

Selecting Children: The Ethics of Reproductive Genetic Engineering

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Abstract

Advances in reproductive genetic engineering have the potential to transform human lives. Not only do they promise to allow us to select children free of diseases, they can also enable us to select children with desirable traits. In this paper, I consider two clusters of arguments for the moral permissibility of reproductive genetic engineering, what I call the Perfectionist View and the Libertarian View; and two clusters of arguments against reproductive genetic engineering, what I call the Human Nature View and the Motivation View. I argue that an adequate theory of the ethics of reproductive genetic engineering should take into account insights gained from these views.

Selecting Children: The Ethics of Reproductive Genetic Engineering

I. Introduction

Advances in genetic engineering have already made it possible to select the sex of one's child with great accuracy, screen for the susceptibility to serious genetic diseases, and develop genetically modified crops (Liao 2005b). Soon, it may be possible to choose a child's attributes such as height, hair and eye color, physical appearances, and, perhaps even personality and intelligence. Once the techniques of genetic engineering are perfected, it may also be possible to create human-animal hybrids, e.g. pig-humans, in the way we can already create hybrid animals such as tigers (a hybrid cross between a male tiger and a female lion) and geep (a sheep-goat chimera). And, couples who want to ensure that their offspring lack a certain attribute such as the ability to hear will also be able to achieve their aim.¹ In light of these real possibilities, how should we think about the ethics of genetic engineering?

There is already a vast literature devoted to the ethics of genetic engineering. For example, much has been written about the potential of genetic engineering to exacerbate social inequality and about the various problems inherent in genetic research such as the ethical quandary of conducting research on children without their consent and the potential pressures on women in particular of accepting these new technologies.² My aim in this paper is therefore not to be comprehensive. I shall concentrate on some recent philosophical arguments for and against genetic engineering. Also, I would like to focus here on certain kinds of genetic engineering. In particular, I am interested in the ethics of genetically engineering human beings and human-animal chimeras. So I shall set aside

ethical issues regarding the genetic engineering of non-human animals and non-animal entities such as crops. Furthermore, a distinction is often made between *somatic* and *germline* genetic engineering. Somatic engineering targets the genes in specific organs and tissues of the body of a single existing person without affecting genes in their eggs or sperm. Germline engineering targets the genes in eggs, sperm or very early embryos. My concern here will be with the ethical issues surrounding germline engineering. Moreover, within the subset of germline engineering, it is useful to distinguish between *reproductive* and *research/therapeutic* genetic engineering. The former is concerned with using genetic engineering to select and create new beings, whereas the latter is concerned with using genetic engineering for research purposes and/or for developing treatment for diseases. My interest here will primarily be with reproductive genetic engineering.

Finally, it is useful to distinguish between *modification* and *selection*. Modification involves using genetic engineering to alter certain genes in an embryo or a gamete. For example, at present, genetic engineering involves putting the desired “new” gene into a virus-like organism, which is then allowed to enter the target cell (of an embryo or a gamete in the case of germline engineering) and insert the new gene into the cell along with the “old” genes. Selection involves selecting particular pairs of gametes for fertilization or a particular embryo for implantation. In the future, it may be possible to design genes to create entire gametes or embryos for selection. (For this reason, in this paper, I am using the term ‘genetic engineering’ broadly to cover both modification and selection).

The distinction between modification and selection is relevant because in the case of reproductive modification, it could be argued that the resulting being could later

complain that he or she could have been different if the modification (either in the embryo or in the gametes) had not taken place.³ Reproductive modification therefore raises issues relating to identity and autonomy (Liao 2005b; Habermas 2003, 40-41). Unlike reproductive modification, reproductive selection does not face these issues. The reason is that the being that actually exists could not later complain that he or she could have been different, because he or she would not have existed if a different being had been selected. In the following, I am primarily interested in ethical issues that arise out of reproductive selection, although, as we shall see, reproductive modification will be more pertinent to some of the views I shall discuss.

I shall evaluate two clusters of arguments for the moral permissibility of reproductive selection, what I call the Perfectionist View and the Libertarian View; and two clusters of arguments against reproductive selection, what I call the Human Nature View and the Motivation View. As I shall point out, many of these views are not mutually exclusive.

To evaluate these views, it is useful to have before us some test cases. Consider the following two cases:

Creating a Deaf Child: In 2001, a deaf lesbian couple, Sharon Duchesneau and Candy McCullough, sought to have a deaf child. Initially, Duchesneau and McCullough approached a sperm bank, but they learned that congenital deafness was one of the conditions that ruled out would-be donors. They then found someone who has five generations of inherited deafness in the family and used artificial insemination to conceive a deaf child.

Creating a Pig-Human: Researchers in the UK have recently successfully created hybrid human-cow embryos for research purposes.⁴ Suppose that this technology is perfected for reproductive purposes, and it becomes possible to create different combinations of human-animal hybrids. A couple then decides to have a pig-human child.

Throughout the paper, I shall consider the implications of each of these views for the moral permissibility of these two cases.

II. The Perfectionist View

To begin, I shall examine what might be called

The Perfectionist View: Given a choice between selecting a being that will have the best chance of having the best life and a different being that will not have the best chance of having the best life, it is morally obligatory to select the former.

The notion of ‘best chance’ can be understood here in terms of the expected value of an outcome which is the value of an outcome multiplied by the probability of its occurrence. The notion of a ‘best life’ can be understood as a life with the most well-being, which presupposes some account of well-being. There are ongoing controversies about whether to understand well-being in terms of an objective list (Griffin 1996, 29-30) informed desires (Griffin 1986; Darwall 2002), or states of pleasure and pain. The Perfectionist

View can be neutral with respect to these different accounts of well-being. It can make the minimal assumption that there are things that make a life go better or worse. For example, on any plausible account of well-being, it seems that chronic pain would be something that would make a life go worse.

The chief advocate of the Perfectionist View has been Julian Savulescu (Savulescu 2001).⁵ Here it is useful to distinguish between a stronger version of the Perfectionist View, according to which there is an all-things-considered, absolute, obligation to engage in selection if the beings selected will have the best chance of having the best life; and a weaker version, according to which there is prima facie obligation to engage in selection if the beings selected will have the best chance of having the best life.⁶ Savulescu defends the weaker version, which he calls Procreative Beneficence:

[C]ouples (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 (Savulescu 2001, 415).⁷

As Savulescu explains, the term ‘should’ can be understood here as a reason for having a prima facie obligation and is not just a supererogatory reason (Savulescu 2001, 415).

Here it may be worthwhile to point out that Savulescu’s version of the Perfectionist View may have what might be called a *Humanity Constraint*, according to which the selected being should be a human being of some sort. In other words, one can imagine a Perfectionist View that does not have a Humanity Constraint. On such a view,

one would be morally obligated to select beings that will have the best chance of having the best life, even if those beings may not be human beings at all.

What are some reasons in favour of the Perfectionist View? Following Derek Parfit, Savulescu suggests that the following examples support the Perfectionist View (Parfit 1984, Part IV; Savulescu 2001, 417). For instance, suppose that a woman has rubella. If she conceives now, she will have a blind and deaf child. If she waits three months, she will conceive a different but healthy child. According to Savulescu, she should choose to wait until her rubella is passed. Or, suppose that a couple is having in vitro fertilization (IVF) in an attempt to have a child (Savulescu 2001, 418). The process produces two embryos. A battery of tests for common diseases is performed, and it is found that Embryo A has no abnormalities on the tests performed; and Embryo B has no abnormalities on the tests performed except its genetic profile reveals it has a predisposition to developing asthma. Which embryo should be implanted? According to Savulescu, Embryo B has nothing to be said in its favour over A and something against it. Therefore, Embryo A should be implanted, because A has the better chance of having a better life than B.

A purported advantage of the Perfectionist View is that it may have the resources to argue against the selection of disabled children such as the reproductive choice of Duchesneau and McCullough. I say 'purported' because some people believe that it should be morally permissible to select disabled children. On a certain version of the Perfectionist View (with a particular account of well-being according to which a deaf child would not have the best chance of having the best life), there would be a prima facie obligation against selecting such a child if it is possible to select a non-deaf child instead.

In a similar vein, such a Perfectionist View may also have the resources to rule as impermissible reproductively selecting pig-humans, if, e.g., pig-humans do not have the best possible chance of having the best life.

As far as I can see, the Perfectionist View has two potential weaknesses. First, it appears to have certain counterintuitive implications. In particular, suppose that being male or being white or being tall or being heterosexual will provide the best chance of having the best life, the Perfectionist View implies that there will be a *prima facie* obligation to select children who are male, white, tall or heterosexual.

Advocates of the Perfectionist View might try to respond to this worry by arguing that sexism, racism and homophobia are social prejudices.⁸ Given this, so the argument goes, they require social, not biological, solutions. But, arguably, such a response only has limited force. Imagine a non-racist, non-sexist, non-homophobic society, in which, as it happens, being male or being white or being heterosexual still provides the best chance of having the best life. It seems that the Perfectionist View would have to accept that there is a *prima facie* obligation to select children who are male or white or heterosexual. Indeed, consider our society in which being tall gives one a better chance of having the best life. Arguably, there is no entrenched prejudice – at least not in the same manner as racism or sexism or homophobia – against those who are short. The Perfectionist View, it seems, would have to accept that there is a *prima facie* obligation to select children who are tall. This seems counterintuitive, because it is difficult to see how there could be an obligation, even a *prima facie* one, to select children who are tall.

Secondly, the two examples used to support the Perfectionist View do not seem to work. To recall, in one case, a woman has rubella, and if she conceives now, she will have a blind and deaf child. In another case, one embryo has a predisposition to developing asthma. It seems that in both cases, the choice is between selecting a healthy child and a possibly sick child. As such, it may well be that, in these kinds of cases, one should select the healthy child. However, the Perfectionist View requires that one select a child who will have the best chance of having the best life, even if the choice is between two healthy children. It is more difficult to see why there would be a prima facie obligation to do this. Consider

The Wine Capacity Case: Suppose that a couple is having in vitro fertilization (IVF) in an attempt to have a child. The process produces two embryos. A battery of tests for common diseases is performed, and it is found that Embryo A has no abnormalities on the tests performed, except that its genetic profile reveals that it has a predisposition to be able to enjoy super fine wine; and Embryo B has no abnormalities on the tests performed except its genetic profile reveals it has a predisposition to be able to enjoy very fine wine, but not super fine wine. Let us assume that being able to enjoy super fine wine over very fine wine gives Embryo A a better chance to have the best life. Which embryo should be implanted?

On the Perfectionist View, Embryo B has nothing to be said in its favour over A, while Embryo A has something to be said in its favour over B. So, on the Perfectionist View, other things being equal, there is a prima facie obligation to implant Embryo A. But it is

difficult to see how there could be an obligation, even a prima facie one, to choose A over B in this case. Advocates of the Perfectionist View might reply that given that it is agreed that Embryo A will have a better chance of having a better life than Embryo B, surely, there is *some* reason to prefer Embryo A to B. However, it seems that the notion of reason here is ambiguous. It could be a reason for a prima facie obligation, that is, something that, other things being equal, one ought to do; or a supererogatory reason, that is, something that is good to do but that there is no obligation to do. To illustrate this distinction, consider the following:

The Blind Lady Case: Suppose that you have the option of helping a blind lady to cross a street or helping the blind lady to cross the street and getting her a free ice cream. The blind lady loves ice cream and would be very happy if she had ice cream. Someone just across the street is giving away ice cream for free, and it is no trouble for you to get her some.

There is certainly a reason to help the lady to cross the street. In addition, there may also be a reason to help get ice cream for the lady, since it would make her very happy. But arguably, the two reasons are not the same. The reason to help the lady cross the street looks to be a prima facie obligation, that is, something that, other things being equal, one ought to do. However, the reason to help get ice cream for the lady looks at best to be a supererogatory reason, that is, something that is good to do but that there is no obligation to do. In the Wine Capacity Case, it seems that the reason to prefer Embryo A to B is also something that is good to do but that there is no obligation to do. If this is right, one

can grant that there is a reason to prefer Embryo A to B without accepting that this is a reason for a prima facie obligation. If so, the Wine Capacity Case does not seem to support the Perfectionist View.⁹

III. The Libertarian View

Another set of arguments for the moral permissibility of reproductive selection is what might be called the Libertarian View. Some versions of the Libertarian View are fairly permissive. According to one such version,

The Permissive Libertarian View: It is morally permissible to engage in the selection of any beings.

John Robertson, who has defended a version of such a view, argues that “procreative liberty should enjoy presumptive primacy when conflicts about its exercise arise . . .” (Robertson 1994, 24). More recently, Nicholas Agar, who has also advocated a version of such a view, which he has called Liberal Eugenics, argues that

liberal eugenicists propose that [genetic technologies] be used to dramatically enlarge reproductive choice. Prospective parents may ask genetic engineers to introduce into their embryos combinations of genes that correspond with their particular conception of the good life. Yet they will acknowledge the right of their fellow citizens to make completely different eugenic choices. No one will be

forced to clone themselves or to genetically engineer their embryos (Agar 2004, 6).

There are also less permissive versions of the Libertarian View. According to one such version,

The Life Worth Living (LWL) Libertarian View: It is morally permissible to engage in selection if the beings selected can have a life worth living.

The notion of “a life worth living” comes from Parfit (Parfit 1984, Part IV). It means something like a life that contains some positive values, and the amount of negative values this life contains, e.g. pain, is not sufficient to negate the positive values that this life has. Jonathan Glover, who has defended such a Libertarian View, what he calls the “zero line view,” asks,

Can it be right to bring a child into the world so long as we expect the child to have a quality of life at least at the zero line just above that ‘very terrible’ level?
(Glover 2006, 52)

Glover argues that if, all things considered, a child is glad to be alive, “how can it be that we owed it to the child to prevent his or her life?” (Glover 2006, 57)

Robertson’s, Agar’s and Glover’s versions of the Libertarian View may all have the *Humanity Constraint*, according to which the selected being should be a human being

of some sort. However, one can imagine a Libertarian View that does not have such a constraint. On such a view, it would be morally permissible to select beings that can have lives worth living, even if these beings may not be human beings at all. Many transhumanists would support such a Libertarian View.¹⁰

As I mentioned previously, the Libertarian View is based on the principle of procreative liberty. In liberal societies, there is a presumption in favor of procreative liberty. Given this, in order to justify its infringement, significant moral reasons must be presented, at least in these societies.

Many people would reject the Permissive Libertarian View on the ground that it is too permissive. For example, suppose that an individual wants to select a child whose life will be full of pain and suffering. On the Permissive Libertarian View, it seems that this individual would be morally permitted to do so. For many though, this implication seems counterintuitive. Accordingly, they would reject the Permissive Libertarian View.

Unlike the Permissive Libertarian View, the LWL Libertarian View does not have this implication, since it requires that the being selected has a life worth living, and arguably, a life full of pain and suffering is not one that is worth living. Still, other people may reject the LWL Libertarian View on the ground that it permits the selection of some disabled children or pig-humans, since some of them can have lives worth living. For these people, the LWL Libertarian View would still be too permissive.

As I mentioned earlier, Glover has argued that if, all things considered, a child is glad to be alive, ‘how can it be that we owed it to the child to prevent his or her life?’ In support of Glover’s point, it seems correct that we cannot owe it to the child to prevent him or her from existing when the child can have a life worth living, since the child

would not have existed otherwise. But perhaps one can have a (prima facie) obligation not to bring such a child into existence in other ways.

One possibility, following Parfit, is that bringing a child who will merely have a life worth living into existence is an instance of harmless wrongdoing (Parfit 1984, Part IV). That is, it is a wrong even though no one is harmed. Another possibility is that bringing such a child into existence involves wronging a type instead of a token (Kumar 2003). That is, it wrongs the child as a type, whoever the individual, who comes to instantiate the child as a token, may be.

But exactly what grounds the wrongness of bringing into existence a child who has merely a life worth living? As we have seen, advocates of the Perfectionist View have a ready answer to this question: The act is prima facie wrong because one has a prima facie obligation not to bring into existence a child who will not have the best chance of having the best life, if it is possible to bring into existence a different child who will have a better chance of having the best life. As I have suggested earlier though, there may be problems with the Perfectionist View. In light of this, one might hold instead

The Sufficitarian View: Given a choice between selecting a being that will have a decent chance to have a sufficiently decent life and a different being that will not have a decent chance to have a sufficiently decent life, there is a prima facie obligation to select the former.¹¹

As with the Perfectionist View, the Sufficientarian View also requires an account of well-being. In addition, a plausible Sufficientarian View would need to provide a plausible account of what constitute a ‘decent chance’ and a ‘sufficiently decent’ life. As with providing an account of what constitute ‘the best chance’ and ‘the best life,’ this too is a difficult task, but I shall assume that it can be done.

Like the Perfectionist View, it seems that the Sufficientarian View could also have the implication that there is a prima facie obligation to select children who are male, white, tall or heterosexual, if it turns out that the only way to have a decent chance to have a sufficiently decent life is to be male, white, tall or heterosexual. However, unlike the Perfectionist View, it seems that the Sufficientarian View can explain why there is not a prima facie obligation to select Embryo A over B in the Wine Capacity Case, because both embryos have decent chances to have sufficiently decent lives.

Also, on the Sufficientarian View, it seems that a child who has merely a life worth living would not have a decent chance to have a sufficiently decent life. If so, on the Sufficientarian View, there would be a prima facie obligation not to bring such a child into existence if it is possible to bring into existence another child who has a decent chance of having a sufficiently decent life.

This is a quick sketch of the Sufficientarian View and how one might be able to employ it to answer Glover’s challenge. No doubt more can be said regarding it. But I shall move on now to consider some arguments against the permissibility of reproductive selection.

IV. The Human Nature View

Many people believe that reproductive genetic engineering is impermissible because it interferes with nature, in particular, human nature. For example, Michael Sandel suggests that a problem with genetic engineering is that it represents

a Promethean aspiration to remake nature, including human nature, to serve our purposes and satisfy our desires . . . (Sandel 2007; Sandel 2004)¹²

Similarly, Francis Fukuyama points out that the deepest fear that people have regarding new biotechnology is that

biotechnology will cause us in some way to lose our humanity—that is, some essential quality that has always underpinned our sense of who we are and where we are going . . . (Fukuyama 2002, 101).

And, Leon Kass, the former chairman of the President’s Council on Bioethics, writes,

To turn a man into a cockroach—as we don’t need Kafka to show us—would be dehumanizing. To try to turn a man into more than a man might be so as well. We need more than generalized appreciation for nature’s gifts. We need a particular regard and respect for the special gift that is our own given nature (Kass 2003, 20).

However, exactly what is special about human nature? These writers do not explain. Fukuyama, for example, says only that

when we strip all of a person's contingent and accidental characteristics away, there remains some essential human quality underneath that is worthy of a certain minimal level of respect—call it Factor X (Fukuyama 2002, 149).

He then goes on to say that “there is no simple answer to the question, What is Factor X?” (Fukuyama 2002, 149) Or, Kass asks, “What is disquieting about our attempts to improve upon human nature, or even our own particular instance of it?” (Kass 2003, 17) His response is that “It is difficult to put this disquiet into words. We are in an area where initial repugnances are hard to translate into sound moral arguments” (Kass 2003, 17).

In the following, I shall attempt to provide some possible explanations regarding the specialness of human nature, and I shall consider their implications for the permissibility of genetic engineering.

To begin, let me briefly mention a view that I will not discuss at any great length here:

The Interfering with Nature View: It is morally impermissible to interfere with human nature, because this is interfering with nature, and it is morally impermissible to interfere with nature.¹³

This view resonates with many people who are worried about the prospects of reproductive genetic engineering, but among other things, this view – at least in its unqualified form – implies (implausibly) that providing vaccination, offering pain relief to women in labor, and so on, are impermissible, since these acts interfere with nature. Below I consider versions of the Human Nature View that may be more defensible.

Also, it is important to note that the Human Nature View may be more applicable to cases of reproductive modification rather than selection. The reason is that typically one can *interfere* with human nature only when human nature is already there. If reproductive selection involves, for example, selecting various genes to produce entire gametes or embryos, it is difficult to see how a Human Nature View could be relevant to this kind of selection. Hence, I shall primarily be discussing reproductive modification rather than selection here.

Moreover, those who wish to argue that genetic engineering can undermine the specialness of human nature may be making this task more difficult than necessary. The reason is that they seem to believe that by appealing to the specialness of human nature, they could show that genetic engineering (at least in respect to enhancement) is absolutely morally impermissible. But such an absolutist position is too strong. Consider

The End of the World Case: The world is about to end, and the only chance of saving the world is genetically to enhance a group of human beings so that they can save the world.

In such a case, it seems that using genetic engineering to enhance human nature could be permissible. Or, consider a less extreme example:

The Really Great Net-Benefit Case: A very minor genetic enhancement to human nature can greatly improve human nature.

If the net benefit is indeed really great, perhaps genetically enhancing human nature in such circumstances could also be permissible. These two cases therefore suggest that appealing to the specialness of human nature does not give one an absolute prohibition against using genetic engineering to enhance human nature. In fact, as we shall see, the Human Nature View may in fact provide very few constraints against reproductive genetic engineering.

One possible explanation regarding the specialness of human nature is that the human species is something special and something that ought to be treated in a certain way. As the late Bernard Williams said,

there are certain respects in which creatures are treated in one way rather than another simply because they belong to a certain category, the human species (Williams 2008).

Call this **the Human Species View**.

According to Williams, one ought to treat the human species in a special way because it is ours:

Suppose we accept that there is no question of human beings and their activities being important or failing to be so from a cosmic point of view. That does not mean that there is no point of view from which they are important. There is certainly one point of view from which they are important, namely ours . . . (Williams 2008).

Williams is suggesting that the fact that the human species is *our* species may provide a reason for treating it in a special way. Following Peter Singer though, it might be thought that this kind of partiality to our own species is just speciesism and is unjustified, much like racism and sexism are unjustified (Singer 1993). However, partiality per se is not necessarily unjustified, as for example, partiality to one's spouse or children. Moreover, Williams argues that partiality to the human species is justified, because, unlike racism or sexism,

“It's a human being” does seem to operate as a reason, but it does not seem to be helped out by some further reach of supposedly more relevant reasons, of the kind which in the other cases of prejudice turned out to be rationalizations (Williams 2008).

Indeed, as we have seen, many of those who believe in the permissibility of genetic engineering may still be holding a *Humanity Constraint*, according to which the reproductively selected being should be a human being of some sort. If so, it seems that even these advocates of the permissibility of genetic engineering would be subscribing to some kind of a Human Species View.

This said, the Human Species View would not rule as impermissible using genetic engineering to select children with certain hair or eye color or children with disability, since these children would all still belong to the human species. As such, it might be thought that the Human Species View provides very few constraints on reproductive genetic engineering. However, advocates of the Human Species View could argue that the constraint that it does provide is very important.

Another possible explanation regarding the specialness of human nature is the following: There is a long line of philosophers who have argued that the specialness of human nature lies in moral agency (e.g. Kant, Rawls, and Scanlon).¹⁴ By moral agency, I mean the capacity to act in light of moral reasons. Among those who share this idea, there is a lively debate about whether what grounds the specialness of human nature is the actual, the potential, or the genetic basis for, moral agency (Liao, manuscript). For our purpose, we can set this debate aside, and call this **the Moral Agency View**.

The value of moral agency is, I think, not in dispute. As an instrumental good, it enables human moral agents to live together. As an intrinsic good, arguably, it provides the basis of human moral status. The Moral Agency View provides a slightly different

constraint than the Human Species View. In particular, it would rule as impermissible the deliberate creation of beings without moral agency that could have had moral agency. Hence, it would rule as impermissible the deliberate creation of children or pig-humans that lack moral agency if these children or pig-humans could have had moral agency.

At the same time, as with the Human Species View, the Moral Agency View would not rule as impermissible using genetic engineering to select children with certain hair or eye color, since these children would still have moral agency. Also, the Moral Agency View would also not rule as impermissible the selection of children with disability as long as these children have moral agency. Hence, it might be thought that the Moral Agency View also provides very few constraints on reproductive genetic engineering. Again though, its advocates could argue that the constraint that it does provide is very important.

A third possible explanation regarding the specialness of human nature comes from the idea that human beings flourish in a certain way. For example, human beings flourish by having deep personal relationships, knowledge, active and passive pleasures (Griffin 1986; Liao 2006). It might be argued that the fact that human beings flourish in a certain way can place some constraints on human reproductive genetic engineering. For example, given that human beings flourish by having deep personal relationships, genetically creating a human being who can have a good life without deep personal relationships would change too much the meaning of what constitutes a flourishing human life as it is currently understood. Or, as Larry Temkin argues, given that mortality is part of human life, genetically creating a human being who will be immortal would

also change too much the meaning of what constitutes a flourishing human life (Temkin, forthcoming). Call this **the Human Flourishing View**.

Allen Buchanan has argued that the Human Flourishing View cannot constrain genetic engineering because it can only tell us that if we have a certain nature, then that should be taken into account when we try to determine what our good is, not that we should persist with that nature and the constraints that it imposes (Buchanan, manuscript).

Buchanan offers the following analogy:

if we are limited to a particular canvas, we can only create a painting that fits within its boundaries and we should take that into account in deciding what to paint—on it. But if we have the option of using a different canvas, then there will be other possibilities (and other limitations, as well), if we choose to paint on it. Recognizing that a given canvas limits the artistic good we can achieve does not imply that we should refrain from changing canvasses; on the contrary, it suggests that we should at least consider using a different one, if we can (Buchanan, manuscript).

Buchanan is surely right that recognizing that a set of goods places certain constraints on us does not mean that we are therefore not permitted to choose a different set of goods which will then have a different set of constraints.

But the Human Flourishing View may have an important point that is not captured by Buchanan's analogy. In particular, if what you care about is making improvements/enhancements within a certain set of constraints as dictated by a certain set

of goods, then, arguably, you would not be making improvements/enhancements *for that particular set of goods* if you choose a different set of goods with a different set of constraints.¹⁵ Consider the following: Suppose that you are trying to improve your marathon running time. Running a marathon is a good that comes with certain constraints, e.g., that you should physically run the 26.2 miles. It is certainly within the constraint of the good that you purchase better running shoes in order to improve your time. However, suppose you choose to use a car to complete the marathon. In doing so, it seems that you would no longer be improving your marathon time. The reason is that a constraint on the good of running a marathon is that you physically run the marathon, and in using a car, you would no longer be physically running a marathon.

Similarly, suppose your aim is to improve human flourishing for a particular being. But to achieve this aim, you choose to make a being who does not need to flourish according to the constraints set by existing ways of human flourishing. For example, you selected a being that does not need to have deep personal relationships in order to have a good life. Even if this being will indeed have a better life than any human being, on the Human Flourishing View, arguably, you are not improving human flourishing for this being, since this being does not require human flourishing in order to have a good life.

The Human Flourishing View therefore implies that the selection of pig-humans may not be improving human flourishing for pig-humans, if what constitutes pig-human flourishing is very different from human flourishing, but if one's aim is to improve human flourishing for a being selected. The Human Flourishing View seems compatible with the selection of children with disability as long as these children can still have flourishing human lives. Also, the Human Flourishing View appears to be compatible

with the selection of children with certain hair or eye color, since these children can still have flourishing human lives. As such, it might also be thought that the Human Flourishing View provides very few constraints on reproductive genetic engineering, though, again, its advocates could argue that the constraint that it does provide is very important.

V. The Motivation View

In addition to the Human Nature View, there is a complementary view against the permissibility of reproductive selection, which can be called

The Motivation View: It is not morally permissible to engage in selection if one does not have the appropriate motivation.

Sandel is a prominent spokesperson for a version of this view.¹⁶ Sandel has a number of objections against enhancement, whether by genetic engineering, drugs, or extensive training, but he argues that the deepest objection to it is the desire for mastery that it expresses. Focusing on the attempt of parents to enhance their children, Sandel says,

the deepest moral objection to enhancement lies less in the perfection it seeks than the human disposition it expresses and promotes. The problem is not that parents usurp the autonomy of a child they design. The problem is in the hubris of the designing parents, in their drive to master the mystery of birth. Even if this disposition does not make parents tyrants to their children, it disfigures the

relation between parent and child, and deprives the parent of the humility and enlarged human sympathies that an openness to the unbidden can cultivate (Sandel 2007, 46).

It is worth noting here that Sandel's primary target is using genetic modifications for enhancements purposes. He believes that it may be permissible and even obligatory to treat illnesses by genetic modification, drugs, or training. As he says, "medical intervention to cure or prevent illness...does not desecrate nature but honors it. Healing sickness or injury does not override a child's natural capacities but permits them to flourish" (Sandel 2004, 57). In the context of reproductive selection, we can therefore call a view such as Sandel's

The Hubristic Motivation View: It is not morally permissible to engage in selection if one has a hubristic motivation to control reproduction in enhancement cases.

According to Sandel, "parents bent on enhancing their children are more likely to overreach, to express and entrench attitudes at odds with the norm of unconditional love" (Sandel 2007, 49). Sandel accepts that parents must "shape and direct the development of their children" (Sandel 2007, 49). However, following William F. May, Sandel argues that there should be a balance between "accepting love," which "affirms the being of the child"; and "transforming love," which "seeks the well-being of the child" (Sandel 2007, 50; May 2005).

Against Sandel's Hubristic Motivation View, Frances Kamm has argued that it is important to distinguish between changes or enhancements that are made before a child exists (ex ante changes) and those that are made once a child exists (ex post changes) (Kamm 2005). As Kamm explains, ex ante changes are primarily genetic, while ex post changes will include drugs and training. Kamm argues that being motivated to seek ex ante changes does not show disrespect or, as Michael Sandel would put it, lack of love, for a person, since the person does not yet exist (Kamm 2005, 10).

Kamm gives several examples to support this claim. Consider one of them, call it the Lover Case. Kamm points out that when we love another adult, X, but before we actually come to love X, we may be interested in X because X has various properties such as kindness, intelligence, artistic ability, etc. However, she argues that it is not morally problematic to seek out such attributes as long as it is the particular person that we end up loving and not the person's set of properties. From such an example, Kamm infers that before a particular person exists, "it is permissible to think more boldly in terms of the characteristics we would like to have in a person" and "the search for properties other than the basic ones in a child" is not wrong (Kamm 2005, 10-11).

However, while Kamm seems correct that being motivated to seek some ex ante changes is permissible, it does not seem to be the case that all such motivations are permissible.¹⁷ In particular, it is important to distinguish between ex ante changes that are morally neutral and those that are morally dubious. The latter ones are morally objectionable even if the persons do not yet exist. To see this, consider a modified version of Kamm's Lover Case. Suppose instead that we are initially interested in X, only because X has a lot of money or only because X can provide us with valuable

insider information about, for, example a government (suppose we are a spy). But let us imagine that we then come to fall in love with X, despite the fact that initially we only view X instrumentally (for X's money or for X's capacity to offer us important information). Even if we end up loving X, it seems that this relationship is tainted because of our initial morally dubious motivation. By 'tainted,' I mean that our wrong will remain until, possibly, we regret having the wrong motivation initially. I submit that this is so, even if it is the case that if we had not had our initial morally dubious motivation, we would not have met X and we would not have developed this loving relationship.

Similarly, in a case in which someone, Z, sought some morally dubious ex ante enhancement or change in a person who does not yet exist, even if Z subsequently changes his mind and comes to love the child, Z would have still acted wrongly because of Z's initial morally dubious motivation. For example, suppose someone seeks to sex-select a female child with the aim of selling her into prostitution – call this the Prostitution Case. Even if this person subsequently comes to love the child, this person would have still acted wrongly in light of the person's initial morally dubious motivation to sell the child into prostitution.

Here it may be useful to explain what kind of wrong this is. Without trying to settle this matter here, I propose the following explanation:¹⁸ The wrong here involves a wrong that harms a relationship and then indirectly the particular individuals in that relationship. For example, as the modified Lover Case shows, although two people can benefit from an initial, morally dubious motivation – in the sense of coming to love one another – that relationship may be harmed as a result of the morally dubious motivation,

which in turn harms the individuals involved. If this is right, then, *pace* Kamm, being motivated to seek ex ante changes is not always permissible and can sometimes be morally wrong, precisely because the agents involved have the wrong motivations.

This said, the Prostitution Case shows that the Hubristic Motivation View may be too narrow. In the Prostitution Case, the person acts wrongly in being motivated to sell a child into prostitution, even though the person is not primarily motivated by the desire to control reproduction. Also, the Hubristic Motivation View seems too strong. It implies that whenever someone seeks to control reproduction in enhancement cases, one is acting wrongly. Yet, we do not think that a couple who plays Mozart to their still-in-the-womb offspring in order to enhance the offspring's appreciation for music is necessarily acting wrongly. Accordingly, here may be a more plausible version of the Motivation View:

The Weak Hubristic Motivation View: It is not morally permissible to engage in selection if one has a strongly hubristic motivation to control reproduction in enhancement cases or if one has inappropriate motivations; and if one only has a weak motivation to love a selected child for the child's own sake.

Such a view would permit couples who love their child for the child's own sake to play some Mozart to their still-in-the-womb offspring in order to enhance the offspring's appreciation for music. It would deem as impermissible a case in which the parents play Mozart to their still-in-the-womb offspring all day long with the intent of enhancing the offspring's appreciation for music so that the offspring may become a musical genius, but in which the parents care very little, if at all, about the welfare of the offspring. It would

also rule as impermissible reproductively selecting pig-humans merely out of curiosity. On the Weak Hubristic Motivation View, it would not be impermissible for a parent to select a disabled child or a pig-human, if the parent were prepared to love the child or the pig-human for its own sake.

As I mentioned at the outset, many of the views discussed are not mutually exclusively. So, for example, one could combine the Weak Hubristic Motivation View with a Perfectionist View. One would obtain the following:

Given a choice between selecting a being that will have the best chance of having the best life and a different being who has a lesser chance of having the best life, it is morally obligatory to select the former; only if one does not have a strongly hubristic motivation to control reproduction in enhancement cases or only if one does not have inappropriate motivations; and only if one does not have a weak motivation to love a selected child for the child's own sake.

Still, the Perfectionist View and the Motivation View are distinct, because someone could, for example, believe that her obligation is to select beings that will have the best chance of having the best life, irrespective of whether she is motivated to love the child or not.

VI. Conclusion

Being able to use genetic engineering in reproduction has the potential to transform human lives. Not only does it promise to allow us to select children free of diseases, it

can also enable us to select children with desirable traits. In this paper, I identified factors such as the best chance of having the best life for a child, reproductive liberty, life worth living, the chance of having a sufficiently decent life for a child, human species, moral agency, human flourishing, and appropriate motivation. An adequate theory of the ethics of reproductive genetic engineering should take into account these factors.¹⁹

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Notes

¹ I shall shortly discuss the case of a deaf lesbian couple who sought deliberately to create a deaf child using sperm from a deaf male donor.

² See, e.g., (Buchanan, Brock, Daniels, and Wikler 2000) for references and for a good overview of a number of these issues.

³ See (Parfit 1984) for discussions regarding the non-identity problem.

⁴ <http://news.bbc.co.uk/1/hi/health/7323298.stm>

⁵ For some criticisms of this view, see, e.g., (Parker 2007; Glover 2006; Birch 2005). For some responses to these criticisms, see (Savulescu 2007).

⁶ See, e.g., (De Melo-Martin 2004), who interprets Savulescu as arguing for the stronger version.

⁷ Recently, (Savulescu and Kahane, under review) have formulated the Principle of Procreative

Beneficence as follows:

If couples (or single reproducers) have decided to have a child, and selection is possible, then they have a significant moral reason to select the child, of the possible children they could have, whose life can be expected, in light of the relevant available information, to go best or at least as well as that of the others.

As with the term 'should' in Savulescu's original formulation of Procreative Beneficence, the term 'a significant moral reason' can also be understood to be a reason for having a prima facie obligation and is not just a supererogatory reason.

⁸ See, e.g., (Savulescu and Kahane, under review).

⁹ See (Buchanan, Brock, Daniels, and Wikler 2000, Chapter 6), for a discussion of other objections against the Perfectionist View.

¹⁰ See, e.g., (Bostrom 2003).

¹¹ For a version of the Sufficiencyarian View, see, e.g., (Kamm 1992, 132-133).

¹² As we shall see shortly, Sandel has other objections against reproductive genetic engineering.

¹³ See, e.g., (Norman 1996; Sheehan, forthcoming), for a discussion of this view.

¹⁴ See, e.g., (Kant 1996; Rawls 1971; Scanlon 1998).

¹⁵ (Sandel 2007) makes a similar point.

¹⁶ See also (Wasserman 2005) who has defended such a view.

¹⁷ I discuss this in greater detail in (Liao 2005a).

¹⁸ See, e.g., (Liao 2005a) for other possible explanations.

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