

# *Is it Ethically Acceptable, Legally Permissible and Halachic to use Preimplantation Genetic Diagnosis (PGD) to Select Desirable Characteristics?*<sup>1</sup>

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Given the recent birth, in the UK, of the first embryo to be genetically screened and selected to ensure freedom from a breast cancer gene,<sup>2</sup> there may be renewed concern that this technology could be used to create designer children who possess desirable characteristics.<sup>3</sup> It is therefore prudent to consider both the secular and Jewish ethics and legality of designer children. PGD can and is used to test for several conditions before implantation by removing one to two cells from a six to ten cell embryo, created by *in vitro* fertilisation (IVF). Only embryos free of conditions' genes are implanted. The phrase 'designer babies' conjures up blue-eyed, blonde hair children, not too dissimilar to Nazi aims for the Aryan race. However, *all* the currently legal PGD uses (under English law outlined in the Human Fertilisation and Embryology Act (HFEA) 1990) such as serious disability and disease elimination and saviour siblings result in designer children – children with parentally selected characteristics. Why should selecting children with desired characteristics such

as a particular sex or greater intelligence, for example, be any different from selection of those with an absence of undesirable characteristics?

***Selecting embryo sex to eliminate sex-linked disorders does not seem ethically contentious***

## **Sex Selection Ethics**

Selecting embryo sex to eliminate sex-linked disorders does not seem ethically contentious. As with other generally legally and ethically accepted uses of PGD, it prevents unnecessary suffering and eliminates conditions, rather than being motivated by prejudice. While sex selection for family balancing is not displaying sex bias and if used nationally, is unlikely to result in a societal sex imbalance, it could be the result of and lead to unrealistic stereotypical expectations based on children's sex. Just because a family wants one particular sex, does that warrant spending resources and discarding healthy but 'undesirable' sex embryos? More research is needed to see how much undesired sex children would affect a family.<sup>4</sup>

<sup>1</sup> Based on chapter four of a dissertation submitted as part of the MA in Medical Ethics and Law at King's College, University of London

<sup>2</sup> Lister, S. et al. (10/01/09). Breast Cancer Gene that Blighted a Family is Wiped out at Birth. *TimesOnline*, accessed 19/01/09 [http://www.timesonline.co.uk/tol/life\\_and\\_style/health/article5485224.ece](http://www.timesonline.co.uk/tol/life_and_style/health/article5485224.ece),

<sup>3</sup> Jones, D. (09/01/09). Immoral Advances: Is Science out of Control? *New Scientist*, <http://www.newscientist.com/article/mg20126905.100>, accessed 19/01/09

<sup>4</sup> Robertson, J. A. (2001). Preconception Gender Selection, *Am. J. Bioethics*, 1(1), 2-9

Concerns about selecting the sex of one's child for birth order or cultural preference, or economic usefulness include unbalanced population consequences.<sup>5</sup> Imagine that legal intervention could insist that for every female born, a male must be chosen.<sup>6</sup> If still uncomfortable, something other than population imbalance must be causing this: fear of allowing sex favoritism manifestation in reproductive behaviour,<sup>7</sup> rather than unconditional acceptance and love, wealth masculinisation and male-dominated societies<sup>8</sup> resulting in discrimination.<sup>9</sup> In some societies where sex discrimination is rampant, concern for the child could justify sex selection. However, allowing this will simply fuel existing bias which must be overcome through social change rather than PGD, using the resources that would have been spent on

**For sex-linked disease elimination it is allowed by Rabbi Auerbach**

the technology. For some, abortion would be a viable alternative to PGD if they found prenatally that their child was the 'undesirable' sex. This can and has been remedied in countries at risk, by not disclosing embryo sex to pregnant women.<sup>10</sup>

**Judaism and Sex Selection**

Judaism places much emphasis on reproduction and is detailed in the number of male and female offspring one should have. The school of Hillel<sup>11</sup> argues that just as God created a male and a female, one should do the same. One of the

four questions supposedly asked in the heavenly court after one dies is 'were you involved in trying to fulfil the procreation commandment (of having a male and female child)?'<sup>12</sup> One can deduce from here that one should be trying to fulfil this. The Talmud suggests numerous ways to influence a child's sex<sup>13</sup> and PGD sex selection could be considered a modern version of adhering to this command.<sup>14</sup> However, the wording suggests there it is effort rather than success that is at stake.<sup>15</sup>

There are a variety of *halakhic* opinions on the permissibility of sex selection. For sex-linked disease elimination it is allowed by Rabbi Auerbach,<sup>16</sup> although rejected for non-medical reasons. Zilberstein<sup>17</sup> and others<sup>18</sup> agree: in response to the Israeli Ministry of Health's decision to allow sex selection, many argued that the desire to have a child of a particular sex does not justify the disruption of normal marital relations. Thus Zilberstein<sup>19</sup> writes, '[Normally] God joins with man and wife [in creating a child], but here it is the doctor's hand [instead]'. However, Amar<sup>20</sup> allows this.

As with deaf embryo selection, another use of PGD, there may be culturally idiosyncratic reasons for sex selection. Two unique situations will be discussed.<sup>21</sup> Every male belongs to either the *Kohen* (priestly), *Levi* (sub-priestly) or *Yisrael* (ordinary)

<sup>5</sup> Sen, A. (1990). More than 100 Million Women are Missing. *New York Review of Books*, 20, 61-66

<sup>6</sup> Although in reality this would be difficult to implement

<sup>7</sup> Berkowitz, J. & Snyder, J. (1998). Racism and Sexism in Medically Assisted Conception, *Bioethics*, 12, 25-33

<sup>8</sup> Male favoritism presumed; Danis, J. (1995). Sexism and 'The Superfluous Female': Arguments for Regulating Pre-Implantation Sex Selection, *Harvard Women's Law Journal*, 18, 219

<sup>9</sup> Bumgarner, A. (2007). A Right to Choose? Sex Selection in the International Context, *Duke J. Gender L. Pol.*, 14, 1289-1309

<sup>10</sup> Wook, J. (20/05/08). Can Parents Find Out the Sex of Their Unborn Baby? *JoongAng Daily*, accessed 21/07/08 <http://joongangdaily.joins.com/article/view.asp?aid=2889977>,

<sup>11</sup> Yevamot 6:6 in Danby, A. (1933). *Mishnah*, English translation. Kaufman: London; Rambam, Hilchot Ishut 15:4

<sup>12</sup> Shabbat 31a, Ibid

<sup>13</sup> Rosner, F. (2001). *Biomedical Ethics and Jewish Law*. Hoboken, NJ: KTAV, 165-173; Niddah 31b, Epstein, I. (Ed.) (1952). *Babylonian Talmud*. London: Soncino

<sup>14</sup> Schenker, J. G. (2002). Gender Selection: Cultural and Religious Perspectives, *J. Assist. Reprod. Gen.*, 19(9), 400-10

<sup>15</sup> Brander, K. (2007). Sex Selection and Halakhic Ethics: A Contemporary Discussion, *Tradition*, 40, 53-6

<sup>16</sup> In Avraham, S. A. (1992). *Nishmat Avraham*, 4, 180. Jerusalem: Schlesinger Institute

<sup>17</sup> Zilberstein, Y. (1991). Selecting a Fetus for Implantation: Avoidance of Birth Defects and Determining Sex [Response to Richard V. Grazi, 1991]. *Noam*, 8, 47-8

<sup>18</sup> Barkam, A. (22/05/05). Orthodox and Conservative Rabbis Object to Allowing Gender Selection, *Haaretz Hebrew Edition*, 46-50

<sup>19</sup> Kiddushin 30b, supra, note 13

<sup>20</sup> See Brander, K. Playing God: Can I Choose My Child? PGD and Genetic Screening, *Yeshiva University*, accessed 21/07/08, <http://www.yutorah.org/showShiur.cfm?shiurID=713523>

<sup>21</sup> Grazi, R. V. & Wolowelsky, J. B. (2006). Addressing the Idiosyncratic Needs of Orthodox Jewish Couples Requesting Sex Selection by Preimplantation Genetic Diagnosis (PGD), *J. Assist. Reprod. Gen.*, 23, 421-5

caste, an affiliation passed down from father to son since biblical times. Males reading from the *Torah* on the Sabbath are called up in order of affiliation. In normal circumstances, fathers and sons are from the same caste. However, unless the donor is Jewish and of the same caste, a child created using donor sperm will automatically be considered a *Yisrael*. If the father is a *Kohen* or a *Levi* this will likely cause embarrassment; it could be taken as an indicator of his infertility, which, given Judaism's emphasis on procreation, may be viewed negatively. Women have not traditionally been called to read from the *Torah*, thus this issue could be circumvented by choosing a girl.

Another issue that could be bypassed is *yichud* (seclusion). *Halacha* forbids unrelated men and women from being alone together in a closed room unobserved by a third party. If donor sperm is used in IVF, the mother is related to the created offspring, however, the father may not be and therefore there will be an issue of *yichud* between him and any daughters. Therefore, a male child would be preferable.

In both of these cases, the motivation is not sex preference, and will not lead to major societal change.<sup>22</sup> Although, as discussed, there are rabbis who would not permit sex selection, in these cases it was considered in accordance with *halakha*.<sup>23</sup> Perhaps there should be room to incorporate ethical requests due to idiosyncratic cultural and religious practices, especially when used in conjunction with IVF for infertility.<sup>24</sup>

### Sex Selection Legality

There are a variety of ways in which parents might try to control their offspring's sex, including

<sup>22</sup> Ibid

<sup>23</sup> Shafran, Y., Lichtenstein, A. In Grazi, R. V. & Wolowelsky, J. B. (2006). Addressing the Idiosyncratic Needs of Orthodox Jewish Couples Requesting Sex Selection by Preimplantation Genetic Diagnosis (PGD), *J. Assist. Reprod. Gen.*, 23, 421-5

<sup>24</sup> Ibid

sperm sorting, infanticide, or prenatal sex diagnosis and abortion if it is the 'wrong sex'. This would be legal only if the pregnant woman's mental or physical health was endangered by carrying the pregnancy to term,<sup>25</sup> but it seems unlikely that a doctor would knowingly authorise such an abortion to avoid a sex-linked condition. Finally there is the HFEA-licensable use of preimplantation sex selection.

Following public consultation,<sup>26</sup> the HFEA recommended regulation and licensing of sex selection only to avoid the birth of a child suffering from a serious medical condition. This was on the basis of child welfare considerations<sup>27</sup> and due to the force of views of the representative sample questioned by a Market and Opinion Research International (MORI) poll,<sup>28</sup> even though opinion in the UK is divided.<sup>29</sup> Much criticism was made of the logic used with regard to risks, burden of proof<sup>30</sup> and being overly swayed by the prejudices of the public. Therefore, these critics argued that public opinion had trumped reproductive liberty,<sup>31</sup> while others argued that this was justified.<sup>32</sup>

At the time, sperm sorting was not regulated, and so primary legislation was needed to implement the recommendations,<sup>33</sup> whereas PGD was already covered by legislation. In 2005 the House of Commons Science and Technology

<sup>25</sup> S1(1) of Abortion Act 1967

<sup>26</sup> HFEA. (2002). *Sex Selection: Choice and Responsibility in Human Reproduction Consultation Document*, accessed 27/07/08 [http://www.hfea.gov.uk/docs/Sex\\_Selection\\_choice\\_and\\_responsibility.pdf](http://www.hfea.gov.uk/docs/Sex_Selection_choice_and_responsibility.pdf), criticised by: CORE. (2003). *Sex Selection Response*

<sup>27</sup> Herissone-Kelly, P. (2006). The Prohibition of Sex Selection for Social Reasons in the United Kingdom: Public Opinion Trumps Reproductive Liberty? *Camb. Q. Healthc. Ethic.*, 15, 261-72

<sup>28</sup> HFEA. (2003). *Sex Selection: Options for Regulation*

<sup>29</sup> Brazier, M. & Cave, E. (2007). *Medicine, Patients and the Law*. London: Penguin, 335

<sup>30</sup> Harris, J. (2005). Sex Selection and Regulation Hatred, *J. Med. Ethics*, 31, 291-4

<sup>31</sup> Herissone-Kelly, supra, note 27

<sup>32</sup> Baldwin T. (2005). Reproductive Liberty and Elitist Contempt: Reply to John Harris. *J. Med. Ethics*, 31, 288-90

<sup>33</sup> Jackson, J. E. (2006). *Medical Law: Texts, Cases and Materials*. Oxford: Oxford University Press, 854

Committee published a report<sup>34</sup> which recommended more research was needed before making blanket changes<sup>35</sup> but that they saw no issue with family balancing sex selection.<sup>36</sup> However, Governmental response<sup>37</sup> was that the HFEA Code of Practice was clear in its prohibition and they had no intention of altering this. The White Paper<sup>38</sup> proposed an absolute ban on sex selection for non-medical reasons including for the purposes of family balancing which applied to sperm sorting and PGD.

In Schedule 2, after Paragraph 1 of Bill 120,<sup>39</sup> 1ZA(1)(c) is inserted whereby embryos cannot be tested except under several conditions, one being that there is risk of gender-related disorder development and 1ZA(3) qualifies

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what gender-related means: if it affects one sex or one sex more than the other. In Section 13, Subsection 10 is inserted, whereby embryos known to be of a particular sex and carrying a particular risk, compared with embryos of that sex in general, that any resulting child will have or develop a gender-related serious condition, must not be preferred to those that are not known to carry such risk. Subsection 10 outlines what are gender-related conditions (as above). This seems to be a legal compulsion to use information ascertained from PGD to eliminate sex-linked disorders. Paragraph 51 of the Explanatory Notes for Bill 70 explains that this provision not only allows for sex selection for conditions which are sex-chromosome

linked but also where there is a particular risk of e.g. a family history of breast cancer.

1ZB prohibits testing to select an embryo of one particular sex unless the reason for testing falls under 1ZA. 1ZC allows for the amendment of 1ZA and 1ZB but 1ZC(3) prohibits any amendment which will test for sex unless it is on health grounds. Finally, Paragraph 4 of Schedule 2 prohibits licensing the procurement or distribution of sperm to which any process has been applied designed to result in a child of a specific sex, the primary legislation prohibiting sperm sorting.

Given the range of arguments both for and against sex selection as highlighted in the ethics and Judaism section, McCarthy<sup>40</sup> argues for a value system all could agree on: that of reproductive freedom to make ones own decisions, comparing possible non-medical sex selection legislation to existing abortion legislation. However, whereas abortion ensures certain individuals *do not* come into existence, maintaining the world's status quo, sex selection causes certain people *to* exist, which can change the fabric of society.<sup>41</sup> He argues that reasons to restrict this freedom – such as its interference with others' liberty, harm or social cost – are not sufficient in the case of sex selection. Arguably, however, the children can be harmed in that they are not seen as unconditionally-loved gifts, but selected. What if the technology fails and they feel that as the unselected sex they weren't really wanted? He denies that the fear of the 'slippery slope' should prevent use of the technology; however, by allowing sex selection we tacitly grant and agree to people having freedom to decide their children's characteristics which could ultimately lead to designer children.

This is an area where one needs international consensus otherwise individuals from prohibitive countries could become genetic tourists, travelling to other countries where little is done to enforce

<sup>34</sup> *Human Reproductive Technologies and the Law*

<sup>35</sup> Recommendation 29

<sup>36</sup> Recommendation 30

<sup>37</sup> Government Response to the Report from the House of Commons Science and Technology Committee. (2005). *Human Reproductive Technologies and the Law*

<sup>38</sup> Paragraphs 2.45-7, Department of Health. (2006). *Review of the Human Embryology and Fertilisation Act*

<sup>39</sup> HFEA. (2007-8). *Bill 120*, accessed 11/08/08 <http://www.publications.parliament.uk/pa/cm200708/cmbills/120/2008120.pdf>,

<sup>40</sup> McCarthy, D. (2001). Why Sex Selection Should be Legal, *J. Med. Ethics*, 27, 302-7

<sup>41</sup> O'Neill, O. (2002). *Autonomy and Trust in Bioethics*. Cambridge: Cambridge University Press, 61

prohibitive legislation,<sup>42</sup> or where there is no legislation at all, e.g. America. Countries should implement incentive programmes, enforcers training, whistle-blower rewards and alter negativity associated with girls e.g. governmental investment at female birth so that by the time of marriage, her dowry is available, or free schooling for girls.<sup>43</sup> Countries should also introduce prohibitive legislation where none currently exists. Whilst a general ban is important, perhaps there should be space within legislation to accommodate ethical idiosyncratic exceptions disassociated with cultural gender-bias, but arising through cultural particularities, especially when the potential parents would already be using IVF for infertility.

### Ethics of Designer Selection

Whilst we currently lack sufficient information as to how our genotype manifests in our phenotype, with the interest in genetics, it will be a matter of time before we ascertain and some say inevitably<sup>44</sup> use it. Therefore, it is important to consider the issues in order to effectively and ethically legislate when the time comes. This section will consider the ethics of selecting embryos with desirable characteristics through PGD.

One argument for this is that it is no different from disability elimination:<sup>45</sup> desiring the best kind of life. Arguably medicine already consists of interventions of this kind e.g. cosmetic surgery; furthermore even if we narrow the concept of medicinal goals, what is inherently immoral in using medical technology for non-medical reasons,

### *What is morally significant about the natural state?*

if privately funded? Existing uses of finite medical resources (regardless of funds), for non-essential selections based on desires rather than for maintaining species-typical health,<sup>46</sup> should be questioned rather than touted as precedent, especially where there are social consequences of such magnitude involved.<sup>47</sup>

Over time, would this technology change our humanness and why would this be bad? What is morally significant about the natural state?<sup>48</sup> From a consequentialist approach<sup>49</sup> it is not a problem as long as it produces a good outcome. Deontologists would argue we have inherent moral worth. If it affects our dignity or autonomy it should be prohibited. Would it affect our autonomy? While it would be an extension of parental autonomy through procreative liberty,<sup>50</sup> this should only be allowed until the infringement of someone else's liberty.<sup>51</sup>

This links to arguments about unborn children's right to consent to treatment, sense of choice<sup>52</sup> and open future.<sup>53</sup> This can be countered by the moral and legal acceptance of proxy consent in children's best interests: it is better to have an advantageous genome than a non-chosen one, it further opens their future and adheres to the procreative beneficence principle.<sup>54</sup> Some non-disease genes affect the likelihood of leading the best life and therefore there is a reason for parents

<sup>42</sup> Mudar, G. (2006). Doctors in India Prosecuted for Sex Determination, but Few Convicted, *B. M. J.*, 332, 257

<sup>43</sup> Bumgarner, A. (2007). A Right to Choose? Sex Selection in the International Context, *Duke J. Gender L. Pol.*, 14, 1289-1309

<sup>44</sup> Baylis, F. & Robert, J. S. (2004). The Inevitability of Genetic Enhancement Technologies, *Bioethics*, 18(1), 1-26

<sup>45</sup> Resnick, D. B. (2000). The Moral Significance of the Therapy-Enhancement Distinction in Human Genetics, *Camb. Q. Healthc. Ethic.*, 9, 365-77

<sup>46</sup> Hyman, D. A. (1990). Aesthetics and Ethics: The Implications of Cosmetic Surgery. *Perspect. Biol. and Med.*, 33, 193

<sup>47</sup> Sandel, M. J. (2004). The Case Against Perfection, *Atlantic Monthly*, 293(3), 50-64

<sup>48</sup> Chan, S. & Harris, J. (2007). In Support of Human Enhancement, *Berkeley Electronic Press*, 1, 10, accessed 11/08/08 <http://www.bepress.com/selt/vol1/iss1/art10>.

<sup>49</sup> Savulescu, J. (2002). Deaf Lesbians, "Designer Disability" and the Future of Medicine. *B. M. J.*, 325, 771-3

<sup>50</sup> Robertson, J. A. (1994). *Children of Choice: Freedom and the New Reproductive Technologies*. Princeton, NJ: Princeton University Press, 4

<sup>51</sup> Mill, J. S. (1910). *On Liberty*, London: J. M. Bent & Sons, 20

<sup>52</sup> Habermas, J. (2003). *The Future of Human Nature*. Cambridge: Polity Press, 53

<sup>53</sup> Feinberg, J. The Child's Right to an Open Future, in Allen, W. & LaFollette, H. (Eds.). (1980). *Whose Child? Children's Rights, Parental Authority and State Power*. Totowa, New Jersey: Littlefield, 124-53

<sup>54</sup> Savulescu, J. (2001). Procreative Beneficence: Why we Should Select the Best Children, *Bioethics*, 15 (5/6), 413-426

to use such information to choose the embryos containing these genes. By not using this technique, one does no harm to the child, as they would not have existed, but there is a wrong doing, as the best possible child has not been created.

However, there may indeed be child harm due to overbearing parental expectations, and child exploitation due to parental desires.<sup>55</sup> Whilst this can be overcome through counselling<sup>56</sup> and costs, time and harm could be balanced by the child's overall benefit, why create a problem when none exists before, take the risk or create the type of society where overbearing parents can manifest their behaviour? Do we want to create a society where it is permissible – and according to Savulescu – obligatory, to choose one's child? There is much fear that this will lead to a consumer attitude, selection drift,<sup>57</sup> the abolition of unconditional love<sup>58</sup> for one's offspring and rejection if children are not to specification.

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Whilst this discussion may bring to mind Nazi eugenics, do these associations not merely give credence to their view that trait selection changes society?<sup>59</sup> Many commentators argue that

'eugenics' is used as a trump card to rule out any similar technology – with which many are intuitively uncomfortable – without analysing the differing motivations for its use.<sup>60</sup> Kass,<sup>61</sup> however,

argues that the revulsion felt is an 'emotional expression of deep wisdom, beyond reason's power fully to articulate it'. He asks whether anybody's failure to give full rational justification for their revulsion makes it ethically suspect, arguing that on the contrary, 'we are suspicious of those who think that they can rationalize away our horror'.

However, if procreative autonomy is practiced at an individual level, then perhaps this is morally distinct from Nazi state eugenics.<sup>62</sup> While there are plenty of state systems that are accepted e.g. childhood immunisations.<sup>63</sup> What was objectionable in the Nazi eugenics was the underlying aim of trait selection which is ultimately for what this would end up being used.<sup>64</sup> Even allowing individuals to believe they have a right to choose their children is just a manifestation of a wider societal outlook that we should be pursuing perfection – and not just disability elimination – and that we even understand what this means. Unlike some diseases which objectively result in poor quality of life, selecting positive traits is a subjective gamble.

Increasing inequality is another counter argument to this use of PGD. In order for parents to have a child with the best prospects, one will have to increasingly select for more and more traits to give them an edge over other selected children.<sup>65</sup> It would mean that every parent should use PGD when reproducing, which is unlikely to be possible, because if it is not seen as a medical intervention, it will probably be privately funded and thus unaffordable to some. It will also place a reproductive burden on women by entailing the taxing process of IVF.<sup>66</sup> Parents may also feel guilt for not being able to do for their children what

<sup>55</sup> Knox, R. (2003). Preimplantation Genetic Diagnosis: Disease Control or Child Objectification? *St. Louis U. Pub. L. Rev.*, 22, 434-53.

<sup>56</sup> Robertson, supra, note 4

<sup>57</sup> Davis, J. (2008). Selecting Potential Children and Unconditional Parental Love, *Bioethics*, 22, 258-68

<sup>58</sup> President's Council on Bioethics. (2004). *Reproduction and Responsibility: The Regulation of New Biotechnologies*, <http://www.bioethics.gov/reports/reproductionandresponsibility/index.html>, accessed 06/08/08, chapter 3, 7-8

<sup>59</sup> Wolpe, P. R. (1997). If I Am Only My Genes, What Am I? Genetic Essentialism and a Jewish Response, *Kennedy Inst. Ethic. J.*, 7.3, 213-230

<sup>60</sup> Hope, T. (2004). *Medical Ethics: A Very Short Introduction*. Oxford: Oxford University Press, 8

<sup>61</sup> Kass, L. R. (1997). The Wisdom of Repugnance, *New Republic*, 216(22), 17-26

<sup>62</sup> Glover, supra, note 7; Agar, N. (2004). *Liberal Eugenics: In Defense of Human Enhancement*. Oxford: Blackwell, 15

<sup>63</sup> Fox, D. (2008). Paying for Particulars in People-To-Be: Commercialisation, Commodification and Commensurability in Human Reproduction, *J. Med. Ethics*, 34, 162-6

<sup>64</sup> Gillott, J. (2001). Screening for Disability: A Eugenic Pursuit? *J. Med. Ethics*, 27, 21-23

<sup>65</sup> Hirsch, F. (1976). *Social Limits to Growth*. Cambridge, Massachusetts: Harvard University Press, 5

<sup>66</sup> de Melo-Martín, I. (2004). On Our Obligation to Select the Best Children: A Reply to Savulescu, *Bioethics*, 18(1), 72-83

other parents can.<sup>67</sup> If there is obligation only on those who can afford it,<sup>68</sup> a polarised society will result where some will have both biological and financial advantage and others neither.<sup>69</sup> This is likely to propagate a vicious cycle in which the privileged become more privileged and the disadvantaged more disadvantaged, occurring not just within but between societies and countries.<sup>70</sup> Whilst anti-discrimination education is possible,<sup>71</sup> the chances are that genetic selection would lead to raised expectations leading to diversion of societal resources to those most able to meet them.<sup>72</sup> Inevitably, those without selected traits will be discriminated against. Tacitly society is already saying something about the unselected, that children cannot be accepted for who they turn out to be and suggesting possible improvements. Perhaps society needs changing now.<sup>73</sup>

Parents will be burdened by the complex choice between embryos.<sup>74</sup> How do we know which desirable genes are linked to other less desirable ones? Parker<sup>75</sup> argues that procreative beneficence is underdetermining: how can the question ‘what is the best life?’ be reduced to a cluster of characteristics, ascertained from genes? Seeing genes as a *fait accompli* can be criticised,<sup>76</sup> which underplays environmental influence. Selecting embryos of a certain genotype will not ensure any phenotype as environmental factors can

unpredictably interact with genotype. Although both genes (directly) and environment (indirectly) permanently affect a person’s biological make up,<sup>77</sup> the environmental influence can be removed in a way that a genetic influence cannot, when it is no longer, or never was, desired. Ultimately, selection is self-defeating;<sup>78</sup> we would always be pursuing an impossible and insatiable perfection. If everyone used the technology, each person could be at an advantage compared to non-selected embryos but not compared to everyone else.<sup>79</sup> Furthermore, it could result in infertile couples feeling pressured to look for desirable gametes in order to keep up with everyone else, possibly leading to exploitation and degradation.<sup>80</sup>

Some people are born at a disadvantage due to their less desirable genes, the ‘genetic lottery’.<sup>81</sup> Selecting embryos could reduce this natural occurrence, creating a fairer society. However, these ‘disadvantages’ could be countered by society, ensuring that they are no longer setting people back,<sup>82</sup> reducing the need to anticipate which traits will be an advantage in the future.<sup>83</sup> Sometimes the good and bad *together* make for the good life and give it a value.<sup>84</sup> Genetic selection could reduce genetic diversity leading to disease and reduce phenotypic diversity leading to a more homogenous society. Part of what makes society work is that people have varying talents and abilities that complement each other. Arguably, with limited resources (a situation that is unlikely to change) we should be eliminating suffering and

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<sup>67</sup> Ibid

<sup>68</sup> Ibid

<sup>69</sup> Parens, E. Justice and the Germline, in Stock, G. & Campbell, J. (Eds.), (2000). *Engineering the Human Germline: An Exploration of the Science and Ethics of Altering the Genes We Pass to Our Children*. New York: Oxford University Press, 123

<sup>70</sup> Knox, supra, note 55

<sup>71</sup> Savulescu, supra, note 54

<sup>72</sup> Birch, K. (2005). Beneficence, Determinism and Justice: An Engagement with the Argument for the Genetic Selection of Intelligence, *Bioethics*, 19(1), 12-28

<sup>73</sup> Ibid

<sup>74</sup> De Melo-Martín, supra, note 66

<sup>75</sup> Parker, M. (2007). The Best Possible Child, *J. Med. Ethics*, 33, 279-83

<sup>76</sup> Birch, supra, note 72

<sup>77</sup> Chan & Harris, supra, note 48

<sup>78</sup> Parker, supra, note 75

<sup>79</sup> Buchanan, et al, (2000). *From Chance to Choice*. Cambridge: Cambridge University Press, 156

<sup>80</sup> Fox, supra, note 63

<sup>81</sup> Holtug, N. (1999). Does Justice Require Genetic Enhancements? *J. Med. Ethics*, 25, 137-43

<sup>82</sup> Daniels, N. The Genome Project, Individual Differences, and Just Health Care. In Murphy, T.F. & Lappe, M. A. (Eds.). (1994). *Justice and the Human Genome Project*. Berkeley: University of California Press, 125

<sup>83</sup> Farrelly, C. (2004). Genes and Equality, *J. Med. Ethics*, 30, 587-92

<sup>84</sup> Parker, supra, note 75

disease by selecting out the worst off<sup>85</sup> and selecting embryos that fit a decent minimum,<sup>86</sup> before we start looking to select a few people trivially at their cost.<sup>87</sup>

### Judaism and Designer Selection

As mentioned, unlike the secular naturalist argument of not interfering with nature, Judaism believes in humans using the world's resources for improvement. Rather than 'playing God', we are playing humans, reverentially and according to the script given.<sup>88</sup> However, we are responsible for the consequences of these manipulations because the objects of our actions don't belong to us alone. The basic tenet of Jewish attitudes to healing is that we do not own our bodies but are stewards to a God-given gift. Feinstein<sup>89</sup> argues whilst healing justifies interfering with humanity, we are not healing, merely selecting.

***Judaism  
believes in  
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improvement***

Judaism places emphasis on self improvement, not necessarily in terms of competitive traits, but ones like compassion which are God-given and therefore not for self-aggrandisement. Judaism also emphasises responsibility for ones own actions and freewill; genetic endowment does not exempt one from this.<sup>90</sup> The consequences of that freedom are trans-generational: the rewards and punishments for actions are visited on descendants<sup>91</sup> which means if the outcomes are uncertain, one should act with caution. This is

especially pertinent in an age of such technological advancement. As *Midrash Kohelet Rabbah* 7.13 says,<sup>92</sup> quoting God: 'Do not destroy what I have made, for if you do, there will be no one left to repair the damage'. Whilst Judaism may not be against enhancement per se, it may reject this technique as many of the justifications for its use are not present. Jakobovits<sup>93</sup> quoting Grunwald,<sup>94</sup> argues that one of Judaism's methods of human improvement is through marriage partner selection and the harmony of their characteristics. The Talmud<sup>95</sup> insists that marriage partners should be adjusted to each other so as to prevent phenomenally tall or short offspring suggesting a concern for altering humanity through PGD.

One concern, as mentioned above, is that dissatisfaction is an inevitable consequence of striving for unobtainable perfection.<sup>96</sup> Perhaps, however, the benefit of a Jewish approach is in its conception of perfection as a process rather than a goal: 'You are not obliged to finish the task; neither are you free to neglect it'.<sup>97</sup> The emphasis of Judaism is *self* improvement through effort, rather than the improvement of future generations through risky, genetic selection. So too, individuals should be judged on what they do with what they have and not on what they have alone.<sup>98</sup>

### Designer Children Legality

Currently as it is not possible to select blue-eyed, higher intelligence, or blonde hair embryos, one can look at the pre-existing law to gain an impression of the future legal direction when it is needed. Is existing legislation is tight enough to

<sup>85</sup> Rawls, J. (1999). *A Theory of Justice*. Harvard University Press: Cambridge, 21

<sup>86</sup> Buchanan, A. (1995). Equal Opportunity and Genetic Intervention, *Soc. Phil. Pol.*, 12, 129

<sup>87</sup> Holtug, supra, note 81

<sup>88</sup> Burack, J. H. (2006). Jewish Reflections on Enhancement, *J. Soc. Christ. Ethics*, 26(1), 137-62

<sup>89</sup> Feinstein, M. (1959). *Responsa Igrot Moshe, Even HaEzer*, 2, 18. New York: Moriyah

<sup>90</sup> Greenberg, R. (2000). Judaism and the Human Genome Project, *Jlaw*, <http://www.jlaw.com/Commentary/genome.html>, accessed 11/08/08

<sup>91</sup> Sh'mot, 34:6-7, Berlin, A. & Brettler, M. Z. (Eds.). (1990). *Jewish Study Bible*. New York: Oxford University Press

<sup>92</sup> Isaacs, R. H. (1999). *Exploring Jewish Ethics and Values*, New York: KTAV, 53

<sup>93</sup> Jakobovits, I. (1959). *Jewish Medical Ethics*. New York: Philosophical Library, 154

<sup>94</sup> Grunwald, M. *Biblische und Talmudische Quellen juedischer Eugenik* in Goslar, H. (1930). *Hygiene und Judentum*. Dresden: Jac. Sternlicht, 60

<sup>95</sup> Bechorot 45b, supra, note 13

<sup>96</sup> And in Sandel, M. (2004). The Case Against Perfection, *Atlantic*, 293(3), 50

<sup>97</sup> Tarfon, R. in: Kehati, P. (1999). *Pirkei Avot*. Jerusalem: Eliner Library, 2:15

<sup>98</sup> Akin to thoughts of Jamison, K. (1996). *An Unquiet Mind*. New York: Vintage Books, 17



tide society over until new legislation is required? What legal issues need to be considered when thinking of current and future law such as human rights and international consensus?

Only medically indicated PGD uses are currently permitted by the HFEA. Selecting in disability and selecting sex are prohibited while non-selection of serious and significant disabilities and creating saviour siblings are permitted. This suggests that the law's direction is that of precaution with regards to reproductive freedom and if it were possible to ascertain developing embryo's characteristics, this information would not be provided and/or would not be legal to use for embryo selection. However, consider the manipulation of statutory intention in *Quintavalle*,<sup>99</sup> with 'suitable' interpreted as disease-free and a tissue match, neither of which affect the pregnancy itself, nor the woman at the time, and arguably at any other time could be suitable to be placed in a woman. Examined in the light of this case, existing legislation against procreative choice no longer appears as tight. If suitable has been re-interpreted in this way, what is to stop other interpretations? One could argue that the 'significant' and 'serious' stipulation will hold, however, this itself has already changed post-Hashmi. While Governmental control has been written into the Act to legislate on new areas one could question their power as it is greatly influenced by society through public consultation as the poll highlighted.

Existing legislation has to be made tighter so that 'suitable condition' is better defined, explicating situations where embryos are and are not suitable. Waiting for the technology to exist before definition provision may result in errant interpretations which may or may not have been parliament's intention.<sup>100</sup> Parliament's approach seems to be one of caution which is prudent to clarify now when the technology is foreseen.

However there may be several practical problems with this.<sup>101</sup> As this use of PGD could be so society-changing, how do we know what will be just in that new society?<sup>102</sup> Can we legislatively restrict its use in the interest of distributive justice – perhaps the naturally-born will be considered a different species, one that is no longer owed any moral duty? However, if we wait, “by then, only the rich will be enhanced, and it is doubtful and altogether too dangerous to suppose that they would voluntarily share their advantages with anyone else”.<sup>103</sup> While the restrictions may be difficult to put in place now, the correct time for action should be worked out, requiring well designed surveillance mechanisms and constant vigilance.<sup>104</sup>

***dissatisfaction is an inevitable consequence of striving for unobtainable perfection***

As we have seen, the Jewish perspective towards sex selection could encourage a more permissive approach in some circumstances. However, Judaism's approach to creating designer embryos could lead to a much more prohibitive stance, which may be invaluable given the fast development and application of technology in this ethically contentious field.

<sup>99</sup> *Regina (Quintavalle) v Human Fertilisation and Embryology Authority (Secretary of State for Health intervening)* [2003] EWCA Civ. 667

<sup>100</sup> *Pepper v. Hart*, [1993] 1 All E.R. 42

<sup>101</sup> Lindsay, R. A. (2005). Enhancements and Justice: Problems in Determining the Requirements of Justice in a Genetically Transformed Society, *Kennedy Inst. Ethic. J.*, 15, 3-38

<sup>102</sup> Ibid

<sup>103</sup> Mehlman, M. J. (2005). Genetic Enhancement: Plan Now to Act Later, *Kennedy Inst. Ethic. J.*, 15, 77-82

<sup>104</sup> Ibid