sports, is justified. I have considered the benefits of genetically enhanced raw performance, but there is another aspect of physical enhancement that is relevant – that of the possibility of increased participation.

Wider Participation

The arguments above should not be taken to mean that I am suggesting that the physicality should be taken out of the practice of sport. That would be a bizarre claim, given that as much of what is appreciated about sport, as the President's Council on Bioethics recognised,[480] is the actions made possible by a particular embodiment. Rather, it is the negative aspect of simply finding larger and larger athletes that should be removed from the practice. There are additional positive ramifications. If more people are able to engage at a higher level with a practice, then presumably, there will be more instantiations of internal goods being realised.

I have already referred to the health of the athletes going into the competition. Presumably this would carry over into the correction of any injuries they may sustain while involved in the practice, or (going one step further) into preventative techniques. This might be the management of the iliotibial band which can come under stress from, for example, extensive

[479] Gebreselassie's running technique could be described as a model for all marathon runners to aspire to. Radcliffe on the other hand rolls her head and has a distinctive gait which may not be as good as that of Gebreselassie. However, they both have or hold world marathon records.
[480] PCB 2003 p. 143

running and cycling. If this were protected in advance, then athletes would be able to undergo *more* extensive training than before. It might be argued that athletes would then find that they had physiological problems as they approached this new limit. This may be the case, but presumably because it would take longer to reach this point, an agent would have an associated increased length of engagement with their chosen practice. Methods such as these would allow the athlete to continue to participate in their chosen practice. They may or may not be better performing than before their surgery, but this is not important for this part of the discussion. The point is that they are able to remain involved with the practice for longer, thus widening participation. It is clear that an athlete who cannot be involved with the practice cannot therefore realise the practice's internal goods. This means that they cannot promote the good consequences of such a realisation.

Genetic techniques that correct injuries, or prevent them from happening in the first place, could extend the amount of time that an athlete can be involved in a practice or could allow those who couldn't previously compete to take part at a higher level, which is discussed further below. As involvement in a practice is a necessary to gaining the internal goods it contains, it is uncontroversial that such techniques, corrective or preventative, be included in modern sport. People that enjoy any particular practice would presumably be unhappy about any event that required them to cease involvement with their chosen practice. In sport, injury is a prime example of such an event. Opponents may claim that this is just the first step down the slippery slope to allowing all enhancements in sports. However as I have already shown in Section 4.2 above, the distinction between therapy and enhancement, while intuitively appealing, does no moral work when analysing each application of genetic technology. By considering the issue from the point of view of realising the internal goods of a practice and therefore promoting good consequences, I have shown that it would be reasonable to allow this level of genetic manipulation into sports. These would be good candidates for early instances of the incremental inclusion of genetic enhancement technology. They are closer in general function to contemporary medical practice and as such are more likely to be available to a greater number of support systems earlier.

There is another way in which this increase in participants can be understood. Each person is currently limited by the contingent circumstances of their birth. In the absence of genetic manipulation technology, they are severely limited in terms of which sports practices they

can undertake. It is not the case that everyone has the *right* to take part in any practice to the extent that they so desire, however, by allowing genetic enhancement in the practice, the *range* of options will be extended a great deal. This is a common response made by proponents of genetic enhancement in general terms. Usually it is in relation to determining which enhancements would be permissible, particularly if chosen by a third party for another. I explored this above in Section 3.1 in relation to which enhancements a parent could chose for a child. As long as they did not limit their futures in any way or in fact opened them further by allowing more extensive possible projects, then it is morally permissible for a parent to choose them for future children. If this holds, then a self-directed adult is reasonably accorded the same option. In terms of sport, having access to genetic enhancements would mean that many more people would be able to participate in a wider range of sports. Rather than being missed by 'talent identification systems',[481] they would be able to try more sports and discover which they preferred once they are old enough to make such decisions. This is important because of the amount of time and energy that people devote to many sports in general. Wider access to sports brings with it the greater possible realisation of internal goods and as such, promotes good consequences.

In addition, there is another positive consequence of genetic enhancement for the younger athlete. At present, great athletes typically start along the path to excellent performances at a very young age, often at the behest of their parents or a teacher at school. This is because these people realise that in order to be spotted by talent scouts and so on, the younger the athlete, with associated superior performances compared to their peer group, is more likely to get the extra attention of support systems that will make their reaching the top more likely. There can be a great deal of pressure on the young athlete from overbearing parents. Such a stifling atmosphere is not conducive to a psychologically well-rounded future adult. If genetic enhancement meant that athletes could still perform well, but later in life, then this particularly negative aspect of modern sport could be avoided.

The opponent may point out that I have argued elsewhere[482] that the inclusion of genetic enhancement will not reduce the amount of effort that the elite athlete puts into achieving their superior performances. This still pertains to the situation I am considering here. By

[481] These typically look at very young potential athletes.
[482] Section 4.3.

having access to enhancing technology, the practice could be entered into later in life. It would not take out the necessity for extensive practice, but rather widen the window of time in which elite performances are possible. Although there may be problems linked to living longer, the real issue is that of health problems associated with senescence.[483] It is the very fact that the body stops repairing itself effectively that means in most sports, being at a higher standard at a younger age means the athlete is more likely to do well. Avoiding the pressure of starting elite sport at a young age is a particularly positive set of consequences pointing to the inclusion of genetic enhancement technology.

The source of these positive consequences is that more people will be able to approach their chosen sport at a better level for more of their lives. There is, of course, the underlying assumption that enhancements would be accessible to all whom so desire them. The mere extension of longevity in a sport, for many, will be reason enough to use genetic technology. They enjoy the practice and certainly suffer when injury or age-related issues stop them from being involved at quite the level they prefer. They do not have a right to participate at this level, but if genetic enhancement compensates for something they are not responsible for, say aging or many injuries, it seems excessively controlling on the part of regulatory institutions to refuse them access to their practice. If the athlete is still prepared to strive for excellence *within* their practice, then they are fulfilling an important aspect of appropriate involvement in that practice. They are still trying to realise internal goods, thus promoting good consequences.

This appropriate involvement is as follows. The agent wants to participate in the practice at a particular level. Having been in the practice for a number of years, they are aware of the requirements for the full involvement in that practice. It is clear to them that when they do not attend training for a couple of months, it is harder for them to perform, for example. This is exacerbated by the fact that they are getting older, for example being in their early forties, and recovery times are slowly extending. There is then the advent of genetic enhancement, and they are able to make up for some of the problems linked to senescence and are able to keep training at a level that does allow full participation. They are less likely to take extended time out of the practice because recovery times are now at what they used to be when they

[483] Bostrom and Roache 2007 p. 123

were twenty. Clearly they have been enhanced, because the forty year old who recovers at the same rate as the twenty year old is not functioning as is typical for the species. Yet, this is not what the moral assessment rests on. Instead this hinges on whether they are appropriately striving for the internal goods of the practice.

The internal goods include the performance of the practice, the camaraderie of any team work and, of course, the final result. These are only achievable if certain character traits are in place. The example just presented does not show any reason that these traits would not remain. The agent has overcome something that they are unable to control through their own efforts, so they have taken prudential action. Now, they can once again keep being involved with the practice as before. Not necessarily at a higher level, but at least at the same. The necessary virtues for a social practice to exist would not vanish with the inclusion of genetic enhancement. Rather, they could still be employed because people would now be in a position to engage with the practice, where they might not have been able to do so before. Thus, internal goods would still be realisable and therefore the good consequences of so doing would be promoted. Genetic enhancement would not undermine internal goods, and indeed could extend our pursuit of them, and thus should not be prohibited from the practice of sport.

Conclusion

In this chapter, I have positively justified the use of genetic enhancements in sport. Broadly, the justification came from the overall positive consequences of allowing a greater number of people to access their chosen practice at a higher level for longer. This higher level of performance was shown to have two aspects. For the athlete in their traditional prime, they simply increased their performance. For the older athlete, their performance capabilities were taken past what would be expected for their age, even if it did not return them to the theoretical maximum performance possible for a human being. I showed that genetic enhancement would allow for a better realisation of the internal goods of the practice, which showed that certain character traits were still present in those agents so enhanced. This was important because virtue consequentialism was employed precisely because it captured both the analysis of consequences of agents acting in the world with the fact that for a particular practice to be successful, its participants are expected to possess certain positive character traits. Additionally, the increased level of performance in competition, provided it was the

case of both sides improving, was shown not to be zero sum. If there is increased performance, then it is the case that all involved will have to consider their practice in more depth in order to find a way of bettering their opponents. The inclusion of genetic enhancements was shown to necessitate finer gradations within the practice, which would be beneficial for those actively participating as well as those watching the practice. This is true of games, where tactical play will have to be improved, and in record sports where training methods will have to be approached more imaginatively. The pressure will be taken off both very young athletes as there is no longer an imperative to being close to peaking in a practice while still in their teens, and also the task of developing unusually large athletes, which is clearly unsustainable.

The objections to genetic enhancement in sport have now been met. In addition, I have shown the extensive positive ramifications for including the innovations within the practice. All this shows that the WADA have indeed acted prematurely in banning genetic enhancement and, even if they take a gradual approach to allowing the inclusion of the technology, they now have clear grounds to do so.

Conclusion

This work has presented a justification for the inclusion of genetic enhancement in the social practice of sport. I situated the thesis in the context of modern sport, where, particularly at the top levels, all competitors are looking for an edge over their opponents. Some competitors have taken to doping which is currently against the rules of permitted substance use issued by the World Anti-Doping Agency. I rejected this institution's inclusion of genetic techniques on the banned list as being premature and as lacking suitable justification. This work has shown why this is the case. As noted in the Introduction, I recognise that many of the arguments contained herein are applicable to non-genetic forms of performance enhancement and should result in the relevant regulatory institutions re-thinking their approach to these as well.

The determination of the moral acceptability of the inclusion of genetic enhancement was made using a virtue consequentialist moral framework. This was because of its strength as a moral theory and the way it illuminated the issues associated with this novel technology. The first of these being the appeal of a moral theory that focuses on an agent's actual actions in the world. The second was the recognition that for any social practice (but notably sport) to function, agents are typically characterised with certain traits of behaviour. If the internal goods to the practice have been realised then this shows that in fact the agents do possess the requisite traits. If the agent is not participating in the practice for the sake of the internal goods, but for external ones, then the internal are less likely to be realised. This points back to deficiencies in the character of an agent so acting. Once I presented a defence of consequentialist moral theories in general and then an articulation of the specific variant I was to employ, I moved on to meet objections to the use of genetic enhancement.

Precisely because sport is a social practice and is therefore something which takes place in extended societies, I recognised the need to defend genetic enhancement on a number of levels. The first of these was based on the supposed general immorality of the use of the technology itself. There was the suggestion that use of such technology went against the will of a metaphysical entity, such as the Christian conception of God or secular conception of Nature. In conjunction with the claim that the natural is aligned with the good I demonstrated that this whole claim was not illuminating. This was because there are a great number of harmful things that are natural, and that the interpretation of the supposed will of a

metaphysical entity can be used by any side in any debate. The second objection in this section was based on the demands of the precautionary principle. This was found to have some force if taken to mean a careful consideration of possible consequences. I noted that those who cited the precautionary principle generally failed to show why the *status quo* should be maintained. This is because the choice not to enhance, although seemingly one of inaction, was still an action in itself. The conclusion of this section found that the precautionary principle did require prudence in the use of genetic enhancement technologies, but it did not preclude its use entirely.

The next set of objections was at the societal level. I used the work of major conservative bioethicists to explore concerns about the possible negative ramifications that use of genetic enhancement technology they might have for wider society. The first of these is the falling of society into moral turpitude as espoused by Sandel. He predicts that the use of the novel technology will result firstly in an attenuation of positive traits, particularly those found in an unconditional acceptance of life as it is. A failure to do this will result in a lack of solidarity with fellow members of society. Sandel fails to show why agents are required to maintain the *status quo* and not do anything to change their lives if suitable tools (such as genetic enhancement) are available, as opposed to more typical medicine or education. He also casts moral aspersions on the characters of all who engage in enhancement activities. His claims lack empirical evidence and amount to the recognition that a bad parent is simply a bad parent if they are over bearing and stifling, regardless of the way that this is expressed. I showed that as long as parents gave their children an open future, that is, they did not limit the possible life plans for them, enhancements would remain legitimate.

I then examined the work of Kass and Fukuyama whose claims are of the form that the use of genetic enhancement is an attack on what it is to be human; its use would be contrary to human dignity. Such a claim is difficult because of protracted disagreement on what human dignity is, but as understood by these authors it is ‘precisely’ something that cannot really be defined. Kass did endeavour to add weight to his claim by saying that human dignity is sourced in the lived human life and the possibility for humans to act beyond their mere life sustaining needs. I showed that genetic enhancement did nothing to undermine this conception of human dignity and could go some way to allowing people greater freedom in ‘being’ human. Genetic enhancement did nothing to undermine human dignity in the sense of

humans being of absolute moral worth. It would simply constitute a change that must be accepted as being in line with human dignity lest there is the failure to recognise that differences between humans do not alter absolute moral worth.

The final objection in this section was mounted by Habermas. His concerns lie in the possibility for genetically designed children to feel that their lives are not their own and hence that they are not a part of the moral community, because they would not feel genuinely autonomous. Given that no children can have a hand in their own genetic inheritances, I showed that designed children would feel a part of their community as long as they were properly inculcated into its mores. There would be no distortion between the generations because in many ways, the designed child's life is exactly the same as the undesigned child. It was found to be trivially true that a parent is not able to choose the 'best' life for their child, but in accordance with preserving open futures for children, the selection of certain traits was still legitimate.

Having met these objections, the final issues were found within the social practice of sport itself. The first of these was based on the health of the athletes and the problem of using medical innovations in healthy people. I argued that until a sufficient level of safety was met, the methods should not be used at all. The next step, to use the methods safely, required oversight by the regulatory institutions rather than a blanket prohibition. I briefly explored the treatment-enhancement debate because of its prominence in the enhancement literature. I showed that it did not have any moral or explanatory force, and that athletes who were either restored to typical functioning or taken past it were still able to appropriately participate in the realisation of internal goods to sport.

Even if the methods proposed are safe, there is the concern about whether such use is fair. There are a number of interpretations of fairness, which I explored in detail. I showed that on any of these interpretations that genetic enhancement would, if anything, act to make sport fairer. I did recognise the problem of the domination of the higher echelons of sport by support systems. I suggested that the gradual inclusion of genetic enhancement starting with those requiring the least resources would stop the problem of support system domination being exacerbated.

The next objection was based on the charge that the achievements of athletes who were genetically modified were not their own; there should be no laudations for them because the source of their achievements lies somewhere other than within themselves. Proponents of this view had a number of avenues open to them for such a claim, but all were found lacking. In the same way as without genetic enhancements, modern sport is the practice it is *with* external assistance given to athletes. As understood through virtue consequentialism, all the achievements of genetically modified athletes would still be authentic, their own, and therefore have an appropriate place with sport. The athlete would still have to strive and endure all the training as before; there are no short cuts.

The final objection based on sport is that the inclusion of genetic enhancements will undermine the very essence of sport; its spirit. On a broad understanding of the spirit of sport as issued by the WADA, the spirit of sport is simply a list of positive aspects of sport that is in no way affected by allowing genetic enhancement. The narrow understanding of the conception is the idea that the spirit of sport is identical to the ranking of athletes due to their natural traits. I find this version unconvincing as it is merely contingent that athletes have certain traits and were born into certain circumstances. I showed that the inclusion of genetic enhancement in combination with a move away from this narrow understanding would be better for the practice of sport.

This thesis has shown that there is no need to fear the novel genetic technology. Once it is here, it will not threaten humanity in the ways envisaged by the conservative bioethicists. Humanity will still have to work to ensure the technology is not misused, something that is true of all innovation, but it might have a tool with which to help the disadvantaged. The future is exciting with respect to the new technology, especially in the social practice of sport. Genetic enhancement will take some of the genetic and social contingency out of the current paradigm of modern sport. Rather than simply ladling laudations on the lucky who were born to the right parents in the right place; with enough effort, more people will be able to realistically set their sights on being elite performers in the different sporting disciplines. Genetic enhancements will mean that when athletes are close to adulthood that they can choose for themselves in which direction to turn their lives, rather than when they are so young they are barely aware of themselves as people. The technology will change a person's predisposition for certain traits rather than simply give them a new phenotype. This means

that athletes will still have to devote their lives to training their bodies in order to perform effectively. They will still need to spend countless hours in the pool or at the track developing the neural pathways that allow muscles to be used in particular ways. Purposeful practice will remain an inherent and important feature of an athlete's life. Striving for excellence will not vanish with the arrival of this technology. In fact, more people will be in a position to strive as being genetically modified will allow them to train for sports they incline towards but were not predisposed genetically or therefore phenotypically. Genetically modified athletes should be able to perform at a higher level, narrowing margins between competitors. This will raise engagement with the sport; it will require protracted consideration of tactics and approaches to training. The increase in skill will have an attendant increase in the nature of the very spectacle of sport that means spectators will derive even more pleasure from watching competitions. The internal goods of sport, the physiological and psychological engagement within the athlete and against other competitors, will be available to more people, at a higher level, for more of their lives. These are undoubtedly beneficial consequences and society will most certainly gain from permitting the development and use of the necessary genetic manipulation techniques.

This thesis has justified my claim that the WADA have acted prematurely in banning genetic enhancement from sport. The regulatory body has vastly overestimated the problems of genetic enhancement and have entirely underestimated the multifarious benefits of the technology. The practice would certainly change with the inclusion of genetic enhancement, but this would be a change for the better.

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