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SEEKING PERFECTION: A KANTIAN LOOK AT HUMAN GENETIC ENGINEERING

ABSTRACT. It is tempting to argue that Kantian moral philosophy justifies prohibiting both human germ-line genetic engineering and non-therapeutic genetic engineering because they fail to respect human dignity. There are, however, good reasons for resisting this temptation. In fact, Kant's moral philosophy provides reasons that support genetic engineering—even germ-line and non-therapeutic. This is true of Kant's imperfect duties to seek one's own perfection and the happiness of others. It is also true of the categorical imperative. Kant's moral philosophy does, however, provide limits to justifiable genetic engineering.

KEY WORDS: Categorical imperative, dignity, genetic engineering, germ-line engineering, Kant

INTRODUCTION

Genetic engineering has generated philosophical as well as scientific interest. This is especially true of genetic engineering that affects future generations (germ-line engineering), and the use of genetic engineering to enhance abilities rather than to treat, diagnose or prevent disease or disability (non-therapeutic engineering). Many of the arguments against such forms of genetic engineering either appeal directly to Kant or have a Kantian ring. Some have argued, for instance, that germ-line genetic engineering is morally problematic because it involves treatment of future generations who have not consented to the treatment and thereby violates their autonomy.¹ Others have argued that germ-line engineering that seeks enhancement of individual abilities degrades humans by treating them merely as a means to the ends of those who have enhanced them and thereby violates their dignity.² Still others worry that germ-line engineering may lead to a “post-human future” in which human dignity is sacrificed.³

Contrary to such claims, I argue that Kant's moral philosophy provides a notion of dignity that is supportive of genetic engineering

including germ-line and non-therapeutic engineering. Kant's principles also provide limits to justifiable genetic engineering. I begin by considering moral issues and then take a closer look at putative Kantian objections to germ-line engineering. Finally, I turn to permissible state restrictions.

My paper adds to the work of Deryck Beyleveld and Roger Brownsword. Although Beyleveld and Brownsword have serious reservations about Kant's moral philosophy, they use the somewhat Kantian approach developed by Alan Gewirth to argue that there is a sense of dignity that is compatible with various forms of genetic engineering.⁴ I defend a similar point of view by relying on Kant's own moral philosophy.

Of course, it is not clear at the present time to what extent genetic engineering will be able to enhance the traits of future generations. While there is a genetic component to intelligence, for example, environmental influences are also a factor, and the genetic structures that are relevant for intelligence may be so complex as to defy manipulation. The same is true of temperament, such as the capacity to feel compassion. For purposes of this paper, I shall assume that such enhancement will eventually be both possible and safe. I make these assumptions so that I can focus on Kant's moral philosophy rather than empirical issues of cost-benefit analysis.

MORAL CONSIDERATIONS

According to Kant, "a human being has a duty to raise himself from the crude state of his nature, from his animality (*quoad actum*), more and more towards humanity, by which he alone is capable of setting himself ends."⁵ For Kant, humanity is rational moral agency—the ability to set morally justified ends for oneself and choose appropriate means to those ends. It is this that has dignity in the sense of worth beyond price, not our current crude state of nature.⁶ Kant was concerned with moving toward humanity through education and the cultivation of understanding and morally beneficial character traits.⁷ Although Kant could not have imagined genetic engineering, I argue that insofar as genetic engineering can supplement these efforts we have a Kantian reason for pursuing it.

This can be seen most clearly by considering Kant's notion of imperfect duties. Imperfect duties can be carried out in a variety of ways and do not require a specific action.⁸ According to Kant, we

have imperfect duties to seek our own perfection and the happiness of others.⁹ There are many different talents and capacities that could be cultivated in seeking one's own perfection and many ways in which one can seek the happiness of others. As a result, imperfect duties provide a goal with wide latitude for how the goal is to be carried out.¹⁰ Consider first the duty to seek one's own perfection.

One's Own Perfection

In general, Kant claims that the perfection of a person is the ability to set one's ends in accord with one's conception of duty.¹¹ According to Kant, it follows that we cannot have a duty to seek the perfection of another person because only that person can set his or her own ends.¹² In short, one's perfection is to be construed, in part, in terms of the abilities and dispositions that enable one to act as a moral agent. More specifically, Kant holds that we have a duty to cultivate our natural perfection by which Kant means to "cultivate [our] powers of mind and body so that they are fit to realize any ends [we] might encounter."¹³ Our duty to seek our own perfection also includes a duty to cultivate morality in the sense of striving to attain a state in which "the thought of duty for its own sake is the sufficient incentive of every action conforming to duty."¹⁴ For Kant, one also has an imperfect duty to oneself to take care of one's body so as to find satisfaction in living and not to deprive oneself of "what is essential to the cheerful enjoyment of life."¹⁵ Along these lines, Kant claims that we have at least an indirect duty to cultivate character and body so that we will be less likely to yield to the temptation to act contrary to our duty. Kant says, for instance, that there is an indirect duty to cultivate compassion and hence not to avoid sick rooms, debtor's prisons, and the like because compassion is an impulse "nature has implanted in us to do what the representation of a duty alone might not accomplish."¹⁶ This is similar to Kant's claim that we have an indirect duty not to be cruel to animals because such actions will harden us in our dealings with humans to whom we have direct duties.¹⁷

In short, imperfect and indirect duties to seek one's own perfection are directed towards developing traits and talents that make it more likely that one will be able to pursue a vision of the good within the dictates of morality. There are, of course, many ways in which we can cultivate these traits and thereby seek our perfection. Most obviously we develop them through education and conscientious moral

practice. In the future it may be possible to use somatic cell genetic engineering to further this project. (Germ-line engineering would be irrelevant because we do not have a duty to seek the perfection of others.) Genetic therapies that ameliorate disabling diseases are obviously important means of enhancing moral agency. More interestingly, somatic genetic enhancements that increase talents or intelligence or that modify temperament may also be of use. Therefore there is a reason based on Kant's moral philosophy for pursuing both therapeutic and non-therapeutic forms of somatic genetic engineering.

The Happiness of Others

According to Kant, our imperfect duty to seek the happiness of others gives us reason to help others attain such ends as reason permits, though we are not under a duty to sacrifice our own happiness or to help them attain ends that we do not truly believe will make them happy.¹⁸ Happiness, for Kant, is not simply an emotional state, but is connected with moral agency—attaining the morally permissible ends that one sets. Since different people acting as moral agents will set different ends, what constitutes happiness is largely determined by the individual.¹⁹

Even though each person's happiness will depend to a large extent on the ends he or she sets, Kant notes that there are some things that are important for happiness in people generally. In speaking of the indirect duty to seek one's own happiness, Kant notes that happiness includes skill, health, and wealth, and that the lack of these can produce a temptation to transgress one's duty.²⁰ It is not that skill, insight, and even health produce happiness in all cases, but that, as a rule, they tend to be important for happiness.²¹ This provides us with a reason to use genetic engineering to eliminate genetic diseases and disabilities, since these may make it difficult to pursue morally permissible ends or even to act in accord with the requirements of morality. It also provides a reason to use genetic engineering, including germ-line engineering, to enhance capacities that enable others to seek morally permissible ends and fulfill their duties.

While genetic engineering cannot determine character, which depends on human values and rational decisions, it can affect temperament, the underlying inclinations given by nature, that humans transform into character through the use of reason. Kant clearly distinguishes character from temperament and notes that while

temperament is given and purely passive, character is acquired by what the person makes of himself or herself.²² An extremely melancholic temperament or an extremely choleric (hot-tempered) temperament, to use Kant's terms, may in the future be amenable to genetic intervention. In addition, Kant notes that there are what he calls "affects," which are sudden feelings of pleasure and displeasure that thwart reflection.²³ These would, of course, undermine moral agency. They too may one day be amenable to genetic engineering. In the future it might also be possible to use genetic engineering to increase intelligence in certain areas. Genetic engineering to mitigate choleric and melancholic temperaments might also be useful in this regard. Note that such engineering might include germ-line as well as somatic cell engineering, enhancement engineering as well as therapeutic engineering. Insofar as genetic engineering can help to accomplish such things, the imperfect duty to seek the happiness of others and various indirect duties provide a reason to pursue it.²⁴

It is also interesting to consider Kant's views on mental illness in *Anthropology from a Pragmatic Point of View*. Kant notes that mental illness may be so severe that people need to be put in a mental asylum where they can be controlled by the reason of others. Clearly such severe mental illness vastly reduces, and in some cases even eliminates, moral agency.²⁵ Kant also notes that mental illness can be inherited and that it is dangerous to marry into families with even one mentally deranged person.²⁶ If germ-line genetic engineering could eliminate such mental illness or even ameliorate it, this would be a great boon for humanity in the Kantian sense of rational moral agency.

Categorical Imperative

The imperfect duties to seek one's own perfection and the happiness of others are generated by the Categorical Imperative. Kant gives the Categorical Imperative several formulations.²⁷ The first formulation requires that maxims be universalizable in the sense that they can consistently be willed to be universal law. This includes both conceptual consistency and volitional consistency or consistency in willing. The first thing to notice is that from the point of view of an individual considering the use of genetic engineering we need to look at the subjective principle from which he or she acts and not simply at the type of action. Maxims to the effect that genetic engineering, including germ-line and non-therapeutic engineering, be used to

enhance the talents and capacities of people so that they can pursue morally justifiable goals are universalizable, and it is permissible to act on such maxims. They do not produce conceptual inconsistency in the way that maxims to make false promises or to steal would. Nor do they produce inconsistency in willing. Willing that it be a universal law that genetic engineering be used to increase health or to enhance temperaments that support action in accord with morality would not undercut one's will.

The second formulation of the Categorical Imperative, which requires that we treat humanity (rational moral agency) in ourselves and others as an end and never merely as a means, would also permit a wide range of genetic engineering while setting some moral limits. Genetic engineering that enhances talents and capacities that enable one to pursue morally justifiable goals is permissible. For example, rational agents who decide to have children must adopt the goal of having healthy children who are able to become successful moral agents, since failure to adopt this as a goal would evince a lack of respect for the moral agency soon to be developing in one's child. In some cases germ-line engineering will be necessary for the health and well being of one's child. In such cases, the rational agent is committed to willing the use of genetic engineering.

It is worth noting that these Kantian reasons for genetic engineering do not rely on the distinction between germ-line and somatic engineering. Nor does it matter whether the engineering is used for purposes of enhancement or as therapy to treat, diagnose or prevent disease and disability. What matters is whether moral agency is enhanced or preserved.

Limits

There are, however, limits. Kantian moral philosophy places at least three sorts of limits on genetic engineering. The first concerns undermining humanity. It is especially clear on the second formulations of the Categorical Imperative that it would be impermissible to adopt a maxim to use genetic engineering to create a group of humans with superior capacities in order to oppress or limit the freedom of others. Nor would it be permissible to adopt a maxim to create people who have limited abilities so that they will be suitable for lives of servitude. Such maxims, if acted on, would obviously undermine the moral agency of the persons who were oppressed, since they would lose the opportunity to set their own ends and act on

them. Those who write futuristic nightmares involving genetic engineering often have this sort of thing in mind, and Kantians recognize this as a moral nightmare.

The second limit springs from the first formulation of the Categorical Imperative. Genetic engineering for purposes of enhancement should not be used merely to obtain a competitive advantage. Adopting the maxim that one use genetic engineering merely to obtain a competitive advantage over one's rivals would be volitionally inconsistent when willed to be universal law. If everyone had such an enhancement, no one would gain an advantage.

The third broad reason concerns unjustifiable risks. According to Kant, we ought not to risk our lives for mere private aims such as swimming across a lake to win a bet.²⁸ On the other hand, Kant is willing to risk life and limb when necessary to save a person or oneself, especially when required in order to avoid acting contrary to humanity.²⁹ The risks involved in genetic engineering, if not too great, can be justifiable when carried out to attain health or further one's ability to act in accord with morally justified ends. Genetic enhancements would not be justifiable on Kantian grounds, however, for purposes of fashion or personal whim unrelated to the ability to choose ends and appropriate means to attaining those ends. It is not clear precisely where the line is between acceptable and unacceptable risk. What is clear, however, is that reasons based on Kant's ethics can be given for adopting genetic engineering strategies that enhance moral agency. Risks and benefits must be evaluated in light of concrete proposals should they arise in the future, and the possibility of developing such proposals should not be eliminated on Kantian grounds at the present time.

PUTATIVE KANTIAN OBJECTIONS TO GERM-LINE ENGINEERING

It is worthwhile returning to objections against genetic engineering that appear Kantian on the surface in order to examine them in the light of the previous discussion.

Ends and Means

It is sometimes objected that germ-line genetic engineering treats those who are subject to it as merely a means to another's end—the

goals of the parents or the state. This argument can take several forms. It is sometimes pointed out that no one could consent to being genetically engineered from birth.³⁰ It is certainly true that subjecting an autonomous person to medical treatment without his or her consent is one way of treating that person merely as a means, but it does not follow from this that germ-line engineering restricts autonomy even though consent is not possible. In fact, talk about consent in the context of germ-line genetic engineering is a red herring. It is neither physically possible nor conceptually possible for the person treated with such engineering to consent. Consent functions to make permissible what would otherwise be impermissible. It is a normative tool for controlling the obligations of others. The person who has been genetically engineered can forgive those who did the engineering or accept the engineering, but cannot consent to the engineering.³¹

What really matters is whether the person's dignity as a moral agent has been respected. Engaging in germ-line genetic engineering with the sole purpose of enabling or even enhancing the future person's ability to set ends and choose appropriate means to attaining those ends respects the moral agency of the child who eventually becomes a moral agent. This is most clear in the case of therapeutic engineering. As Beyleveld and Brownsword note in spelling out the implications of Gewirth's theory, children born with impairments that could have been avoided by genetic engineering can claim that their dignity was violated.³² As previously observed, it can also be true in the case of enhancements in which temperaments that could threaten adoption of moral ends are moderated.

It has also been argued that germ-line engineering treats the children who are engineered merely as a means because it treats them as artifacts. According to Leon Kass, germ-line engineering and cloning are basically the manufacture of humans.³³ In a similar vein Hillel Steiner claims that genetic engineering may lead us to regard genes as artifacts rather than natural objects.³⁴ Another aspect of this argument is that the ability to exercise control over a baby's features brings with it responsibility for the features of the child and thereby the conceptual apparatus of liability and manufacture.³⁵

Justifiable germ-line engineering involves providing capabilities that the children will be able to use to good effect as they develop their moral agency and learn to set their own ends and choose reasonable means for attaining those ends. This is hardly treating the child as a mere means to the parent's end. Children born with genetic

enhancements may grow to have the capacity to be moral agents who adopt ends that are radically different from anything envisioned by their parents. As Joel Feinberg noted, we respect the rights of children by insuring that they have an open future in which they will be able to choose how to exercise the rights they have as adults.³⁶

It might be replied that the artifact argument concerns the attitude we will be led to take regarding children and not whether the children will actually be artifacts. There are, of course, good Kantian reasons to oppose viewing persons merely as products. If we view persons merely as products we are likely to treat them merely as a means to our ends in violation of the second formulation of the categorical imperative. It is possible, however, to use germ-line engineering without taking this attitude. This is what parents would do were they to use germ-line engineering in order to make it easier for the child to develop into a moral agent.

Inequality

Some have worried that genetic engineering may lead to an upper class of the GenRich and a lower class of Naturals. Lee Silver speculates that the day may come when the GenRich and the Naturals become separate species.³⁷ Since Kant is an egalitarian, one might imagine that this would constitute a devastating Kantian objection. Kant, after all, holds that all humans have dignity and are therefore equal in having worth beyond price. Their dignity resides in their humanity as rational moral agency, however, not in their having a similar genetic make-up as *Homo sapiens*. In addition, Kant's egalitarianism is compatible with wide disparities in wealth, property and abilities including intelligence. As Kant puts it,

This thoroughgoing equality of individuals within a state, as its subjects, is quite consistent with the greatest inequality in terms of the quantity and degree of their possessions, whether in physical or mental superiority over others or in external goods....³⁸

Aside from the obvious danger of exploitation and oppression, dramatic inequalities may, according to Paul Lauritzen, undermine morality by undercutting the compassion that depends on a sense of common humanity and that is vital for moral motivation.³⁹ To the extent to which this is true, we have a reason not to let inequalities become too great. This provides a Kantian reason for mitigating inequalities by making genetic engineering available to all. It does

not, however, provide a justification for prohibiting genetic engineering.

Natural Teleology

In the *Critique of the Power of Judgment*, Kant argues that in order to understand living organisms we need to view them as having an internal teleology according to which their parts function as both means and ends in the support of one another and the whole.⁴⁰ This has ethical implications for Kant. He argues that there are natural human functions that it is morally wrong to thwart. To will a world in which humans have a function that is used to undermine that very function is inconsistent, according to Kant, and hence a violation of the first formulation of the Categorical Imperative.⁴¹ Thus, one of the arguments he gives against committing suicide to avoid future misfortune is that it would undercut the natural tendency of self-love, the purpose of which is to further life.⁴² It might be argued along these lines that germ-line genetic engineering is also wrong because it would undermine the teleology of humans by turning them into post-human beings.

Whether or not one believes that these arguments are compatible with the principal tenets of Kant's moral philosophy, they do not provide a Kantian reason for rejecting genetic engineering. Kant's teleology does not require that every single aspect of the human species must be left unadulterated. To the contrary, he argues that much about human nature needs to be shaped and controlled. After all, Kant holds that the purpose of education is, in part, to shape crude human nature. The long-term purpose of humanity as rational moral agency is the perfection of moral agency, but this requires that some of the tendencies of living human beings be overcome.⁴³ How this would be accomplished by genetic engineering is a complex matter, and we do not know at the present time what techniques will be available. Nor is it certain just how temperament relates to character and moral agency. What Kant offers are general principles that can be used in evaluating proposed genetic interventions when they do become available.

Kant's teleological arguments in ethics concern drives that are necessary to preserve humans and thereby preserve the only form of rational moral agency that he was aware of. Hence they deal with the drive to continue living and the drive to procreate. Genetic engineering for purposes of enhancement need not interfere with these

aspects of persons, however. Even such “functions” as reproduction and the furtherance of life may eventually be enhanced and protected through genetic engineering. It is certainly not inconsistent to will as universal law that one use genetic engineering to further life or reproduction because one is motivated by the desire to preserve life or to procreate. In short, changing the human genome does not necessarily change the morally relevant core functions that Kant attributes to human beings.

STATE REGULATIONS

Kant makes a sharp distinction between what is morally forbidden and what can be legally forbidden. State power is capable of restricting behavior, but is not capable of compelling moral motivation or virtue. This is the point of distinguishing *The Doctrine of Virtue*, which deals with an individual’s maxims and virtue that cannot be coerced, from *The Doctrine of Right*, which deals with behavior that can be coerced. *The Doctrine of Right* turns on the Universal Principle of Right according to which “any action is *right* if it can coexist with everyone’s freedom in accordance with universal law.”⁴⁴ The state is justified in using coercion to prevent people from interfering with the right actions of others.⁴⁵ Justifiable state coercion is strictly limited, however. For Kant, all citizens of a state have equal citizenship in the sense that they have a right not to be coerced except by the head of state acting on the basis of laws to which they, as citizens, could have consented.⁴⁶ Restrictions on coercion are further supported by Kant’s strong anti-paternalist stance. At one point, for example, Kant claims, “a *paternalistic government*...is the greatest *despotism* thinkable” (emphasis in original).⁴⁷

The Universal Principle of Right provides a reason for allowing both non-therapeutic and germ-line genetic engineering that do not limit the freedom of others. The Universal Principle of Right also provides a reason to allow scientists and physicians to engage in genetic engineering as long as their efforts “can coexist with everyone’s freedom in accordance with universal law.”⁴⁸ At the same time, it provides justification for prohibiting genetic engineering that limits the right actions of others.

As previously noted, Kant also holds that public laws that restrict freedom must be laws to which those whose freedom is restricted could consent. People with genetic defects that will increase the

probability of having a child with a disability or disease that could be prevented by germ-line genetic engineering could not, as rational moral agents, consent to prohibitions on such engineering.

There is another aspect of regulation that needs to be mentioned. Roger Brownsword's recent work on regulation provides reason to believe that genetic engineering, if successful, could itself provide a way of regulating behavior that would undermine responsibility by removing the choice to act in ways that are morally wrong or illegal.⁴⁹ Brownsword contrasts regulation by creating rules that are enforced by penalties and regulation by designing the environment so that illegal behavior is impossible or extremely difficult. The later sort of regulation removes the possibility of choosing illegal behavior and hence, in Brownsword's view, diminishes responsibility.⁵⁰ One day genetic engineering may present the possibility of state regulation of behavior by eliminating choice. It should be clear, however, that appropriate Kantian regulation is regulation designed to enhance choice and this sets limits on the use of genetic engineering to regulate behavior by limiting choice.

Since it is not clear at the present time just what forms of genetic engineering will be available in the future, it is not clear just how freedom might be threatened by the use of genetic engineering techniques. As actual threats to freedom become clear, regulations to protect people can be adopted. The development of genetic engineering should not, however, be restricted on the grounds that it violates the categorical imperative or is, in itself, a threat to human dignity.

CONCLUSION

Many of the most passionately held arguments against genetic engineering are based on interpretations of Kant's moral philosophy. While Kant's moral philosophy imposes limits, it also provides reason for going ahead with both non-therapeutic and germ-line genetic engineering. In addition, Kant's moral philosophy admonishes us to keep in mind the difference between limits that ought to motivate us as individuals and limits that can justifiably be imposed by state coercion. In the end, thoughtful Kantian regulation of genetic engineering needs to occur gradually as science and experience progress.

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NOTES

¹ Jürgen Habermas, *The Future of Human Nature*, trans. W. Rehg, M. Pensky, and H. Beister (Cambridge: Polity Press, 2003), pp. 85–86; J. Harding, “Beyond Abortion: Human Genetics and the New Eugenics,” *Pepperdine Law Review* 18 (1991): 486–487; Marc Lappé, “Ethical Issues in Manipulating the Human Germ Line,” *Journal of Medicine and Philosophy* 16 (1991): 621–639. Fritz Allhoff gives a Kantian reply to Lappé’s argument in his article “Germ-Line Genetic Enhancement and Rawlsian Primary Goods,” *Kennedy Institute of Ethics Journal* 15 (2005): 49.

² Leon Kass, *Life, Liberty and the Defense of Dignity* (San Francisco: Encounter Books, 2002).

³ Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (New York: Picador, 2002).

⁴ Deryck Beyleveld and Roger Brownsword, *Human Dignity in Bioethics and Biolaw* (Oxford: Oxford University Press, 2001).

⁵ Immanuel Kant, *The Metaphysics of Morals*, in *Practical Philosophy*, trans. and ed. M. Gregor (Cambridge: Cambridge University Press, 1996), pp. 518–519 [6:387]. (I place in brackets the pagination of the standard German edition of the Royal Prussian Academy of Sciences for all of the works by Kant.) *The Metaphysics of Morals* contains both the *Doctrine of Right* and the *Doctrine of Virtue*.

⁶ Ronald Munson and Lawrence H. Davis also make this point in their article, “Germ-Line Gene Therapy and the Medical Imperative,” *Kennedy Institute of Ethics Journal*, 2 (June 1992): 143.

⁷ Immanuel Kant, *Anthropology from a Pragmatic Point of View*, trans. and ed. Robert B. Louden (Cambridge: Cambridge University Press, 2006), pp. 228 [7:324].

⁸ Immanuel Kant, *Groundwork of the Metaphysics of Morals*, in *Practical Philosophy*, trans. and ed. M. Gregor (Cambridge: Cambridge University Press, 1996), pp. 73 [4:421], footnote.

⁹ Kant, 516–518 [6:385–386], cited in n. 5, above.

¹⁰ Kant, 524 [6:394], cited in n. 5, above.

¹¹ Kant, 517–518 [6:394], cited in n. 5, above.

¹² Kant, 517–518 [6:386], cited in n. 5, above.

¹³ Kant, 522–523 [6:391–392], cited in n. 5, above.

¹⁴ Kant, 524 [6:393], cited in n. 5, above.

¹⁵ Kant, 571 [6:452], cited in n. 5, above.

¹⁶ Kant, 575 [6:457], cited in n. 5, above.

- ¹⁷ Immanuel Kant, *Lectures on Ethics*, trans. Peter Heath and ed. J. B. Schneewind (Cambridge: Cambridge University Press, 1997), pp. 212–213 [27:459]. The *Lectures on Ethics* were written by Kant's students, and may not reflect verbatim what Kant said in his lectures.
- ¹⁸ Kant, 519–520 and 524 [6:388 and 393], cited in n. 5 above.
- ¹⁹ Kant, 519, [6:388], cited in n. 5 above.
- ²⁰ Kant, *Critique of Practical Reason*, in *Practical Philosophy*, trans. and ed. M. Gregor (Cambridge: Cambridge University Press, 1996), pp. 214–215 [5:93].
- ²¹ Kant, 524–525 [6:394], cited in n. 5 above.
- ²² Kant, 192 [7:292], cited in n. 7, above.
- ²³ Kant, 149 [7:251], cited in n. 7, above.
- ²⁴ Fritz Allhoff also notes that the imperfect duty to seek one's own perfection constitutes a reason for genetic engineering, but applies this to both germ-line and somatic engineering. Allhoff, 50, cited in n. 1 above. Since germ-line engineering affects others, however, it is best dealt with under the imperfect duty of seeking the happiness of others.
- ²⁵ Kant, 97 [7:202], cited in n. 7, above.
- ²⁶ Kant, 111 [7:217], cited in n. 7, above.
- ²⁷ Kant discusses various formulations in the *Groundwork of the Metaphysics of Morals*. For the first formulation, see Kant, 73 [4:421], cited in n. 8, above. For the second formulation, see Kant, 79–80 [4:428–429], cited in n. 8, above.
- ²⁸ Kant, 149–150 [27:376–377], cited in n. 17, above.
- ²⁹ Kant, 149–150 [27:376–377], cited in n. 17, above.
- ³⁰ Habermas, cited in n. 1, above; Harding, cited in n. 1, above; Lappé, cited in n. 1, above.
- ³¹ Tziporah Kasachkoff, "Paternalism: Does Gratitude Make it Okay?" *Social Theory and Practice* 20 (1994): 18.
- ³² Beyleveld and Brownsword, 146, cited in n. 4, above.
- ³³ Kass, 159–160, cited in n. 2, above.
- ³⁴ Hillel Steiner, "Silver Spoons and Golden Genes," in *The Genetic Revolution and Human Rights*, ed. Justine Burley (Oxford: Oxford U. Press, 1999) pp. 146–147.
- ³⁵ Steiner, 145–149, cited in n. 34, above.
- ³⁶ Joel Feinberg, "The Child's Right to an Open Future," in *Whose Child: Children's Rights, Parental Authority, and State Power*, eds. William Aiken and Hugh La-Follette (Totowa, N.J.: Rowman and Littlefield, 1980).
- ³⁷ Lee Silver, *Remaking Eden: Cloning and Beyond in a Brave New World* (New York: Avon, 1997): 246–247.
- ³⁸ Kant, "On the Common Saying: That May Be Correct in Theory," in *Practical Philosophy*, trans. and ed. M. Gregor (Cambridge: Cambridge University Press, 1996), pp. 292 [8:291–292].
- ³⁹ Paul Lauritzen, "Stem Cells, Biotechnology, and Human Rights: Implications for a Posthuman Future," *Hastings Center Report*, 35(2) (2005): 29–30.
- ⁴⁰ Kant, *Critique of the Power of Judgment*, trans. Paul Guyer and Eric Matthews and ed. Paul Guyer (Cambridge: Cambridge University Press, 2000), pp. 242–249 [20:370–5:376].
- ⁴¹ For a discussion of the ethical implications of Kant's natural teleology, see Allen W. Wood, *Kant's Ethical Thought* (Cambridge: Cambridge University Press, 1999), pp. 215–225.

- ⁴² Kant, 74 [4:422], cited in n. 8, above.
- ⁴³ Kant, 228–229 [7:324], cited in n. 7, above.
- ⁴⁴ Kant, 387 [6:230], cited in n. 5, above; and Kant, 290–291 [8:290], cited in n. 38 above
- ⁴⁵ Kant, 388 [6:231], cited in n. 5, above.
- ⁴⁶ Immanuel Kant, 291–292 [8:291–292] and 297 [8:297–298], cited in n. 38, above. See also Immanuel Kant, “Toward Perpetual Peace,” in *Practical Philosophy*, trans. and ed. M. Gregor (Cambridge: Cambridge University Press, 1996), pp. 322–323, footnote [8:350, footnote].
- ⁴⁷ Kant, 291 [8:290–291], cited in n. 38, above.
- ⁴⁸ Kant, 387 [6:230], cited in n. 5, above.
- ⁴⁹ Roger Brownsword, “Code, Control, and Choice: Why East is East and West is West,” *Legal Studies: the Journal of the Society of Legal Scholars* 25 (2005): 1–21. See also Brownsword, “Neither East nor West, Is Mid-West Best?” (2006) 3:1 SCRIPT-ed15@:<http://www.law.ed.ac.uk/ahrb/script-ed/vol3-1/brownsword.asp> > Accessed on January 25, 2007.
- ⁵⁰ Brownsword, “Code, Control, and Choice,” 17–20, cited in n. 49, above; and “Neither East nor West,” 23–28, cited in n. 49, above.

REFERENCES

- Allhoff, F. “Germ-Line Genetic Enhancement and Rawlsian Primary Goods.” *Kennedy Institute of Ethics Journal* 15 (2005): 39–56.
- Beylveid, D., and R. Brownsword. *Human Dignity in Bioethics and Biolaw*. Oxford: Oxford University Press, 2001.
- Brownsword, R. “Code, Control, and Choice: Why East is East and West is West.” *Legal Studies: the Journal of the Society of Legal Scholars* 25 (2005): 1–21.
- Brownsword, R. “Neither East nor West, Is Mid-West Best?” (2006) 3:1 SCRIPT-ed 15 @: <<http://www.law.ed.ac.uk/ahrb/script-ed/vol3-1/brownsword.asp>> .
- Feinberg, J. “The Child’s Right to an Open Future.” In *Whose Child: Children’s Rights, Parental Authority, and State Power*. Edited by W. Aiken, and H. La-Follette pp. 124–153. Totowa, N.J: Rowman and Littlefield, 1980.
- Fukuyama, F. *Our Posthuman Future: Consequences of the Biotechnology Revolution*. New York: Picador, 2002.
- Habermas, J. *The Future of Human Nature*. Translated by W. Rehg, M. Pensky, and H. Beister. Cambridge: Polity Press, 2003.
- Harding, J. “Beyond Abortion: Human Genetics and the New Eugenics.” *Pepperdine Law Review* 18 (1991): 471–512.
- Kant, I. *Anthropology from a Pragmatic Point of View*. Edited and translated by Robert B. Loudon. Cambridge: Cambridge University Press, 2006.
- Kant, I. *Critique of the Power of Judgment*. Edited by P. Guyer and translated by P. Guyer and E. Matthews. Cambridge: Cambridge University Press, 2000.
- Kant, I. *Groundwork of the Metaphysics of Morals*. In *Practical Philosophy*. Edited and translated by M. Gregor. Cambridge: Cambridge University Press, 1996: 43–108.

- Kant, I. *Lecture on Ethics*. Edited by J.B. Schneewind and translated by P. Heath. Cambridge: Cambridge University Press, 1997.
- Kant, I. "On the Common Saying: That May Be Correct in Theory." In *Practical Philosophy*. Edited and translated by M. Gregor. Cambridge: Cambridge University Press, 1996: 279–309.
- Kant, I. *The Metaphysics of Morals*. In *Practical Philosophy*. Edited and translated by M. Gregor. Cambridge: Cambridge University Press, 1996: 355–540.
- Kant, I. "Toward Perpetual Peace." In *Practical Philosophy*. Edited and translated by M. Gregor. Cambridge: Cambridge University Press, 1996: 317–351.
- Kasachkoff, T. "Paternalism: Does Gratitude Make it Okay?." *Social Theory and Practice* 20 (1994): 1–23.
- Kass, L. *Life, Liberty and the Defense of Dignity*. San Francisco: Encounter Books, 2002.
- Lappé, M. "Ethical Issues in Manipulating the Human Germ Line." *Journal of Medicine and Philosophy* 16 (1991): 621–639.
- Lauritzen, P. "Stem Cells, Biotechnology, and Human Rights: Implications for a Posthuman Future." *Hastings Center Report* 35 (2005): 25–33.
- Munson, R., and L.H. Davis "Germ-Line Gene therapy and the Medical Imperative." *Kennedy Institute of Ethics Journal* 2 (1992): 137–158.
- Parens, E. ed. *Enhancing Human Traits: Ethical, Social Implications*. Washington, D.C: Georgetown University Press, 2007.
- Silver, L. *Remaking Eden: Cloning and Beyond in a Brave New World*. New York: Avon, 1977.
- Steiner, H. "Silver Spoons and Golden Genes." In *The Genetic Revolution and Human Rights*. Edited by J. Burley pp. 133–150. Oxford: Oxford University Press, 1999.
- Wood, A.W. *Kant's Ethical Thought*. Cambridge: Cambridge University Press, 1999.

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