

# Human enhancement for whom?

*Professor Robert Sparrow, Philosophy, Monash University*

“Pre-press” version only. The final version of record of this paper appeared as

Sparrow, R. 2016. Human enhancement for whom? In Steve Clarke, Julian Savulescu, C. A. J. Coady, Alberto Giubilini, and Sagar Sanyal (eds.) *The Ethics of Human Enhancement: Understanding the Debate*. Oxford: Oxford University Press, 127-142.

Please cite that version.

## ABSTRACT:

Whose interests matter when making decisions about what sort of children to have? This question is at the heart of the ethics of reproductive decision-making. If we wish to have a sensible debate about human enhancement, then we must first become clear about the question of ‘enhancement for whom?’ This chapter surveys and evaluates the claims of the three leading candidates whose interests might be thought to matter when it comes to shaping future persons: the parents, the child, and ‘the world’. It also discusses two candidates strongly associated with eugenics—the ‘race’ and ‘the species’—as well as one candidate that is more plausible, although still properly controversial—the nation. The chapter argues that the parents, child, and ‘world’ all have legitimate interests in reproductive decisions and that these interests may conflict. For this reason, it suggests, enhancement is more ethically problematic than proponents typically admit.

KEYWORDS: human enhancement, ethics, reproduction, children, eugenics

## Human Enhancement for Whom?

Whose interests matter when making decisions about what sort of children to have? Although it has received scant attention, this question is at the heart of the ethics of reproductive decision-making. It is also crucial to the ethics of human enhancement given that the most powerful technologies of human enhancement are likely to involve shaping future individuals via genetic selection or genetic modification. If we wish to have a sensible debate about human enhancement, then, we must first become clear on the question of ‘enhancement for whom?’ (Elster 2011). In this chapter I survey and evaluate the claims of the three leading candidates whose interests might be thought to matter when it comes to shaping future

people: the parents, the child, and ‘the world’. I also discuss what I take to be two bad candidates, which nevertheless seem likely to loom large when it comes to popular discussions of this topic—‘the race’ and ‘the species’—as well as one candidate that is more plausible, although still, I think, properly controversial—the nation. I will argue that the parents, child, and ‘world’ all have legitimate interests in reproductive decisions and that these interests may conflict more than has been appreciated. For this reason, enhancement is more ethically problematic than proponents typically admit. The danger that policy on enhancement will in practice be guided by concern for the interests of the nation or, worse, the race constitutes a further reason for caution about the ‘enhancement enterprise’.

## 9.1 Reproduction, Enhancement, and the Interests at Stake

Couples considering having children must confront a number of decisions. First, a couple must decide *whether* or not to have children. Second, they must decide *when* to have children. In making this decision couples also determine in a small way the answer to a third question: ‘*What sort of children should they have?*’ By choosing to delay having children until they are older and more financially secure, for example, couples influence the expected welfare of their child. The development of new reproductive technologies, and in particular the technology of preimplantation genetic diagnosis (PGD), poses this third question with a new urgency.

PGD allows prospective parents some control over the genetics of their future child by allowing them to choose which of a number of embryos, created via IVF, to implant into a woman’s womb on the basis of a knowledge of the genetics of each embryo. This is a powerful technology for selecting against genes associated with particular phenotypes. Inevitably it is also a (weak) technology for selecting in favour of genes associated with desired phenotypes. The usefulness of PGD for positive selection is currently limited both by our understanding of the relationship between genotypes and phenotypes and by the small number of embryos that can be created in each cycle of IVF. However, improvements in computing and sequencing technology hold out some prospect of addressing the former of these problems. The development of a technology to produce ova from somatic cells via induced pluripotent stem cells (‘artificial gametogenesis’) may overcome the latter. If parents were able to choose from among thousands of embryos created using artificial gametes, the utility of PGD for positive selection would be greatly increased (Bourne, Douglas, and Savulescu 2012; Palacios-González, Harris, and Testa 2014; Sparrow 2013). Other, more speculative, technologies involving the genetic modification of embryos (discussed further in §9.1.2) may grant parents still greater power over the genetics of their children.

Thus, as technology provides us with the power to determine the genetics of our children, the question of what sort of children we should have arises with increased urgency. This question is central to the ethics of human enhancement because one of the most plausible ways to enhance human beings would be to alter them genetically.

However, before we can answer *this* question there is another matter we first must become clearer about: we need to know what makes one sort of child better than another. What makes something an ‘enhancement’? It might be thought that enhancements are

whatever make something better and that we are simply enhancing ‘capacities’. Yet while these answers may do in some contexts, at a deeper level they fail: ultimately we need to know *why* one state of affairs counts as better than another when we are thinking about the ethics of reproduction. Presuming that what is better is better for someone, we need to know whose interests are relevant when it comes to decisions about what sort of children to have. For whom are alterations to the genetics of children an enhancement? In the following sections I survey and evaluate a number of different answers that might be given to this question. I will also offer some thoughts about how we might go out about balancing the competing interests I identify.

### 9.1.1 *The parents*

The obvious place to begin a list of the interests at stake in reproduction is with the parents. A non-trivial portion of the project of having children takes place before the children are born—some of it before they are conceived. If couples have made a conscious choice to reproduce, there will be reasons for this choice, and the desires that motivate these reasons may ultimately be satisfied or frustrated. Even if parents have not made a conscious choice to reproduce, their lives will usually become intertwined with the lives of their children such that they will come to have an interest in their children’s flourishing.

There is one particular interest that parents have that is worth singling out for attention because of its centrality to contemporary debates about the ethics of reproductive technologies—an interest in the children whom they bring into existence being genetically related to them. Not all parents—or prospective parents—care about this, and many parents realize their interests in reproduction without the child whom they raise being the product of their gametes. Nevertheless, many individuals desire not only to bring children into existence but for these children to be their genetic offspring. Indeed, so much is this the case that in many contexts genetic parenthood is assumed to be the very definition of parenthood. As we shall see below, in §9.1.2, however, insisting on this particular form of parenthood may sometimes be at the expense of the interests of other parties implicated in reproductive decisions.

The moral weight of the interests of the parents is reflected in the intuitive and legal force of the right to ‘reproductive liberty’ (or ‘procreative autonomy’). The place of reproduction at the heart of (many) ideas about what a good human life consists in establishes a strong presumption against coercive interference in couples’ reproductive projects (Brock 1994; Buchanan, Brock, Daniels, and Wikler 2000, pp. 206–13; Dworkin 1993; Robertson 1994, especially pp. 22–42; Savulescu 1999). While the precise extent of the activities that are properly understood to be defended by this right is contested (de Melo-Martín 2013; Sparrow 2008), at the very least prospective parents have a right against forced sterilization or abortion, and against being forced to become parents against their will by (for instance) being raped or denied access to contraception.

However, as the debate about the *limits* of reproductive liberty makes clear, there are other interests at stake in decisions about reproduction (Brock 1994). Most obviously, the interests of the parents may conflict with the interests of the child.

### 9.1.2 *The child*

By altering the timing of conception (Parfit 1984, pp. 357–61, 367–9), or by choosing different embryos via PGD, parents may bring into existence a child with a severe disorder or a one that is perfectly healthy. The fact that parental decisions have such an impact on the lives of their children means that those children clearly have interests at stake.

The interests of the child in reproductive decisions have been championed by Julian Savulescu (Savulescu 2001; Savulescu and Kahane 2009). He points out that the same reasons that move parents to embrace genetic selection for therapeutic purposes—a concern for the welfare of the future child—should also move them to embrace selection for beyond-species-typical traits (enhancement) where possible. This emphasis on the interests of the child serves to distinguish contemporary enthusiasm for human enhancement from historical programmes of eugenics, which were oriented towards the interests of the race or nation (Savulescu 2001, p. 424).

The moral weight of a concern for the interests of the child arguably depends on the nature of the reproductive technology we are considering. Decisions made before the child comes into existence seem to have a different moral import to decisions made once they exist (Parfit 1984). Because it is possible to identify the impact of decisions made any time after conception on the welfare of an individual, most authorities have tended to treat modifications to the embryo, or interventions which affect the developing foetus, as harming or benefiting particular individuals. As a result it will usually be morally problematic to sacrifice the welfare of children without their consent for the sake of the interests of third parties.

However, as Derek Parfit famously argued, decisions that determine *which* individuals come into existence do not seem to harm or benefit those individuals (Parfit 1984). The counterfactual claim about what their interests would have been had the decision been made differently, which is usually thought to be essential to the determination of harm or benefit, fails in such cases because had the decision been made differently a different person would have been brought into existence. Such decisions are not ‘person-affecting’, and because of this their ethics is both controversial and peculiar. For instance, it is this aspect of the ethics of genetic selection that explains one of the distinctive features of Savulescu and Kahane’s putative obligation of procreative beneficence, which is that it is—as they themselves readily admit—so easily defeasible (Savulescu and Sparrow 2013).<sup>1</sup>

---

<sup>1</sup> Savulescu and Kahane (2009) argue that procreative beneficence provides parents with a ‘significant moral reason’ to select the best child possible. However, they leave both the notion of a ‘moral reason’ and the question of the weight of ‘significant’ moral reasons underdescribed. Although they claim that significant reasons are ‘often strong enough to outweigh the reasons given by the interests of parents and other existing people’ (p. 277), they also explicitly allow that the political commitments of parents or concerns about aggregate consequences may justify parents ignoring the demands of procreative beneficence (Kahane and Savulescu 2010; Savulescu 2001). Given this it is hard to see why, on their account, anything the parents want strongly enough would not also justify the ignoring of procreative beneficence.

Until recently the most realistic hope for enhancing human capacities by shaping individuals' genes involved genetic selection for beyond-species-typical traits, perhaps over many generations or in conjunction with the use of artificial gametogenesis (Sparrow 2013). Such genetic selection would not be person-affecting. I will mostly be concerned with choices of this sort here. However, the development of the CRISPR/Cas9 system for genome editing (Cong et al. 2013) has opened up the possibility that we might be able to perform very precise genetic manipulations of human embryos in the not too distant future, including the introduction of genes for the purposes of enhancement (Regalado 2015). Whether such a technology would be person-affecting or not is unclear. If we think of it as involving the manipulation of an embryo that we have already chosen to come into existence, and think of the changes we make as benefiting a particular individual, then it will be person-affecting. However, if we think of it as requiring a choice about *which* person to bring into existence, either because the technology might also involve some selection *between* embryos or because we think of (some) alterations of genetic traits as themselves being identity-affecting (Zohar 1991), then this will not be a person-affecting technology.

Another key issue in the debate about the moral significance of the interests of the child concerns the extent to which these interests are amenable to comparison and (therefore) to maximization. If it were not at least sometimes the case that a child's genetic endowment at birth had implications for their expected welfare, then the interests of the child could play no role in determining the ethics of genetic selection or modification. Although the claim has been vigorously contested by writers within the disabilities community (Garland 2015; Hurst 2009; see also Barnes 2014), many people share the intuition that, for instance, having the gene for cystic fibrosis reduces the expected level of welfare of a child such that all other things being equal it is better to be born without this gene (Glover 2006; Harris 2007; Savulescu and Kahane 2009). Such judgements about the impact of genes associated with various impairments on expected welfare are central to the ethics of genetic selection for therapeutic purposes. If there is to be an obligation to enhance human beings by selecting for genes—or perhaps introducing genes—for capacities beyond those that are species-typical, then it must also be the case that those born with these genes would have higher expected welfare than those born without them.

The demands of the argument for human enhancement would be strongest were it the case that it is always possible to compare the expected welfare of children at birth and determine which of them had the highest expected welfare. I suspect that many people interpret Savulescu's claim that parents are obligated to have the best child possible—as I did in earlier work (Sparrow 2007, 2011a)—as implying that there was always an answer to the question as to which of two (or more) infants had superior life prospects.

However, more recently, Savulescu has conceded that in many cases there will simply be no answer to the question as to which of two children has better life prospects at birth (Savulescu 2015). One child may have a gene that makes it easier for them to succeed as a musician, while another has a gene that makes it easier to succeed as a poet, and there may be no answer as to whether it is better to be a musician or a poet.

While this seems eminently plausible, it calls into question the force of the case for human enhancement. The proper formulation of the obligation of procreative beneficence is revealed as 'the obligation not to have a child with life prospects worse than any other child

one might have bought into existence' (Sparrow 2014a). Moreover, given the diversity of ways of flourishing available to any person born with even a relatively meagre set of characteristically human capacities, it is likely that the life prospects of almost all embryos should be judged to be 'equally good', and thus that this obligation will usually be moot. Only in the rare case where one embryo had genes that would provide the future child with no less capacity to succeed in any life plan than the genes of another embryo, while also providing better prospects for success in one or more life plans, would it be possible to judge that some genetic endowments were superior to others without the fact of the plurality of worthwhile life plans rendering evaluations of the relative advantages of different combinations of genes impossible. Moreover, it seems likely that most genes that benefit some life plans will also be to the detriment of others (Sparrow 2010a, 2012a).

There are, of course, many ways in which parents may fail to promote the interests of their children: any decision that does not maximize the capacities or the welfare of the child will be contrary to the child's interests. Two, however, are worth highlighting here because of their role in the larger debate about the ethics of technologically mediated reproduction.

First, parents may act against the interests of the child when they insist on having a child who will be genetically related to them. While PGD may allow parents to choose the best of the embryos produced by the combination of their gametes, in many cases all of their embryos will have poorer life prospects than an embryo created using the gametes of third parties.<sup>2</sup> Thus an obligation to maximize the welfare of their children would often require parents to use donor gametes (Sparrow 2007; Sparrow 2011a). Savulescu and Kahane (2009) later qualified the 'obligation' of procreative beneficence to apply only to choice among the possible genetic offspring a couple might have. However, this restriction seems unprincipled.

Second, the choices parents might want to make regarding their children's genetic endowment, based on their own ideals and values, may not be in the best interests of the child (Davis 1997). While, at least in the context of genetic selection—with the exception of a preference for using their own gametes—it will (hopefully) be rare for parents to consciously sacrifice the interests of their children for their own interests, what seems more likely is that parents will choose genes that will help the child realize the ends that the parents believe to be worthwhile. Unless the genes the parents choose will make it no harder for children to pursue any (and every) life plan they might come to endorse, there will be a chance that, if the children do not grow up to share their parents' ends, they may find their goals frustrated by their parents' choices (Agar 1999). Again, as I suggested above, many genes—perhaps even the vast majority—will benefit individuals in the pursuit of some goals but be deleterious if they have others. What is at stake here, then, is the child's 'right to an open future' (Buchanan, Brock, Daniels, and Wikler 2000, pp. 170–2; Feinberg 1980). Yet the question of which futures are more open cannot ultimately be resolved without reference to ideas about which ends are worth pursuing (Sparrow 2010a). A concern for the best interests of the child may therefore either require us to settle on an account of the nature of human

---

<sup>2</sup> Setting aside for one moment the possibility that most such judgements fail in the face of incommensurability, in which case, as I observed above, arguments based on the interests of the child will, for the most part, be moot.

flourishing, which will inevitably be controversial, or prohibit us from bringing children into existence with anything other than ‘general-purpose’ genes (Dekker 2009; Fowler 2015; Fox 2007; Sparrow 2010a).

While recent discussions about the ethics of human enhancement have been dominated by concern for the welfare of the child, it did not take long for ideas about collective interests to re-emerge. As we shall see, however, the relevant collective remains contested.

### 9.1.3 *The ‘world’*

The suggestion that we should be concerned with the interests of people other than the parents who are reproducing or the children they might bring into existence appears in the debate about the ethics of genetic selection whenever people refer to the aggregate consequences of reproductive choices. For instance, the objection that it would be a bad thing if the widespread use of PGD for the purposes of either therapy or enhancement led to a loss of ‘human diversity’ relies on the intuition that such diversity makes the world a better place (Parens 1995; Garland-Thomson 2012, 2015; Sparrow 2015).

The idea that a larger community may have an interest in reproductive decisions has also been defended more systematically. In a wonderful piece of applied philosophy, Jakob Elster (2011) points out that the arguments that Savulescu uses to motivate the ‘obligation’ of procreative beneficence also imply an obligation to promote the interests of parties other than the child.<sup>3</sup> Just as it is irrational not to prefer a child with higher expected welfare over a child with lower expected welfare, so too is it irrational—all other things being equal—to prefer a child who would contribute less to the welfare of the world one who would contribute more. Just as common-sense morality recognizes that we should prefer our children to be born healthy and happy, so too does it recognize that we should prefer our children to make a contribution to the happiness of others. Douglas and Devolder (2013) have argued for the existence of what they call an obligation of ‘procreative altruism’ along similar lines.

Once one begins to consider one’s obligation to third parties, there is no obvious limit as to how far these obligations might extend. Procreative altruism therefore requires us to consider the interests of ‘the world’ when making reproductive decisions. The welfare of the world is, in turn, the aggregate welfare of all the creatures with interests in the world.<sup>4</sup>

Importantly, there is another route whereby one might arrive at the conclusion that parents are obligated to promote aggregate welfare in their reproductive decisions. As we saw in §9.1.2 above, decisions about which individuals to bring into existence appear to neither harm nor benefit the individuals we do bring into existence. This fact makes it difficult to theorize our obligations in relation to these choices: given that they don’t harm or benefit anyone it might be argued that they are morally equivalent. Nevertheless, many people do have the intuition that—all other things being equal—it would be wrong to bring an individual into existence with low expected welfare when we could have bought an individual with a higher expected welfare into existence instead. Such an obligation requires

---

<sup>3</sup> See also Petersen 2015.

<sup>4</sup> It is a further question just what this set consists in.

us to care about benefits (or harms) that are not benefits (or harms) to anyone—that is, about our impact on ‘impersonal’ welfare (Bennett 2009; Parfit 1984, pp. 386–7).

Yet once we take impersonal welfare into account, it seems implausible that we should not also care about the impact of our decisions on the welfare of existing individuals. Thus, again, it appears as though when making reproductive decisions we should consider the interests of all the individuals who exist, or will exist, regardless of our decision, as well as those who will exist as a result of our decision.

There is a large and complex philosophical literature that explores the implications of a concern for impersonal welfare for the ethics of reproductive decision-making. Notoriously, a concern for aggregate welfare that includes impersonal welfare seems to require parents to have as many children as possible. Moreover, the various argumentative tweaks that philosophers have attempted to try to avoid this implication all seem to generate equally unappealing consequences. Reasons of space prevent me from discussing this literature and its complexities here. Instead I must be content to make two observations.

First, for the most part, this literature has neglected the options established by the possibility of genetic selection for enhancement for the promotion of aggregate welfare. Presumably, for instance, it would improve aggregate welfare if a small number of parents were to bring into existence children who had been cloned and/or genetically modified in order to be anencephalic for the purposes of serving as sources of replacement organs for other citizens (Tooley 1998). As I have argued elsewhere, it seems likely that replacing a very small number of the members of a population with uniformly high welfare with individuals who will have lives only barely worth living would increase aggregate welfare by providing the individuals with higher welfare with an opportunity to be happy that they are better off than these ‘genetic scapegoats’ (Sparrow 2015). Other modifications, such as increasing the extent of human altruism (Persson and Savulescu 2012) or individuals’ willingness to take on various necessary social roles, such as collecting the garbage or caring for the elderly, might also be expected to make a significant contribution to increasing aggregate welfare.

Second, the moment one admits any role for considerations of aggregate welfare in decisions about reproduction, these threaten to outweigh any of the other interests at stake. Given the number of third parties who might benefit from the selection of future individuals that have particular sorts of capacities, there is little that the concern for the interests of such third parties could not justify.

### *9.1.4 The species*

Arguments about the implication of genetic technologies for the ‘species’ come up surprisingly often in both the literature and public discussions of this topic. Thus, for instance, when I have suggested that a concern for the best interests of the child—procreative beneficence—would require all parents to choose female children on the basis of their longer life expectancy and more ‘open’ future (Sparrow 2010b, 2012b), critics have often responded that this would be disastrous for the species (Harris 2011; Casal 2013). Similarly, people often worry about the impact of the widespread use of technologies of genetic selection on the extent of the genetic diversity within our species, and on the likelihood that the species

might suffer extinction as a result of some future pandemic or environmental change (Bayliss and Robert 2004, pp. 7–8; Suzuki and Knudtson 1989). Conversely, Chris Gyngell (2012) and Russell Powell (2012) have argued that genetic human enhancement might contribute to the long-term survival of the human species.

Such pleading on behalf of the species is surprising because it is far from obvious why the fate of the species should be of concern to us. Species do not experience anything, nor do they suffer or die, except metaphorically (Singer 1979, p. 203). The welfare of the individual organisms that make up a species matters, of course, but events or policies may lead to a species becoming extinct without harming any of its members. For instance, the aggregate welfare of the world might be vastly improved were all children from the next generation onwards to be born ‘post’-human with greatly improved capacities and (consequently) no interest in reproducing with members of previous generations, who they view as pathetically short-lived and profoundly cognitively impaired. In such circumstances the human species would become extinct without any individual suffering.

Even if species do have some value, this fails to establish why the survival of *Homo sapiens* should be of any more concern to us than the survival of any other species. Sadly, it seems likely that the extinction of the human species would actually greatly *reduce* the number of species that are likely to become extinct in the next several decades as a result of humankind’s environmentally destructive activities, which are currently estimated to be driving one in six species to extinction (Urban 2015). Concern for the value of species, then, provides us with little reason to regret the extinction of the human species.<sup>5</sup>

### 9.1.5 *The nation*

Because the implications of genetic selection for the world or the species are a function of the aggregate consequences of millions of reproductive decisions, it is actually extremely difficult to take account of them when assessing either the ethics or the rationality of individual decisions. Given that any individual decision will make only an infinitesimal contribution to the aggregate impact, even a small reason for making the choice that—if universalized—would generate the undesirable aggregate impact will typically outweigh concerns about the aggregate impact. For instance, even if parents recognize that a world in which everyone were born female would be a worse world, they may still have reasons to choose a female child themselves as long as they think that a girl will have better life prospects no matter what decisions other parents make (Sparrow 2011b). Avoiding such consequences therefore involves solving a collective action problem. Collective action problems are inevitable where what parents are pursuing for themselves or their child is a positional good.

The best way to resolve collective action problems is for all those involved to cede (some) power to an institution that is capable of reshaping the option sets of individual decision-makers by imposing penalties on anyone who chooses to ‘defect’ from the course of

---

<sup>5</sup> Clearly some people do care about the future of the human species, so a concern for their welfare may also dictate a concern for the welfare of the species.

action required to secure a collective benefit. In practice, this typically means a national government. While, in theory, national governments could legislate to defend the interests of *Homo sapiens* or to promote aggregate welfare at a global level, historically governments have tended to legislate in the national interest. Thus, for instance, when states—as they often do—adopt population policies, the justification for them usually refers to sex ratios or birth rates nationally rather than globally. Moreover, the transnational institutions required in order to regulate human enhancement in the interests of the world neither exist nor look very appealing once we start to imagine what sorts of powers they would require.

To avoid the adverse aggregate consequences of parents each pursuing either the best interests of their child *or* their own best interests through genetic selection, it will be necessary to regulate access to, and the uses of, technologies of genetic selection. Such regulation is likely to be directed by a concern for the national interest. As I will discuss further in §9.2 below, human enhancement in the national interest might require significant sacrifices from both parents and children.

### 9.1.6 *The race*

The largest ever program of ‘human enhancement’ to date was actually oriented towards the enhancement of a ‘race’ rather than a population understood as coextensive with the boundaries of a state, as the nation is more commonly thought of today. Both the National Socialist programmes of positive eugenics, through the SS’s Marriage Decree of 1931 and the *Lebensborn* programme, and the negative eugenics of the 1933 Act for Averting Descendants Afflicted with Hereditary Disease, which allowed for compulsory sterilization, were intended to promote the future welfare of the ‘Aryan race’ (Hubbard 2010). Similarly, the eugenic policies adopted by other nations around the world between the 1880s and 1940s were typically concerned with the welfare of populations conceived of through racialized narratives and were justified by reference to racial stereotypes (Kevles 1999).

It would be comforting to believe that the history of eugenics has irredeemably tarnished the idea that reproductive decisions should be made in the interests of the race. Unfortunately, however, there are a number of reasons to worry about the re-emergence of a racialized eugenics in the context of the enhancement enterprise (Sparrow 2014b). As I argued in §9.1.5 above, human enhancement—if it is regulated at all—is likely to be regulated with reference to the national interest. The genetics of the nation’s population is likely to be a central concern of such regulation. However, such ‘geneticization’ of the idea of the nation is fraught with political risks. There are significant tendencies within nationalism that have traditionally sought to represent the nation as the political expression of the interests of a people, and the people as racially distinct from other peoples. Placing the genetics of the nation’s population at the heart of regulations concerning a choice as ubiquitous and as intimate as reproduction seems likely to lend strength to this tradition. Moreover, once such a project is under way, there will be a temptation to allow eugenic arguments to play a role in other decisions that impact on the population’s genetics, including decisions about healthcare and immigration. Not only would this further entrench the idea that all citizens share a common genetic heritage but also it would inevitably encourage the idea that non-nationals are genetically distinct and are a threat to the ‘good’ genetics of the

nation. Given that we ordinarily act in more or less complete ignorance of the actual genes of other people, in practice such suspicion will naturally tend to adhere to those who look ‘foreign’ or ‘different’ in some way, which is to say that they will both track and reinforce historical ideas about ‘race’. For all these reasons there is, I believe, a significant danger that the regulation of human enhancement in the national interest will lead to the reinvigoration of a ‘scientific’ racism.

## 9.2 A Difficult Balancing Act?

Any plausible programme of genetic human enhancement would need to come to some conclusion about how to balance the different interests that—as I have argued here—are, or might be thought to be, at stake in reproduction. I believe that this task is much more difficult than generally appreciated and also, consequently, that the project of genetic human enhancement is more ethically fraught than proponents generally admit.

If the ethics of reproduction were simply a matter of balancing the interests of the parent against the interests of the child then this dilemma might at least be manageable, even if the fact that decisions about which children to bring into existence are not person-affecting means that it is more complex than first appears. However, the introduction of even the very basic reproductive technologies of contraception, selective abortion, and sex selection are sufficient to establish the possibility of collective action problems, which requires the state to step in and legislate. This in turn requires us to try to balance the reproductive liberty of parents against the interests of the larger collective, and the interests of the child against both.

The development of genetic technologies that might allow us to shape the capacities and character of our children would greatly intensify these challenges. As we have seen, it would increase the likelihood of parents acting against the interests of their children when they shape them in ways that the children may come to regret, which strengthens the case for the state to intervene to protect the interests of children. This would inevitably involve the state acting to adjudicate over what sorts of genetic intervention are incompatible with the child’s right to an open future, a role which is itself incompatible with the ‘state neutrality’ that many liberals have understood as essential to a just society (Dekker 2009; Sparrow 2010a). Granting parents the ability to consciously shape the genetics of their children would also greatly increase the likelihood that parental choices would establish collective action problems, either because parents would be motivated to seek positional goods for themselves or their children, or because the aggregate consequence of parents all seeking the same sorts of goods for themselves or their children would involve harms to the world, nation, or species. Again, in order to mitigate these risks, the state would need to regulate human enhancement and constrain the reproductive liberty of parents. Finally, as it becomes more powerful, genetic enhancement will greatly increase the extent to which it is possible to engineer human beings for the benefit of the world, nation, or species.

This last possibility is especially disturbing. While advocates of procreative altruism have written of the need to ‘balance’ the interests of the world against the other interests at stake in decisions about genetic human enhancement, to my knowledge no one has yet described or defended any principle that might plausibly guide us in this task. There are at

least two reasons to believe this will be very difficult. First, once one admits any role for the interests of third parties, this opens up the possibility that these interests might be very significant. For instance, an appropriately ambitious programme of society-wide genetic engineering—the creation of a ‘Brave New World’—might hold out the promise of a tremendous increase in aggregate welfare. It would require very significant competing interests to balance our obligation to bring about this good. Second, that both the interests of parents and the interests of children may sometimes be outweighed by the collective good must already be conceded by advocates of the regulation required to avoid destructive collective action problems, which will be essential to any defensible ‘liberal’ programme of genetic human enhancement. Any suggestion that these interests will reliably trump the interests of third parties is therefore grossly implausible. The fact that decisions to bring individuals with lower welfare into existence do not harm those individuals that are brought into existence is a further reason to think that arguments about the interests of children will ultimately prove little barrier to the pursuit of the public good by genetic means.

As I observed in §9.1.5 above, the interests of ‘the world’ will in practice be attended to by the representatives of the nation, who are likely to be all too quick to adopt the national interest as the guiding principle for the regulation of human enhancement. The answer to the question ‘enhancement for whom?’, then, will turn out to be enhancement for the nation. Moreover, what is good for the nation may be very bad indeed for our children and for us.

This is, ultimately, why I believe the project of enhancing our children’s genes is more ethically problematic than advocates typically acknowledge. People might prefer for no one to have this power over the character of their children than to end up in a situation where they have supported the development of the technology that might enable them to exercise this power themselves only for the state to usurp it and wield it at the expense of their interests and the interests of their children.

However, even if this is an accurate assessment of the conclusion of the ‘enhancement enterprise’, the thought is unlikely to be sufficient to prevent societies from embarking on it. At least initially, the power that genetic selection or manipulation will grant us over the character of our children is likely to be slight and analogous to the power that parents already have to shape their children through environmental manipulation. Consequently, the sacrifices required of parents and their children by the state in order to regulate enhancement appropriately early on are likely to be small and thus little barrier to public acceptance of the project. Only when the technology to engineer some people for the benefit of others is developed and the argument for a Brave New World made loudly in public again may people realize what they bought into when they bought into genetic human enhancement.

Yet, as discussed in §9.1.6 above, there is another danger associated with the regulation of human enhancement in the national interest, which is likely to be pressing even when technologies of genetic human enhancement remain relatively rudimentary: the danger of reinvigorating the racism that is historically associated with eugenics. While the connection between the project of shaping the genetics of a national population and the re-emergence of a racialized eugenics is a political and contingent one, it is nonetheless strong and should, I believe, motivate us to be very cautious indeed about embarking on the project of human enhancement by genetic means. Perversely, then, if I am right about the dangers ultimately

associated with the prospect of genetic human enhancement, critics of this project may have some reason to be thankful that its historical legacy is so shameful.

## Acknowledgements

The research for this essay was supported by the Australian Research Council's Future Fellowships funding scheme (project FT100100481). The views expressed herein are those of the author and are not necessarily those of the Australian Research Council. Thanks are also due to Catherine Mills, Steve Clarke, and Alberto Giubilini for comments on a draft of this chapter, and to Mark Howard, who assisted me with proofreading and with locating various sources while I was writing.

## References

- Agar, N. (1999). 'Liberal Eugenics', in H. Kuhse and P. Singer (eds), *Bioethics: an anthology*. Oxford: Blackwell, pp. 171–81.
- Barnes, E. (2014). 'Valuing Disability, Causing Disability', *Ethics* 125(1): 88–113.
- Baylis, F. & J. S. Robert (2004). 'The Inevitability of Genetic Enhancement Technologies.' *Bioethics* 18(1):1–26.
- Bennett, R. (2009). 'The Fallacy of the Principle of Procreative Beneficence', *Bioethics* 23(5): 265–73.
- Bourne, H., T. Douglas, and J. Savulescu. (2012). 'Procreative Beneficence and In Vitro Gametogenesis', *Monash Bioethics Review* 30: 29–48.
- Brock, D. (1994). 'Reproductive Freedom: Its Nature Bases and Limits', in D. Thomasma and J. Monagle (eds), *Health Care Ethics: Critical Issues for Health Professionals*. Gaithersburg: Aspen Publishers, pp. 43–61.
- Buchanan, A., D. W. Brock, N. Daniels, and D. Wikler. (2000). *From Chance to Choice*. Cambridge: Cambridge University Press.
- Casal, P. (2013). 'Sexual Dimorphism and Human Enhancement', *Journal of Medical Ethics* 39(12): 722–28.
- Cong, L., F. A. Ran, D. Cox, S. Lin, R. Barretto, N. Habib, P. D. Hsu, X. Wu, W. Jiang, L. A. Marraffini, and F. Zhang. (2013). 'Multiplex Genome Engineering Using CRISPR/Cas Systems', *Science* 339(6121): 819–23.
- Davis, D. S. (1997). 'Genetic Dilemmas and the Child's Right to an Open Future', *Hastings Center Report* 27(2): 7–15.
- de Melo-Martín, I. (2013). 'Sex Selection and the Procreative Liberty Framework', *Kennedy Institute of Ethics Journal* 23(1): 1–18.
- Dekker, T. J. (2009). 'The Illiberality of Perfectionist Enhancement', *Medicine, Health Care, and Philosophy* 12: 91–8.
- Douglas, T., and K. Devolder. (2013). 'Procreative Altruism: beyond Individualism in Reproductive Selection', *Journal of Medicine and Philosophy* 38(4): 400–19.
- Dworkin, R. (1993). *Life's Dominion: an Argument about Abortion, Euthanasia, and Individual Freedom*. New York: Knopf.
- Elster, J. (2011). 'Procreative Beneficence—Cui Bono?', *Bioethics* 25(9): 482–8.

- Feinberg, J. (1980). 'The Child's Right to an Open Future, in W. Aiken and H. LaFollette (eds), *Whose Child? Children's Rights, Parental Authority, and State Power*. Totowa, NJ: Littlefield, Adams & Co., pp. 124–53.
- Fowler, T. (2015). 'In Defence of State Directed Enhancement', *Journal of Applied Philosophy* 32(1): 67–81.
- Fox, D. (2007). 'The Illiberality of "Liberal Eugenics"', *Ratio* 20(1): 1–25.
- Garland-Thomson, R. (2012). 'The Case for Conserving Disability', *Journal of Bioethical Inquiry* 9(3): 339–55.
- Garland-Thomson, R. (2015). 'Human Biodiversity Conservation: a Consensual Ethical Principle', *The American Journal of Bioethics* 15(6): 13–15.
- Glover, J. (2006). *Choosing Children: Genes, Disability, and Design*. Oxford: Oxford University Press.
- Gyngell, C. (2012). 'Enhancing the Species: Genetic Engineering Technologies and Human Persistence', *Philosophy & Technology* 25(4): 495–512.
- Harris, J. (2007). *Enhancing Evolution: the Ethical Case for Making Better People*. Princeton, NJ: Princeton University Press.
- Harris, J. (2011). 'Sparrows, Hedgehogs and Castrati: Reflections on Gender and Enhancement', *Journal of Medical Ethics* 37(5): 262–6.
- Hubbard, R. (2010). 'Abortion and Disability: Who Should and Should not Inhabit the World?', in L. J. Davis (ed.), *The Disability Studies Reader*, 3rd edn. New York and London: Routledge, pp. 107–19.
- Hurst, R. (2009). 'Are Disabled People Human?', in P. Healey and S. Rayner (eds), *Unnatural Selection: the Challenges of Engineering Tomorrow's People*. London and Sterling, VA: Earthscan, pp. 60–6.
- Kahane, G. and J. Savulescu. (2010). 'The Value of Sex in Procreative Reasons', *The American Journal of Bioethics* 10(7): 22–4.
- Kevles, D. J. (1999). 'Eugenics and Human Rights', *British Medical Journal* 319(7207): 435–8.
- Palacios-González, C., J. Harris, and G. Testa. (2014). 'Multiplex Parenting: IVG and the Generations to Come', *Journal of Medical Ethics* 40(11): 752–8.
- Parens, E. (1995). 'The Goodness of Fragility: on the Prospect of Genetic Technologies Aimed at the Enhancement of Human Capabilities', *Kennedy Institute of Ethics Journal* 5(2): 141–53.
- Parfit, D. (1984). *Reasons and Persons*. Oxford: Clarendon Press.
- Persson, I., and J. Savulescu. (2012). *Unfit for the Future: the Need for Moral Enhancement*. Oxford, Oxford University Press.
- Petersen, T. S. (2015). 'On the Partiality of Procreative Beneficence: a Critical Note', *Journal of Medical Ethics*, 23 April, doi: 10.1136/medethics-2014-102420.
- Powell, R. (2012). 'The Evolutionary Biological Implications of Human Genetic Engineering'. *Journal of Medicine and Philosophy* 37(3): 204-225.
- Regalado, A. (2015). 'Engineering the Perfect Baby', *MIT Technology Review*, 5 March, <<http://www.technologyreview.com/featuredstory/535661/engineering-the-perfect-baby/>>.
- Robertson, J. (1994). *Children of Choice: Freedom and the New Reproductive Technologies*. Princeton: Princeton University Press.

- Savulescu, J. (1999). 'Sex Selection: the Case For', *Medical Journal of Australia* 171(7): 373–75.
- Savulescu, J. (2001). 'Procreative Beneficence: Why We Should Select the Best Children', *Bioethics* 15(5–6): 413–26.
- Savulescu, J. (2015). 'Procreative Beneficence, Diversity, Intersubjectivity, and Imprecision', *The American Journal of Bioethics* 15(6): 16–18.
- Savulescu, J., and G. Kahane (2009). 'The Moral Obligation to Create Children with the Best Chance of the Best Life', *Bioethics* 23(5): 274–90.
- Savulescu, J., and R. Sparrow. (2013). 'Making Better Babies: Pros and Cons', *Monash Bioethics Review* 31(1): 36–59.
- Singer, P. (1979). 'Not for Humans Only: the Place of Nonhumans in Environmental Ethics', in K. E. Goodpaster and K. M. Sayre (eds), *Ethics and Problems of the 21st Century*. Notre Dame, IN: University of Notre Dame, pp. 191–206.
- Sparrow, R. (2007). 'Procreative Beneficence, Obligation, and Eugenics', *Genomics, Society and Policy* 3(3): 43–59.
- Sparrow, R. (2008). 'Is it "Every Man's Right to Have Babies if He Wants Them"? Male Pregnancy and the Limits of Reproductive Liberty', *Kennedy Institute of Ethics Journal* 18(3): 275–99.
- Sparrow, R. (2010a). 'Liberalism and Eugenics', *Australasian Journal of Philosophy* 89(3): 499–517.
- Sparrow, R. (2010b). 'Better than Men? Sex and the Therapy/Enhancement Distinction', *Kennedy Institute of Ethics Journal* 20(2): 115–44.
- Sparrow, R. (2011a). 'A Not-so-New Eugenics: Harris and Savulescu on Human Enhancement', *Hastings Center Report* 41(1): 32–42.
- Sparrow, R. (2011b). 'Fear of a Female Planet: How John Harris Came to Endorse Eugenic Social Engineering', *Journal of Medical Ethics* 38: 4–7.
- Sparrow, R. (2012a). 'A Child's Right to a Decent Future? Regulating Human Genetic Enhancement in Multicultural Societies', *Asian Bioethics Review* 4(4): 355–73.
- Sparrow, R. (2012b). 'Human Enhancement and Sexual Dimorphism', *Bioethics* 26(9): 464–75.
- Sparrow, R. (2013). 'In Vitro Eugenics', *Journal of Medical Ethics* 40(11): 725–31.
- Sparrow, R. (2014a). 'The Real Force of "Procreative Beneficence"', in Akira Akayabashi (ed.), *The Future of Bioethics: International Dialogues*. Oxford: Oxford University Press, pp. 183–92.
- Sparrow, R. (2014b). 'Ethics, Eugenics, and Politics', in Akira Akayabashi (ed.), *The Future of Bioethics: International Dialogues*. Oxford: Oxford University Press, pp. 139–53.
- Sparrow, R. (2015). 'Imposing Genetic Diversity', *American Journal of Bioethics* 15(6): 2–10.
- Suzuki, D. T., and P. Knudtson. (1989). *Genethics: The Clash between the New Genetics and Human Values*. Cambridge, MA: Harvard University Press.
- Tooley, M. (1998). 'The Moral Status of the Cloning of Humans', in J. M. Humber and R. F. Almeder (eds), *Human Cloning*. New York: Humana Press, pp. 65–101.
- Urban, M. C. (2015). 'Accelerating Extinction Risk from Climate Change', *Science* 348(6234): 571–3.

Zohar, N. J. (1991). 'Prospects for "Genetic Therapy"—Can a Person Benefit from Being Altered', *Bioethics* 5(4): 275–88.