

UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

AN ETHICAL STUDY OF GENETIC INTERVENTION BASED ON

RAWLSIAN JUSTICE AND ON BUDDHISM

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

Doctor of Philosophy

By

FUCHUAN YAO

Norman, Oklahoma

2006

UMI Number: 3230198



UMI Microform 3230198

Copyright 2006 by ProQuest Information and Learning Company.
All rights reserved. This microform edition is protected against
unauthorized copying under Title 17, United States Code.

ProQuest Information and Learning Company
300 North Zeeb Road
P.O. Box 1346
Ann Arbor, MI 48106-1346

AN ETHICAL STUDY OF GENETIC INTERVENTION BASED ON
RAWLSIAN JUSTICE AND ON BUDDHISM

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF PHILOSOPHY

BY

Edward Sankowski

Tom Boyd

Reinaldo Elugardo

Lesley M. Rankin-Hill

Zev Trachtenberg

Table of Contents

Chapter 1: The Western arguments for genetic intervention	1
Chapter 2: The underlying problem of the necessary connection between disease and fair equal opportunity	52
Chapter 3: The problem of the morally arbitrary distinction between genetic therapy and enhancement	101
Chapter 4: The Buddhist approach	181
Chapter 5: My approach and conclusion	229
Bibliography	238

Abstract

The primary purpose of my dissertation is to discuss the moral distinction between genetics based medical therapy and enhancement, using a combination of ethical ideas derived from Rawlsian justice and from Buddhism.

In general, this dissertation takes up basic issues in medical ethics, in moral philosophy generally, and in social and political philosophy, including the following areas: the limitations of a Rawlsian justice centered approach, the value of a Buddhist approach centered on compassion and questioning of craving, worries about the distribution of treatment of disease and worries about eugenics, cross-cultural, religious, and global or international aspects of health care policy, and the role of science in health care policy.

I first analyze the Rawlsian approach to a “moral arbitrariness” problem. Buchanan and his collaborators argue that there is a moral distinction between therapy and enhancement but that it is in a sense arbitrary (in the sense that I use that word). French Anderson and others contend that there is a morally significant line.

Second, I offer a Buddhist approach in examining the ethics of the arbitrariness problem. Buddhists argue that therapeutic intervention based on Bodhisattva’s compassion is obligatory and pure enhancement based on human “craving” is morally possibly justifiable in some cases but is not justifiable in other cases. Hence, there is a morally significant distinction between genetics based medical interventions that are therapeutic and that are enhancements, from one Buddhist perspective.

Finally, I offer my approach: therapeutic intervention based on Bodhisattva’s compassion is obligatory and pure enhancement based on justice as fair equal opportunity could be permissible or impermissible. The aims of my approach are to maintain the moral

distinction that Buddhists discern and to resolve certain weaknesses of the Buddhist approach.

An Ethical Study of Genetic Intervention Based on Rawlsian Justice and on Buddhism

Introduction

Allen Buchanan, Dan W. Brock, Norman Daniels, and Daniel Wikler develop an approach based on Rawls's theory to the ethical issue of genetic intervention in their book *From Chance to Choice—Genetics and Justice*. As genetic technology advances, the equal opportunity of natural assets as fairness becomes a more explicit social justice issue. For society to be just, every person should be able to function and compete normally, equally, and fully in a rational and well-ordered society. Therefore, society has an obligation to do whatever it can to be just in regard to some natural inequalities.

Madison Powers calls their approach the “modified social structure view.” Buchanan et al. say, “In this view, equal opportunity not only requires that competition be fair; it also requires efforts to bring people up to the threshold of normal functioning that enables them to compete under conditions of fairness.”¹ There are two other views: the brute luck view and resource egalitarianism.

In addition to the Western approaches above, do we have other alternatives? This is one of my main purposes—to offer a Bodhisattva's view and compare it to the Western approach. According to Buddhism, we “deserve” that with which we are born. If so, we cannot say that natural and social inequalities are unjust in terms of what is deserved. The Bodhisattva's view is quite different from the mainstream Western view.

I express some important differences between the Western and the Buddhist approach in the following tables and will explain them in later chapters. First, Buchanan et al.'s and

¹ Powers 2001, p. 74.

the Buddhist approach respond to different questions. Buchanan et al. try to answer this question: “Why ought we to do genetic intervention?” And their answers refer to justice—see Table 1. Buddhists try to answer a different and prior question: “Why do we want to do genetic intervention?”² And their answers are because of our compassion and craving—see Table 2.

Table 1	Why ought we to do genetic intervention?	
	Genetic Therapy	Genetic Enhancement
Buchanan et al.’s answers	Because of justice	Because of justice

Table 2	Why do we want to do genetic intervention?	
	Genetic Therapy	Genetic Enhancement
Bodhisattva’s answers	Because of compassion	Because of craving

A second important difference is whether there is a moral distinction between genetic

² The reason why this question is prior to Buchanan et al.’s is that to avoid moral hazard, it will be better if we know first why we want to do something and then seek the reasons why we ought to do it. For instance, consider Nazi eugenics. I believe that if the German people had known first why they wanted to do eugenics, they would have questioned more its moral status and then would have sought some reasons to justify why they ought to do it. Hence, if we ask Buchanan et al.’s question first, it seems that there is no need to ask the Buddhist one.

therapy and enhancement. Whether there is a moral distinction is the most essential issue in my dissertation since most of my arguments and ideas are related to it. Buchanan et al. say not really. The distinction is arbitrary and it is only useful to maintain a fair game so that people won't abuse medical resources and services. Besides this usefulness, we shouldn't expect too much of it. By contrast, Buddhists will suggest yes. There is a moral distinction between them since there are two different reasons why we want to do genetic intervention. And these two different reasons are how we can demarcate a difference between genetic therapy and enhancement. However, only compassion can be used to justify genetic therapy since compassion has a truly moral status. Craving cannot be applied to justify genetic enhancement since all cravings are morally neutral (at best) and thus have no truly moral status. There will be more discussion of this in Chapter 3.

A third important difference is in the moral status of genetic therapy and enhancement. Buchanan et al. argue that genetic therapy and enhancement may or may not be obligatory or permissible. Buddhists will argue that based on Bodhisattva's compassion, genetic therapy is obligatory and thus permissible. However, the moral status of genetic enhancement may or may not be obligatory. For to do genetic enhancement is our craving and our craving is at best morally neutral, which means that it may or may not be obligatory or permissible. I put the second and the third difference together into Table 3.

Table 3	Genetic Therapy		Genetic Enhancement	
	Buchanan et al.	Bodhisattva	Buchanan et al.	Bodhisattva
Obligatory/Nonobligatory	Not necessarily obligatory	Obligatory	Not necessarily obligatory	Not necessarily obligatory
Permissible/Impermissible	Not necessarily permissible	Permissible	Not necessarily permissible	Not necessarily permissible
Is there a moral distinction?	Bodhisattva: Yes, there is a moral distinction. Buchanan et al.: Not really. The distinction is arbitrary. Even if there is such a distinction, it is only useful for some purposes and we shouldn't expect too much of it (p.152).			

Finally, I suggest an approach that extracts the best ideas or arguments from each approach. It combines human emotion (Bodhisattva's compassion) and reason (Buchanan et al.'s justice) for the justification of genetic intervention. I suggest that we use Bodhisattva's compassion to justify genetic therapy and thus genetic therapy is obligatory and permissible, and that we use Buchanan et al.'s justice as fair equal opportunity to justify genetic enhancement, and genetic enhancement may or may not be obligatory or permissible. Table 4 shows my approach and the "Table of Contents" summarizes how I will proceed with my dissertation.

Table 4	Genetic Therapy	Genetic Enhancement
What justification do we use?	Use Bodhisattva's compassion	Use Buchanan et al.'s justice
Obligatory/Nonobligatory	Obligatory	Not necessarily obligatory
Permissible/Impermissible	Permissible	Not necessarily permissible

Chapter 1: The Western Arguments

In this chapter, I would like to (1) provide a brief history of the genetic intervention debate, (2) clarify the relation between equality and justice, (3) explain four kinds of unequal opportunity and four kinds of genetic intervention, (4) describe Buchanan et al.'s arguments and positions, and (5) raise some concerns and conclude this chapter.

I. The history of the genetic intervention debate

Before discussing Buchanan et al.'s arguments, it would be interesting and important to know at least some history about the genetic intervention debate. According to John C. Fletcher, ethical issues generally evolve through four stages: a threshold situation, open conflict, extended debate, and adaptation. At the first stage, there exist conditions of moral conflict. That is, people perceive that there are different beliefs or controversies and acknowledge a need to decide what the relevant moral obligation is. At this threshold stage, intelligent philosophers or prophetic individuals propose ethical problems that will be recognized widely only later on. In the stage of open conflict, we may have some significant or even notorious cases that summarize what was predicted before. Different moral convictions collide and may lead to a right or wrong conclusion about what we should do morally. In the third stage of extended debate, social and ethical debates spread, and usually philosophers attempt to clarify moral views. If we are logical and don't let emotions overwhelm us about the moral issues, then we may have an overlapping consensus about what ethical principles and practices we should use and test. Meanwhile, we are ready to support and back up the lines drawn. In the last stage, we adapt the moral lines drawn before and public policies are adjusted and shaped by them. After the final stage, all new cases can help test and clarify the moral lines. If there are any consistent or contradictory cases relevant to the moral lines, we either strengthen or revise them

respectively. Under this interpretation, it is necessary and important for us to be able to draw some clear and clean moral lines, which is contrary to Buchanan et al.'s arguments.

For somatic cell gene therapy, the threshold was Marshall Nirenberg's appeal in 1967. In 1967, Marshall Nirenberg, a Nobelist, was the first to point out the bright future and danger of newly acquired genetic knowledge. The open conflict centered around two early controversial cases: those of Rogers (1969) and of Cline (1980).³ The extended debate was from 1980 to 1990. There were three primary concerns. (1) Did this new genetic technology pose any moral challenges? (2) Was it possible to draw moral lines about gene therapy? (3) Could society control this technology? The final stage--adaptation, i.e., public policies for somatic gene therapy, was done before 1990. That is, society had an overlapping consensus in Rawls's phrase with regard to somatic gene therapy. In 1985, the National Institutes of Health (NIH) in the US added a Human Gene Therapy Subcommittee that was chaired by LeRoy Walters and the Subcommittee published a paper "Points to consider in the design and submission of human somatic-cell gene therapy protocols." This publication defined what somatic-cell gene therapy and germ-line gene alterations or modifications were, drew an important moral demarcation between them, and adapted it to the public policy.⁴

Also, according to LeRoy Walters, we might have had an overlapping consensus not only in the US but also internationally regarding gene therapy by the year 1990. He collected and identified 20 statements from 1980 to 1990 by legislative bodies, government agencies or committees, professional organizations, and religious groups from Denmark, Sweden, German Federal Republic, Australia, the Parliamentary Assembly of the Council

³ See Fletcher's for more details.

⁴ John Fletcher 1990, p. 66.

of Europe, the World Medical Association, the Catholic Church, and the World Council of Churches. All twenty statements accepted the moral legitimacy of using somatic gene therapy to cure disease. However, as to germ-line gene therapy, the majority of them were against it, and as to genetic enhancement of human capabilities, none of them was willing to support it.

For germ-line gene therapy, LeRoy Walters suggested that the time is ripe for a detailed public discussion. There were several reasons this discussion was said to be needed. First, people in this country and abroad gradually began to use preimplantation diagnosis in *in vitro* fertilization (IVF) programs to test such as sickle cell anemia and cystic fibrosis. Second, the technology was here. Geneticists were able to produce phenotypic modifications in animals and they also showed that there was a possibility of transmitting specific genetic characteristics to the offspring of those transgenic animals even though it was still less predictable. Third, people started to change their minds and attitudes about genetic intervention to cure disease. Genetic intervention was a taboo in the early 1980s. Therefore, based on these three reasons, it was a ripe time to have an open public discussion.

In addition, according to Eric T. Juengst, ethical analyses of genetic engineering began around 1970. He does not use Fletcher's four stages of ethical evolution. Instead, he uses Whitehead's three stages of inquiry from Chapter II of "The Aims of Education": Romance, Precision, and Generalization. Whitehead describes the romantic stage of inquiry as follows,

The subject has the vividness of novelty; it holds within itself unexplored connexions with possibilities half-disclosed by glimpses and half-concealed by the wealth of material. In this stage knowledge is not dominated by systematic procedure. Such system as there must

be is created piecemeal ad hoc.⁵

Juengst observes that the debate had moved over the threshold of the second stage.⁶ He identifies five arguments in favor of developing human germ-line therapy and five arguments against such a proposal.

A. Arguments for germ-line therapy:

- (1) Medical utility: Since some non-genetic treatments will have only palliative results, germ-line therapy can offer hope for a true cure for many genetic diseases.
- (2) Medical necessity: For some genetic diseases, germ-line therapy may be the only effective way to treat them.
- (3) Prophylactic efficiency: Germ-line therapy is safer and less costly than somatic gene therapy to prevent genetic diseases from being passed down to multiple generations.
- (4) Respect for parental autonomy: When parents request germ-line therapy, we should respect their autonomy.
- (5) Scientific freedom: A scientific freedom to inquire should be protected and respected as long as the subject matter of inquiry is permissible.

B. Arguments against germ-line therapy:

- (1) Scientific uncertainty and clinical risks: Germ-line therapy is still unpredictable and thus it may not be safe for future generations.
- (2) Slippery slope to enhancement: Once the technologies of germ-line therapy are developed, it will eventually open the door to enhance human traits, which could make social discrimination or inequalities worse.

⁵ Juengst 1991, p. 587.

⁶ Ibid., p. 589.

- (3) Consent of future generations: Germ-line therapy will definitely affect future generations but it is impossible to know whether they would agree or not.
- (4) Allocation of resources: Germ-line therapy could be so expensive that society may not have enough resources to support it.
- (5) Integrity of genetic patrimony: Future generations have a right to inherit a genetic endowment that is not intentionally modified.

Ted Peters also offers three concerns against germ-line therapy. (1) A technical problem. Although we have this novel technology, it is still not 100% safe to use it. Some unexpected or unpredictable deleterious consequences may still happen. This is the same as Juengst's (1). (2) It is often associated with the terrible Nazi program of eugenics. This is a new concern. (3) An ethical worry. The use of germ-line modification will exacerbate existing social inequalities or discrimination. This is almost the same as Juengst's (2).

Nelson Wivel and LeRoy Walters also identify four arguments for germ-line modification and four against it.

A. Arguments for germ-line modification:

- (1) Health professions have a moral obligation to use the best available treatments and germ-line therapy could be the only effective way.
- (2) We should respect parental autonomy and their access to available technologies to have a healthy child.
- (3) It is more efficient and cost-effective than somatic gene therapy. For instance, it is more efficient than the repeated use of somatic gene therapy over successive generations.
- (4) We should respect the intrinsic value of scientific knowledge and our freedom to pursue it.

B. Arguments against germ-line modification:

- (1) It is an expensive intervention with only limited applicability.
- (2) There are alternative strategies to prevent genetic diseases. For instance, to improve strategies of preimplantation and prenatal genetic diagnosis.
- (3) It has unpredictable risks and may involve irreversible mistakes. In general, its unpredictable risks are much greater than those of somatic gene therapy since the side effects of the latter are most likely confined to the current patient, not extending to future generations.
- (4) It will inevitably lead to the use of germ-line enhancement because of the slippery slope argument.

Wivel and Walters' arguments identified above are covered by Juengst's. There is nothing new. However, LeRoy Walters and Julie Palmer offer more discussion. They discuss five arguments for germ-line therapy and eight against it.⁷ Briefly, there is a new concern that is not covered by Juengst or Peters: the concern of playing God. Walters and Palmer say, "It implies that there are built-in limits that humans ought not to exceed, perhaps for theological or metaphysical reasons and at least hints that corruptibility is an ever-present possibility for the very powerful."⁸ They also mention another concern that is already covered by Peters but not by Juengst: the concern about Nazi eugenics.

Finally, for somatic or germ-line enhancement, since I couldn't find any good sources discussing its history, it is difficult to say what stage we are in. LeRoy Walters and Julie Palmer examine five potential types of enhancement and argue for them: size, sleep, aging, memory, and aggression (pp. 101-107). Since they argue them case by case, their approach

⁷ Wivel and Walters 1993, pp. 80-86.

⁸ Walters and Palmer 1997, p. 84.

is not as systematic as Buchanan et al.'s. David Resnik explores this issue from three perspectives, our humanness, the rights of the unborn, and eugenics, and then concludes that genetic enhancement is not inherently immoral. Some forms of genetic enhancement are unacceptable, e.g., involuntary sterilization of the mentally disabled but some are permissible, e.g., the enhancement of one's immune system to fight disease. I will discuss his arguments in Chapter 3. Regarding the stage of genetic enhancement, I assume that we are still in the third stage of extended debate in Fletcher's terms since we are still arguing about whether there is a moral line between genetic therapy and enhancement.

II. The relation between equality and justice

Since equality is an essential aspect of justice that Rawls, Daniels, and Buchanan et al. all rely on, I would like to explore the relation between equality and justice first.⁹ At the end, I offer two examples to show how easily we could make such a mistake without knowing it.

According to Buchanan et al., in general, there are four concerns of a theory of justice or of justice for health care: equality, liberty, efficiency, and the allocation of resources (pp. 127-128). Although justice focuses more on equality, we need to consider liberty and efficiency to prevent "leveling down" people's talents or capabilities. We cannot level down those better off to the level of those worse off. It is not fair for the former and it is inefficient for social productivity. Also, we need to consider social resources. Since we don't have enough resources to give everyone an equal share, how to distribute resources justly is important too.

⁹ Larry S. Temkin suggests that equality is an important aspect (or a component) of a larger notion of justice (p.72).

Among these four concerns, I suggest that efficiency itself as well as Buchanan et al.'s argument of going beyond equal opportunity should not be in the scope of justice, as Buchanan et al. agree that the latter is a consideration of social productivity, not justice. For efficiency is a means to the end of a well-off society. It itself has nothing to do with justice. It is needed to prevent leveling down those who have better opportunities. It may be argued that it would be unjust to level down those who are better off. If this is the case, then it is a valid argument. For what is the justification allowing us to level down people, including those better off? It is not a fair action to level down people. However, if we are only concerned about efficiency because it makes the society as a whole worse off, not because it levels down those who are better off, then it is not in the scope of justice but a consideration of social productivity. In addition, it is an interesting question to ask, "What if we assist those who are already better off to increase social productivity?" There is some tension between justice and social productivity. I think that Buchanan et al.'s answer will be: As long as this assistance doesn't make those already worse-off more worse-off, we should consider it. For it won't be unjust to those worse-off and it is good for the society as a whole. If it is not the case, then the consideration of justice should be more important than that of social productivity. Also, they argue that we should go beyond equal opportunity to remove some disadvantages; for instance, to vaccinate people to improve their immune system or to genetically intervene with people to improve their reading and math skills, and memory, etc. These improvements are not considerations of justice any more. If so, then what is the justification for them? Buchanan et al.'s answer would be social productivity. They say, "Our arguments would turn on the effects on equality of opportunity and on consideration of social productivity."¹⁰

¹⁰ Ibid., p. 152 and pp. 186-187.

Under their interpretation, equality is only a necessary but not sufficient condition of justice. Buchanan and his co-authors say, “Being a treatment is thus not a sufficient condition for our being obliged to provide a service to people. Still, we might believe that being a reasonably effective treatment for a disease or impairment is still a necessary condition.”¹¹ Nevertheless, neither theirs nor Larry Temkin’s is the kind of relation that I would like to explore. I am more interested in the question, “Equality of what?” That is, I will focus on its incompleteness rather than any issue about necessary or sufficient conditions.

We might think that equality means justice. Put them in logical terms: equality (E) holds if and only if justice (J) holds. That is, if something (or doing something) is equal, then it is just, and if not equal, then it is not just. The first statement seems true intuitively. However, it is incomplete. We need to be more specific about what the “something (or doing something)” is. In general, if the “something (or doing something)” means some good thing or benefit, then there is no problem. For instance, we would really like to respect people equally and to have equal access to health care. If we could do that, then everyone might agree that it is just. If not, it is unjust. (This is the second statement.) But if it means something not good, then it may not be true. For instance, is it just if we punish people equally for a crime? At first thought, it seems so. However, it might not. Suppose that there are two very close friends or relatives. Both are charged with a crime but only one of them committed the crime. Due to their close friendship or relationship, neither of them will tell who did it. A criminal must be punished but whom should we punish? Since we don’t know who did it, should we punish both equally? But it will be unfair or unjust to the one who didn’t commit the crime. If so, it won’t be a just retribution. We might say that

¹¹ Ibid., p. 120.

it doesn't matter since neither will tell the truth and thus both "deserve" the same punishment. But this argument is wrong. They deserve to be punished for the crime of killing, not because of not telling the truth. We would punish one of them for not telling the truth. Rationally and logically, we might say that one of them should tell the truth. Agreed, but sometimes human nature or action is illogical and irrational. Therefore, the first statement is incomplete.

The second statement is also incomplete. And more importantly, besides the incompleteness, it might not be true, especially related to natural or social inequalities. This second statement is what some Western political philosophers, including Rawls, believe and use to build their theories. Based on this unjust idea of the second statement, Rawls develops his Difference Principle to justify some social and economic inequalities. Rawls's Difference Principle states: social and economic inequalities should be arranged to maximize benefits to those who have the least advantages, which also means that some inequalities are not unjust if they meet the requirement of this principle. From the Western view, they are right since it is difficult to argue why it is not true. For instance, how can we justify the claim that social or natural inequalities are just? Norman Daniels says,

The point, as noted above (p. 40), is that none of us *deserves* the advantages conferred by accidents of birth—either the genetic or social advantages. These advantages from the 'natural lottery' are morally arbitrary, because they are not deserved, and to let them determine individual opportunity--and reward and success in life--is to confer arbitrariness on the outcomes.¹²

In addition to these logical and semantic analyses above, in Rawls's book *Theory of Justice*, Rawls never suggests that E if and only if J. (Neither do Daniels and Buchanan et al.) His theory is based on fairness, not on equality. Therefore, it is a mistake to think that E

¹² Daniels 1985, p. 46. Also, see Holtug 1999, p. 143.

if and only if J. The following two examples show how easily we can make such a mistake without knowing it, including Buchanan et al. themselves.

For example, when Buchanan et al. give an example to show that the distinction between treatment and enhancement does not coincide with the boundary of obligatory and nonobligatory, they say,

Society may--indeed does—have certain moral or legal obligations to offer medical services that do not involve the treatment of disease. For example, we would argue (were this the occasion) that *society's obligations to respect the equality of women* compel it to make abortion a covered service in a national benefit package, just as it is already a covered service in most existing private insurance in the United States.¹³

Also on the same page, “If we are right that nontherapeutic abortion services should be included in standard benefit packages *because of concerns about the equality of women*, then ...” They have only equality in mind rather than equal opportunity or fairness in these statements. However, they later explain, “The reason for including it has nothing to do with treating a disease or impairment since an unwanted pregnancy is neither a disease nor an impairment *but rather the result of normal functioning*.” In this explanation, Buchanan et al. have justice as fairness or equal opportunity in mind rather than merely equality itself. Hence, Buchanan et al.’s statements are vague and we don’t know their exact reasons for dealing with the unwanted pregnancy. I examine in detail the issue of unwanted pregnancy in Chapter 3.

Also, when Ted Peters argues for germ-line modification by pointing out the existing problems of social and economic inequalities, he says, “Human equality, then, is something we are striving for, something that does not yet exist but ought to exist. Equality needs to be created, and it will take human creativity under divine guidance to establish it, plus

¹³ Ibid., p. 120.

vigilance to maintain it when and where it has been achieved.”¹⁴ Peters has equality in mind at times rather than equality of opportunity or fairness. His claim about equality is too vague to let us know what we should really strive for.

III. Four kinds of unequal opportunity and four kinds of genetic intervention

According to Buchanan et al., there are three kinds of views about unequal opportunity. First, the social structural view: this view requires that something be done to counteract the social and economic unequal opportunities that originate in unjust institutions.¹⁵ For instance, to provide an equalizing education is an example of this view. It mainly concerns social and economic inequalities. Second, the brute luck view: “The latter does: Equal opportunity, on the brute luck view, requires efforts to counteract the effects of all factors beyond an individual’s control.”¹⁶ It is an expansion of the first view since it covers both social matters and facts about the natural lottery that are beyond one’s control. The third is resource egalitarianism: All resources ought to be distributed equally among people. This is an expansion of the second one. If all resources ought to be distributed equally and if we assume natural endowments are resources, then we are obliged to intervene in the natural lottery because it would be the best (and perhaps the only) way to equalize resources.¹⁷ It doesn’t matter whether it is beyond one’s control or not. Therefore, this view is broader and stronger than the brute luck view.

Even though Buchanan et al. call theirs the “social structural view,” I would like to

¹⁴ Peters 1995, p. 378.

¹⁵ Ibid., p. 74.

¹⁶ Ibid., p. 67.

¹⁷ It is problematic to define natural endowments as “governmental resources.” If they were, then who is supposed to control them? LeRoy Walters and Julie Palmer propose three ways to do this: (1) Robert Nozick’s supermarket, (2) a central planning mechanism, and (3) Jonathan Glover’s mixed system with parents’ initiative and a central veto to avoid overdoing. (1997, p.129)

suggest that Buchanan et al.'s view is between the social structural view and the brute luck view. For there are several differences between Daniels's social structural view and Buchanan et al.'s. See my third concern in V below. Madison Powers calls theirs the "modified social structural view." So there should be four views rather than three views. Buchanan et al.'s view doesn't require institutions to put in every effort to counteract all natural inequalities as long as those inequalities are still just.

Buchanan et al. argue that their approach is better than the brute luck view and resource egalitarianism for three reasons (p. 148). First, theirs is the closest to the original political conception of equal opportunity widely held in a just society. The original political conception of justice has three features. (1) Although it is a moral conception, it is developed and applied only to a specific subject; for instance, basic democratic institutions. (2) People accept this conception because of some fundamental and intuitive ideas. For example, people are free and equal persons capable of fully cooperating over time, living in a just society that allows social cooperation from generation to generation. (3) It is necessary to presuppose this to accept a comprehensive moral doctrine. However, this doctrine need not be compromised and revised to fit into the existing comprehensive one (p. 147). Second, theirs is not uniform. A uniform view requires us to use one central principle or rationale such as "beyond one's control" or "Equal Resources Principle." Third, theirs can support the other two views but not vice versa since theirs is the basic one among these three views.

Buchanan and his associates reject the brute luck view because it expands the domain of equal opportunity so much that people won't feel comfortable with it and for some, it is implausible. They say, "The brute luck view, however, seems to require just such a profound expansion of the domain of equal opportunity. For some, this expansion will

seem implausible, if only because it seems to sever the notion of equal opportunity from its historical roots in the idea of ‘careers open to talents.’”¹⁸ Buchanan et al. also refute resource egalitarianism because (1) it focuses on the wrong principle, (2) it is incompatible with individual liberty, (3) traits depend on what the dominant cooperative framework favors, and (4) it is incompatible with value pluralism.¹⁹

First, according to Buchanan et al., John Roemer thinks that the primary task for resource egalitarianism is to construct a resource allocation mechanism. Therefore, he offers the Resource Compensation Principle (RCP): We ought to compensate those with fewer natural assets by redistributing social resources to them (p. 76). However, this is not what resource egalitarianism should focus on. It should focus on the Equal Resources Principle (ERP) rather than the RCP. For what resource egalitarianism asks for justice is the ERP, not the RCP. Second, since the ERP demands so much, it might overrule the individual autonomy. For there is some genetic intervention that might not require treatments. But since the ERP requires so much, it leaves individuals no choice but accept treatments. If so, obviously it doesn’t respect one’s autonomy. Third, resource egalitarianism will have a problem to decide what counts as a natural asset (or trait) or deficit because traits depend at least partly on social structure—the dominant cooperative framework. Also, since the social structure will change over time, the value of various traits will also change. Therefore, how to decide what counts as a trait or deficit in a society is difficult. Fourth, since the ERP requires all genetic endowments to be equal, eventually, everyone will get the same natural endowment. If so, genetic diversity or pluralism will no

¹⁸ Ibid., p. 75.

¹⁹ The brute luck view may also have problem (3) and (4). But it is not as problematic as resource egalitarianism, according to Buchanan et al.

long exist, which is not a good thing for the flourishing of human beings.

Generally speaking, there are four kinds of genetic intervention.²⁰ The following Table 5 shows them.

Table 5	Somatic	Germ-line
Genetic Therapy	SGT	GGT
Genetic Enhancement	SGE	GGE

SGT (Somatic Gene Therapy) and SGE (Somatic Gene Enhancement) attempt to modify somatic cells, which will affect only existing persons; GGT (Germ-line Gene Therapy) and GGE (Germ-line Gene Enhancement) attempt to modify germ-line cells, which will affect future generations. SGT is applied to cure or prevent a disease. Its intervention involves the correction or attempted correction of genetic defects in somatic cells that won't be passed to the next generation. For example, there can be insertion of cytokine genes, such as interleukin-2, into a patient's malignant somatic cells to produce an immune response.²¹ SGE is also applied to somatic gene cells in existing persons. However, its purpose is to enhance some physical or mental traits to have better capabilities; for instance, the enhancement of growth hormone to be taller. GGT is done to intervene in germ-line or reproductive cells to prevent disease for existing persons and future generations. This is a better solution than SGT when a disease will be passed down from generation to generation; for instance, Lesch-Nyhan syndrome, sickle cell anemia, and

²⁰ Gerd Richter & Matthew D Bacchetta offer a more complicated diagram of six kinds of genetic intervention. Since the argument we use won't be affected by the absent two, most genetic ethicists, for example, Nelson Wivel and LeRoy Walters, choose this simpler classification.

²¹ Nelson Wivel and LeRoy Walters 1993, p. 533.

cystic fibrosis. GGE is applied to enhance some physical or mental abilities or traits that could be passed on to succeeding generations. In general, it does not aim to cure or prevent genetic diseases. And this is the most controversial one.

IV. Buchanan et al.'s arguments and positions

John Rawls offers two principles in his book *Theory of Justice*. He writes,

First, each person is to have an equal right to the most extensive scheme of equal basic liberties compatible with a similar scheme of liberties for others. Second, social and economic inequalities are to be arranged so that they are both (a) reasonably expected to be to everyone's advantage, and (b) attached to positions and offices open to all.²²

The first principle states that everyone has an equal liberty and should respect others' liberty in the same manner. The second is called the Difference Principle. If there are any social or economic inequalities, a just society should arrange its institutions and make its policies to benefit those who have the least advantages, and to make sure that social positions are open equally to all qualified people. Norman Daniels in his book *Just Health Care* points out an underlying problem of Rawls's theory and develops a thesis of a right to health care. Rawls assumes that people in a well-ordered society are all well and capable of participating. Daniels says, "In effect, there is no distributive theory for health care because no one is sick!"²³ What if people are sick or not functioning normally? Since it is necessary that people be able to compete and participate, a theory of justice should include a right to health care. That is, if one is not functioning normally, then he or she has a right to health care. In my opinion, there are several problems with his arguments. First, what counts as functional normality is very controversial. I will discuss this problem in Chapter 2. Second, Daniels's claim that everyone has a right to health care may be too strong and unrealistic

²² Rawls 1999, p. 53.

²³ Daniels 1985, p. 43.

since our resources are limited. It is possible in theory but not in practice. Third, his claim may not be right. For sometimes, it is not necessary to function normally to participate or even to compete. For instance, we may say that a genius has abnormal functioning but he or she should have no problem with participating or competing; on the contrary, he or she might even have an advantage in competing.

Buchanan et al. follow Daniels's account to argue for genetic intervention. They say, "In this view, equal opportunity not only requires that competition be fair; it also requires efforts to bring people up to the threshold of normal functioning that enables them to compete under conditions of fairness."²⁴ To be just in a rational and well-ordered society, every person should be able to function fully and to compete equally based on justice as fair equal opportunity. The government of the well-ordered society has an obligation to meet this requirement. Basically, their arguments go like this. First, following Daniels's definition of disease (and Daniels follows Christopher Boorse's definition), Buchanan et al. use a definition of disease as follows: "Disease consists of conditions that are adverse departures from normal species functioning."²⁵ Second, they assume that disease will affect one's equal opportunity to function fully and to compete fairly in a social structure that has a dominant cooperative framework. If so, then, based on equal opportunity, genetic intervention is required to remove that disease. Also, even if a natural inequality is not a disease, as long as it affects one's opportunity to function fully and to compete equally, justice as equal opportunity requires us to remove that barrier too. Buchanan et al. say in their introduction,

A deeper and more perplexing question is whether equal opportunity may require or permit

²⁴ Ibid., p. 74.

²⁵ Ibid., p. 72.

genetic interventions for the sake of preventing natural inequalities that do not constitute disease. On the account we endorse, health care does not include everything of benefit that biomedical science can deliver. Health care, so far as it is a concern of justice, has to do only with the treatment and prevention of disease. However, we argue that some versions of the level playing field conception extend the requirements of equal opportunity, at least in principle, to interventions to counteract natural inequalities that do not constitute disease.²⁶

To summarize, justice as equal opportunity requires us to remove genetic inequalities that could be disease or impairment, which will affect one's fair equal opportunity to compete and to function fully; furthermore, in some cases, we need to go beyond equal opportunity to remove disadvantages that are not disease or impairment (p. 124). Also, Buchanan et al. write,

Interpreted in this way, there is no reason to think that Rawls's account or Daniels's extension of it to health care would rule out sometimes being obliged to use genetic technologies to alter the distribution of talents and skills. ... In some special cases, ... there may well be adequate reason to go beyond our standard notion of equal opportunity to permit some enhancement in the name of eliminating obvious disadvantages.²⁷

Buchanan et al. offer several examples to show why they think so. First, the example of Johnny and Billy (p. 115).

Johnny is an 11-year-old boy and is short due to growth hormone (GH) deficiency that results from a brain tumor. Both of his parents have average height. His expected adult height without GH treatment is around 5 feet and 3 inches. Billy is also short and is the same age as Johnny. However, his shortness is due to his normal GH secretion since both of his parents are extremely short. He also has an expected adult height of 5 feet and 3 inches.

Suppose that we are able to trace both Johnny's and Billy's shortness back to specific

²⁶ Ibid., p. 17.

²⁷ Ibid., p. 129.

genes. Now the traditional medical wisdom is to treat Johnny but not Billy since Johnny has a tumor that causes his shortness, which we consider a disease. Therefore, it will be considered a genetic therapy to treat Johnny's shortness. Even though Billy's shortness is due to a genetic cause, we will consider Billy normal. So it will be a genetic enhancement to "cure" Billy's shortness. Buchanan et al. consider a view that it is unfair not to treat Billy and that the distinction between therapy and enhancement is arbitrary. They say,

In this view, it is not because there is something biologically distinctive about Johnny's condition as opposed to Billy's that led us to describe Johnny as having a disease and Billy not (although Johnny does have a tumor and Billy does not). Rather, our "social construction" of disease draws on a set of values that happens to have singled out Johnny rather than Billy in this way. But if we come to see that the same value that lead us to consider Johnny's tumor as a disease condition also applies to Billy's condition, then we should reconstruct our view of disease to include Billy's condition.²⁸

In short, there are three reasons for their conclusion. First, both of them will suffer the same disadvantage of shortness equally if they are not treated. For instance, if both want to be excellent basketball players, their chance to reach that level will be very slim. Therefore, there is no reason to think that Billy will live a much happier life than Johnny. Second, the causes of their shortness are beyond their control. That is, they don't have any choice about their biological condition or it is not their fault at all to have such shortness. If some disadvantages are beyond one's control, it seems not fair for him or her to compete without any assistance in a just society. Third, it is the social prejudice of "heightism" that we should condemn, not the fact that both have an expensive preference of height as long as this expensive preference or taste is not peculiar, idiosyncratic or extravagant. For instance, it is not a legitimate claim to hold us responsible for someone's extravagant taste of expensive wine or jewelry.

²⁸ Ibid., pp. 118-119.

Another similar example is the case of the Shy Bipolar (p. 111) and the Shy Normal (p. 115). The Shy Bipolar is an adult patient who suffers a problem of shyness due to his or her bipolar disorder. The Shy Normal is a normal person who has the same problem. Again, it seems that we would prefer to treat the Shy Bipolar rather than the Shy Normal and this is not fair because (1) they suffer the same disadvantage of shyness equally, provided that most people want an out-going personality, (2) this disadvantage of shyness is beyond their control, (3) the preference or taste for an out-going personality isn't a peculiar or extravagant one.

A third example is the Unhappy Husband (p. 111). A smart, professionally successful married father with two kids sought psychotherapy because of his marital distress. His wife had a very serious mental illness that made her difficult to live with. Even so, the Unhappy Husband still lived with her and kept their marriage. After many efforts at psychotherapy, he somehow adjusted and adapted to his distress but he wished that his treatments would be covered by insurance. He acknowledged that he was not suffering from an illness or disease and that it was fair for him to pay for his treatments.

Buchanan et al. use this example to show two issues. First, whether his treatments should be covered depends on the etiology, not the degree of his distress. This assertion is questionable. (See Chapter 2.) Second, why shouldn't his treatments be covered? The traditional wisdom says no since he was not suffering any illness or disease. But if he expressed his suffering through somatic symptoms and presented to an internist instead of a mental health psychiatrist, most of the time insurance companies would cover his treatments and investigations, which were more costly but less effective than psychotherapy. So there is some inconsistency of what we ought to do in this case.

Although this case is a little different from the other two, Buchanan et al. can still argue

with the same reasons why we should compensate him. First, there is no connection between his distress and fair equal opportunity. But there is. If he is not treated, he might lack normal capacity to change his values and then won't be able to adapt to his situation. Therefore, he might still suffer some disadvantages in competing opportunity. Second, it still fits into their second rationale—beyond one's control. If the Unhappy Husband attributes his distress to a somatic gene problem, then it is beyond his control. Third, it still has something to do with the social context. Whether he will suffer some disadvantages depends on our value-laden judgments.

In short, the reasons why we ought to treat Johnny and Billy, the Shy Bipolar and the Shy Normal, and the Unhappy Husband are: (1) they all suffer some sort of disadvantages, (2) it is beyond their control, (3) it is a wrong kind of social prejudice that we should oppose. In these scenarios, it doesn't matter much to Buchanan et al. whether it is a disease or not. Therefore, based on justice as fair equal opportunity, society has a moral obligation to treat them. Since their view is based on equal opportunity, this is the first reason why their approach is better than the brute luck view and resource egalitarianism (p. 141). For the other two views cannot analyze these three hard cases better. Second, their view won't adhere to the distinction of treatment/enhancement, which is arbitrary in the above scenarios. By contrast, the other two views require such a distinction (p. 141). Third, even if we have to use this distinction, their view meets the four tests of usefulness in a public policy domain better than the other two.²⁹

From the scenarios and arguments above, Buchanan et al. try to answer this question, “Why ought we to do genetic intervention?” instead of “Why do we want to do genetic

²⁹ Ibid., p. 142. However, they do not explain how their view can pass the four tests better. See below for what the four tests are.

intervention?” And the answers they find are justice as fair equal opportunity. Let us refer to Table 1 for the question that Buchanan et al. try to answer.

Table 1	Why ought we to do genetic intervention?	
	Genetic Therapy	Genetic Enhancement
Buchanan et al’s answers	Because of justice	Because of justice

Before providing their justification for genetic intervention, Buchanan and his co-authors argue that the moral line between genetic therapy and enhancement is not clean and clear.³⁰ They offer several reasons why we cannot draw a moral line between them (p. 108). First, the line is drawn to fit different moral purposes in medical and medical insurance contexts. For instance, we currently use this moral line between services which are obligatory to provide, e.g., in private and public insurance schemes, and those that are not. All obligatory actions have to be permissible. If not, it is a moral contradiction. All impermissible actions are nonobligatory. This is contraposition of the first statement. A nonobligatory action is either permissible or impermissible. A permissible action is either obligatory or nonobligatory. Therefore, this moral distinction does not give us a clear guideline on the boundary between permissible and impermissible. Second, it is difficult to draw a line. For instance, what basis should we use? Third, in addition to the first problem above, sometimes, it also does not give us the boundary between what is obligatory and what is not in medical insurance schemes. Fourth, given these hard cases above, this distinction is

³⁰ I will argue that even after they provide their justification—justice as fair equal opportunity—the moral line is still arbitrary. See Chapter 3.

arbitrary.

Some philosophers agree with Buchanan et al. For instance, Kathleen Nolan says, “The bright ethical line separating somatic and germ-line therapy has begun to erode.”³¹ Allen R. Dyer thinks that GGT is a kind of “enhancement” too.³² LeRoy Walters and Julie Palmer say that the technical distinction is “significant” but the moral distinction is less clear and clean. Ray Moseley offers a scenario to show the moral difficulty. Suppose that a patient might seek genetic therapy that has a positive effect on somatic cells and yet has devastating consequences on all of the patient’s future offspring. What should we say about this? According to the principle of double effect,³³ we have to sanction that patient’s wish. Also, David Resnik challenges us to find a moral distinction between them. There are other philosophers discussing this issue. For instance, Eric Juengst (1991& 1997), Jean Porter (1990), Sheldon Krinsky (1990), William Gardner (1995), Nicholas Agar (1995), and Juan Manuel Torres (1997), etc. I will discuss their views in Chapter 3.

In short, there are three positions regarding whether there is a moral line between genetic therapy and enhancement: (1) there is no moral (or discernible) line between them, which is suggested by Jeremy Rifkin and the editorialist of the New York Times, (2) there is a moral line but it is arbitrary, which is argued by Buchanan et al., Nils Holtug, etc., and (3) there is a moral line, which is proposed by French Anderson, Patricia Baird, etc. And I shall argue for (3). In general, most philosophers tend to support (2).

Although this distinction is arbitrary, according to Buchanan et al., it is useful to maintain a fair game so that people won’t abuse medical resources and services. Buchanan

³¹ Nolan 1991, p. 613.

³² Dyer thinks that only SGT is genetic therapy and the rest, GGT, SGE, and GGE, are genetic “engineering.”

³³ An original action is morally acceptable even if it has some foreseen but unintended morally wrong consequences.

et al. say, “Specifically, it may be useful to consider the role played in public policy, in institutions aimed at fair practices that people can agree on, by the treatment/enhancement distinction.”³⁴ Also, “Our willingness to continue to cooperate depends on our assurance that the terms of cooperation remain fair. But opening the door to moral hazard removes that possibility. It might even be more important to us to adhere to a line that seems arbitrary in some occasional hard cases in order to protect the general confidence people place in the fairness of the scheme overall.”³⁵ For example, consider the case of Johnny and Billy again. According to Buchanan et al., one of the reasons why we ought to treat Billy is because he may suffer the disadvantage of shortness. Now let us change Billy’s scenario a little. Suppose that his parents have average height and he can grow to only 6 feet tall. However, he thinks that it is still not tall enough and requests the assistance of growth hormone. Then, should we help him? Buchanan et al. might say no because a 6-foot height is well above normal and thus Billy shouldn’t suffer the disadvantage of shortness. Also, even though his preference of height is not extravagant or peculiar and it is beyond his control that he cannot have a height well above 6 feet, it will be an enhancement rather than a treatment. Therefore, we have no obligation to help Billy. In this case, the distinction between treatment and enhancement is helpful. By keeping this distinction, we are able to prevent people from abusing medical resources and services. However, we shouldn’t expect too much of it since there is no adequate reason to support this distinction. Buchanan et al. write, “No reasonable defense of the treatment/enhancement distinction is possible if we expect too much of it.”³⁶

³⁴ Ibid., p. 142.

³⁵ Ibid., p. 144.

³⁶ Ibid., p. 119.

How do we know whether a distinction is useful or not in a public policy domain? There are four tests for a distinction to be useful in a public policy domain. (1) Will the public and physicians consider it fair on reflection? (2) Can it be monitored within reasonable effectiveness in a practical sense? (3) Can society afford it? (4) Can it be sustained over time?³⁷ Buchanan and his associates suggest that their view can pass these four tests better than the brute luck view and resource egalitarianism. However, they do not give any explanation of how theirs can pass these four tests better.

Table 6 shows Buchanan et al.'s position on genetic therapy and enhancement and their view about the moral distinction between them.

Table 6	Genetic Therapy	Genetic Enhancement
Obligatory/Nonobligatory	Not necessarily obligatory	Not necessarily obligatory
Permissible/Impermissible	Not necessarily permissible	Not necessarily permissible
Is there a moral distinction?	Buchanan et al.: The distinction is arbitrary (p. 115, p. 116, and p. 118). Even if there is such a distinction, it is only useful for some purposes and we shouldn't expect too much of it (p. 119 and p. 152).	

Even though there are some inconsistent statements in Buchanan et al.'s book, these are their actual position. For Buchanan and his co-authors make the same or similar statements in several places. They say, "Just as the treatment/enhancement distinction does not coincide with the obligatory/nonobligatory boundary, it does not coincide with the

³⁷ Ibid., p. 142.

permissible/impermissible boundary either. Not all treatments will be permissible and not all enhancements will be impermissible.”³⁸ However, they also write, “In contrast, the social structural view, at least when developed along the lines of Daniels’s theory of just health care, supports the position that the distinction between enhancements and treatments is of considerable significance and that, at least generally speaking, treatments are obligatory while enhancements are not.”³⁹ So there is lack of clarity about what their position might be. I would assume that they have the idea of “not-necessarily obligatory/not-necessarily permissible” in mind since they repeatedly say so.⁴⁰ Therefore, it is appropriate and reasonable to describe their position in this way.

These scenarios above are one of the reasons that Buchanan et al. argue that the moral distinction between genetic therapy and enhancement is arbitrary.⁴¹ Buchanan et al. offer two objections to the moral distinction (pp. 118-119). First, even if we can draw a clear and clean moral line between treatment of disease or impairment and enhancement of normal traits, it does not have the practical import that is usually attributed to it. For instance, in insurance practices, sometimes we are obligated to treat some nondiseases for the same kinds of reasons as diseases. For instance, recall the Johnny and Billy case above. If so, then this distinction does not match the boundary between morally obligatory and nonobligatory services that our medical insurance practices might have suggested we hope

³⁸ Ibid., p. 153 and p. 182.

³⁹ Ibid., p. 96.

⁴⁰ This seems to be Norman Daniels’s position. See Daniels 2000.

⁴¹ Nelson A. Wivel and LeRoy Walters seem to have the same view as Buchanan et al.’s. They also use a growth hormone scenario (like Buchanan et al.’s Johnny and Billy) to show it is difficult to draw the distinction between genetic therapy and enhancement (p.537). However, later, LeRoy Walters and Julie Gage Palmer try to draw a distinction between health-related and non-health-related for genetic enhancement. I will discuss this more in Chapter 3.

for. In short, this distinction does not coincide with the moral boundary of obligatory/nonobligatory, and there are two reasons why they won't coincide (p. 120). (1) We may not have enough resources to treat all diseases or impairments. Therefore, justice as fair equal opportunity only requires us to treat the most important and urgent needs first. Being a treatment is only a necessary condition that we are obliged to provide people with help. It is not a sufficient condition. We need to consider our resources. (2) This distinction makes an unqualified claim that it can provide a boundary between obligatory and nonobligatory. For example, sometimes, society may have a moral or legal obligation to offer medical services to those that are not victims of diseases or impairments. For instance, an unwanted pregnancy is currently covered by insurance services in the US today. The reason why we are obliged to provide this service is because of equality of women, not because it is a disease or impairment. Since these are important and interesting issues, I will raise some questions about their arguments in Chapter 3. Second, what basis do we use to draw this distinction? If we want to use this distinction to draw a further moral line, we have a problem of circularity. Again, consider the Johnny and Billy case. If we base our judgments on the fact that both suffer equal disadvantage, then we are able to include both for treatment, which fits our insurance practices. Buchanan et al. write,

According to this line of thinking, it is our norms and values that define what counts as disease, not merely biologically based characteristics of persons, and the arbitrariness in these hard cases comes from inconsistently applying our values. Pointing to the line between treatment and enhancement is not, then, pointing to a biologically drawn line; rather, it is an indirect way of referring to valuations we make. We cannot point to such a line as the grounds or basis for drawing moral boundaries since we are only pointing to a value-laden boundary we have constructed.⁴²

Whether we can draw a moral line between genetic therapy and enhancement is the

⁴² Ibid., p. 119. Also see pp. 118-119.

most important and interesting issue in my dissertation, which I will discuss more in Chapter 3. It sparks a lot of debates as shown above. Even Buchanan et al. themselves acknowledge that they have a lingering tension over how useful the therapy/enhancement distinction is and how it can be applied to the demands of fair equal opportunity. They write, “One area of lingering tension concerns the usefulness of the treatment/enhancement distinction and the broader issue about the scope of the demands of equal opportunity.”⁴³

There is an interesting observation about how philosophers choose moral words to argue for genetic intervention. For instance, Ted Peters uses the word “desirable” to argue for genetic therapy, which, I shall argue, has no truly moral status. For to desire something is morally neutral and doesn’t have any truly moral status. We have to say that it is *obligatory* to do something in order to claim a truly moral status. Peters writes, “Every ethical interpreter I have reviewed agrees that somatic therapy is *morally desirable* and looks forward to the advances gene research will bring for expanding this important medical work.”⁴⁴ Buchanan et al. also suggest that some forms of genetic enhancement are morally desirable. They write, “A weak position supportive of genetic enhancements would be that it is *morally desirable* or *morally good* for parents to use a variety of means, including genetic interventions, to attempt to produce the best children possible.”⁴⁵ Again, in my opinion, desire (or craving) has no truly moral status. We need to take two sequential steps to see whether desire has any moral status. First, check if it is permissible or impermissible. For not all cravings are morally permissible. Second, check if it is obligatory or nonobligatory. For not all permissible actions are obligatory. Until then,

⁴³ Ibid., p. 149.

⁴⁴ Peters 1995, p. 367.

⁴⁵ Ibid., p. 162.

desire (or craving) is only morally neutral and has no truly moral status.

After offering their arguments and position, Buchanan et al. continue to compare three models of equal opportunity, arguing that theirs is a better approach for public policy among these three alternatives: (1) their normal functioning model, (2) Sen's equal capabilities model, (3) Cohen-Arneson's equal opportunity for welfare model, which correspond to the previous discussion of the social structural view, resource egalitarianism, and the brute luck view respectively. Buchanan and his associates reject Sen's equal capabilities model because (1) it doesn't tell us what justice requires us to do, (2) it has the problem of incommensurable capacity, and (3) it cannot deal with those hard cases above. Buchanan et al. also reject Cohen-Arneson's equal opportunity model for three reasons. (1) It doesn't capture the real concerns about equality or equal opportunity. That is, it sometimes merits some forms of treatment, but not necessarily some other forms of compensation. It seems to have different standards for justice as beyond one's control. (2) In some cases, it is not our choice that matters, but our normal capacity to revise our tastes, preferences, values, or goals. For instance, recall the Unhappy Husband case. If we need to compensate him, it is because he lacks the normal capability to change his values and then to adjust to his distressing situation. (3) It cannot deal with the other hard cases either.

Buchanan et al. offer several reasons why their model is better. (1) Theirs appropriately incorporates the distinction of treatment/enhancement. As noted above, this distinction is only useful to maintain a fair game and we should not expect too much of it. The other two models have to keep this distinction. Since this distinction is problematic, the other two are more problematic than theirs. (2) Theirs can pass these four tests of usefulness better. (They do not explain how. I will try to explain how in Chapter 4.) (3) Theirs can support the other two models but not vice versa. (4) Theirs can explain these hard cases better.

Finally, even though Buchanan et al. are quite committed to genetic intervention, including enhancement, they offer three concerns about genetic enhancement in contrast to genetic therapy (p. 154). First, some coordination problems will arise when parents pursue a course of enhancement for the best interests of their offspring; for example, the problem of gender selection. If all parents think that the gender of male or female will have better economic, religious, or social advantages, they will select that specific gender. Then, the ratio of male and female will be definitely unbalanced. This will make society unstable. Also, gender selection could be self-defeating. For if all parents select the same gender, there will be many descendants of the same gender competing for the gender advantage. If so, there will be no gender advantage for them at all. And this is self-defeating. Height is another example. If all parents enhance their children to have the advantage of being taller, then it is self-defeating. Since everyone will be taller, being taller won't be an advantage at all. Second, in addition to the problem of being self-defeating, the pursuit of positional advantage could be unfair. For if only rich people can do enhancement, it is not fair.⁴⁶ The rich will have more and more advantages than those who cannot afford enhancement. In contrast, the pursuit of treatment is only limited to those who suffer from disease or impairment. So it won't change the gender ratio dramatically. Also, it is not self-defeating and unfair. Buchanan et al. offer three factors to consider how much we can tolerate unfair conditions (p. 187). (1) To what degree do we believe that unfair socioeconomic inequalities exist in our society? If we believe that they are not too fair, then enhancement will definitely make this condition worse. (2) The structure of inequality in access to health

⁴⁶ Granted, but then how can we prevent this unfair problem? Unfortunately, Buchanan et al. do not offer any theory or principle to prevent it. It is Colin Farrelly who captures Rawls's core idea in the Difference Principle. He offers the "Genetic Difference Principle" that is very similar to Rawls's Difference Principle. See my seventh concern in V below.

care. If most people have access to health care, then the poor people at the bottom will have a legitimate complaint about being left behind. (3) How significant is the enhancement or advantage? If the advantage is very significant and crucial, then people will think that it is very unfair if they cannot have it. Third, we may have the problems of what counts as a benefit and of who should decide. What enhancement counts as a benefit will depend on the values individuals hold. Parents' values may not be the same as their descendants'. Therefore, who should decide?

Madison Powers reviews their book and agrees with Buchanan et al. Powers also indicates that there is nothing morally objectionable and perhaps even something morally obligatory about seeking to endow future generations with genes that might enable their lives to be better. This claim is questionable since it involves some important value judgments of what is a good or better life for future generations as Buchanan et al. mention in their third concern above. Arno G. Motulsky strongly points this out. He writes,

Analogously, in the distant future human beings might require injections and pills for a variety of genetic infirmities—a development that we currently view as unhealthy. However, our descendants might consider this state of affairs to be as “normal” as we consider the wearing of clothing or eyeglasses today. Thus, the characterization of human genetic traits as beneficial or harmful depends entirely on the environment in which the trait or traits operate.⁴⁷

Buchanan et al. call their approach the “social structural view,” which, I think, is not quite right. I agree with Powers who calls it the “modified social structural view” since it is developed from Daniels’s “social structural idea” and there are several differences between Buchanan et al.’s and Daniels’s. First, Buchanan et al. take a step further to go beyond equal opportunity to treat those who are not suffering disease or impairment as long as the further step we take is still just and good for the society as a whole. For instance, Buchanan

⁴⁷ Motulsky 1983, p. 136.

et al. argue that we have sufficient reasons to enhance memory, math and reading skills. However, I am not sure what their justification is for these traits. It could be because of social productivity as mentioned above. Another concern is that when they take this further step, their thesis might have two problems. (1) Their approach might slip into the brute luck view that they don't support. See my sixth concern below. (2) Their view might have an underlying problem that Daniels's might not have. (See Chapter 2.) Second, Rawls's or Daniels's thesis is mainly concerned with social and economic inequalities. But Buchanan et al. expand Daniels's view to include natural inequalities. So their view is an expansion of Rawls's and Daniels's. Third, there is a difference with the moral "target." Daniels's thesis is mainly to fill in what Rawls has left out. But Buchanan et al. make a further claim that everyone should be able to compete equally and fairly.

V. Some concerns

I will discuss two concerns later in Chapter 2 and Chapter 3 since they are more important and relevant to my whole project. I examine the underlying problem of the necessary connection between disease and fair equal opportunity in Chapter 2. I analyze the problem of the moral distinction between treatment and enhancement in Chapter 3. In addition to these two issues, there are several other concerns about Buchanan et al.'s approach.

First, Baruch Brody in his book review offers a criticism. He criticizes Buchanan et al.'s approach by saying,

So unless our authors classify all of these other positions as unreasonable (and provide us with support for that classification), they can hardly recommend the normal functioning view's policy recommendations to our society as one whose demands are supported by all reasonable people without invoking a comprehensive moral view.⁴⁸

⁴⁸ Brody 2002, p. 360.

In my opinion, this critique is unfair. For no one is so wise and knowledgeable as to know all different arguments or theses. Besides, he does not offer any other possible positions. There might be no other possible positions out there. To be really fair enough, he should have mentioned at least one. So it is really not a fair critique. Brody demands too much. I find that Alexander Rosenberg's ideas are very interesting and relevant to Buchanan et al.'s arguments. Rosenberg supports Harry Frankfurt's doctrine of sufficiency and rejects all other arguments of equal outcome (income and wealth), even including Buchanan et al.'s equal opportunity. The doctrine of sufficiency states that society should give its members enough opportunity to pursue what he or she cares about or ought to care about. There are several advantages in this doctrine according to Rosenberg. First, it decentralizes some responsibilities to individuals and lets one decide what is really important to him or her. Second, "equal opportunity" should mean "equality of sufficiency" that a democratic society should strive for. Rosenberg says, "Indeed, some may identify it as the sense in which any representative democratic government is committed to equality of opportunity. On their view, equality of opportunity is equality of sufficiency."⁴⁹ Third, since everyone should be given enough opportunity to seek what one cares about, including wealth and income, it will require society to take steps to increase wealth and income. And as a result, the total wealth and income of society will increase.

There are some problems with this doctrine. For example, first, certainly there will be some tension between what one really cares about (from the individual side) and what one ought to care about (maybe from the society or institution side). Second, how to define "enough opportunity" for everyone? Although Rosenberg's doctrine is not a mainstream idea (I assume) and has its own problems, Buchanan et al. should have at least considered

⁴⁹ Rosenberg 1995, p. 67.

this doctrine too and should have told us why and how their approach is still better.

A second concern about Buchanan et al.'s arguments is that some of their important statements are inconsistent (or vague) even though we know generally what their position is. For instance, consider their position on whether genetic therapy or enhancement is obligatory or not.⁵⁰ Their statements seem to be incoherent. So they need to be more consistent with their statements. I guess that this inconsistency could be caused by different authors writing different chapters. As mentioned above, the statement on p. 153 could be Daniels's and the one on p. 96 could be some other author's.

There may be another inconsistent (or vague) point regarding whether the severity of a disease will affect one's equal opportunity or not. When Buchanan et al. argue for their hard cases in their chapter 4, e.g., the Shy Bipolar and Shy Normal, and the Unhappy Husband, they argue that the seriousness of these mental diseases or illnesses has nothing to do with the Shy Bipolar's and the Unhappy Husband's fair equal opportunity. Buchanan et al. say, "The factor underlying this reasoning did not have to do with the degree of suffering involved in being shy; the reasoning depends on the etiology or explanation of the shyness."⁵¹ However, when Buchanan and his co-authors later argue for the principle of nonmaleficence (preventing harm), they say that the degree of disease or illness does matter. They write,

Whether failure to prevent a disability is wrong in specific cases will typically depend on many features of that case. For example, what is the relative seriousness of the disability for the child's well-being and opportunity?...These and other considerations can all bear on the threshold question: Is the severity of a genetically transmitted disability great enough that particular parents are morally obligated to prevent it.⁵²

⁵⁰ See the citations on p. 96, p. 153, and p. 182.

⁵¹ Ibid., p. 111. Also, see my discussion in Chapter 2.

⁵² Ibid., p. 243.

Buchanan et al. might say that there is no inconsistency since they argue for different principles. The former is for justice as fair equal opportunity and the latter for the principle of nonmaleficence. These two are different ethical principles. I wonder if this is a good and valid response. For even if they are two different principles, the ultimate purpose of Buchanan et al.'s arguments is the same. Both involve the same sort of fair equal opportunity eventually. If so, they cannot say that the degree of disease or illness applies only to the latter not to the former.

A third (possible) inconsistency is this. When they argue the arbitrariness of the moral distinction between therapy and enhancement, they offer the example of unwanted pregnancy. Buchanan et al. say that medical services should cover the treatment for an unwanted pregnancy, not because of disease or impairment but because of normal functioning and because we should respect the equality of women (p. 120). There may be an inconsistency in this statement. Since Buchanan et al. mainly appeal to disease or impairment that will have impact on one's fair equal opportunity, it is reasonable to assume that we should cover the treatment for an unwanted pregnancy because an unwanted pregnancy could be abnormal functioning, which will affect the fair equal opportunity of women. But this is not what Buchanan et al. say. They say that it is normal functioning. But what does normal functioning have anything to do with justice as fair equal opportunity? Certainly, it has nothing to do with it according to Buchanan et al.'s arguments. Therefore, their statement has either a mistake or an inconsistency. It is a mistake if they say that it should be the word "abnormal" rather than "normal." But if they admit this mistake, it will lead to an inconsistency. For an abnormal functioning, i.e., the unwanted pregnancy, is a disease according to their definition of disease that it is an adverse departure from species normal functioning, But they say that it is not. Therefore, there seems to be an

inconsistency. To avoid this problem, they cannot say that “the equality of women” means “the fair equal opportunity of women.” If so, then what do they mean by “the equality of women”? (This is a problem I mention in II above.) Buchanan et al.’s principal arguments are about justice as fair equal opportunity. Besides this basis, I wonder what else they could offer.

A third concern is this. What is their view of genetic intervention? Buchanan et al. say that theirs is the social structural view developed from Daniels’s concept of normal functioning. For instance, they write, “We have argued that the social structural view, at least when developed along the lines of Daniels’s Rawlsian account, implies no commitment to regard all natural inequalities as subject to the dictates of equal opportunity.”⁵³ However, they sometimes say that their view goes beyond normal functioning (p. 17, p. 96, and p. 129), which is beyond Daniels’s thesis. This is why I agree when Powers calls their view the “modified social structural view.” There is another difference from Rawls’s and Daniels’s view. Rawls’s and Daniels’s view primarily focuses on social and economic inequalities but Buchanan et al.’s view also focuses on natural inequalities. Theirs is an expansive view beyond Rawls’s and Daniels’s. Also, I mention above that there is a third difference of moral “target.” So there should be two different views rather than just a social structural view.

A fourth concern is that when Buchanan et al. defend their “social structural view” or “model of normal functioning,” it is not so clear to me that how they can argue that theirs won’t have the same problems as the brute luck view and resource egalitarianism. For instance, they argue that their view does not have the problem of uniformity (p. 148). Isn’t their “normal functioning” or “equal opportunity” a “target” too, as with Sen’s target of

⁵³ Ibid., p. 75.

“equal resources” or Cohen-Arneson’s target of “beyond one’s choice”? They defend it by appealing to Rawls’s defenses. However, this defense might not be a good one. As I point out above, theirs is an expansive view beyond Rawls’s and Daniels’s. Rawls’s defenses might not be adequate for their arguments. They should have told us how their “target” of equal opportunity is different from Sen’s “equal resources” and Cohen-Arneson’s “beyond one’s choice.” That is, why is theirs not uniform?

A fifth concern is whether “can” implies “ought to” or the reverse. This issue is also important for my argument. Alexander Rosenberg says, “It is a well-known principle in moral philosophy that ‘ought implies can’—if one is to be obliged to do something, then one must be able to do it.”⁵⁴ However, LeRoy Walters says that we should perform germ-line gene therapy because its technology is here. This means that the technical “can” implies “ought to.” This is different from what Rosenberg suggests. Then how about Buchanan et al.? Buchanan et al. will consider it either way. They write,

Until now, human beings have achieved this expansion of control mainly through developing technologies for controlling the nonhuman parts of nature. Now we stand on the threshold of a great expansion of the domain of the social. If it becomes within our power to prevent what we now regard as the misfortune of a sickly constitution (a weak immune system) or the catastrophe (the natural disaster) of a degenerative disease such as Alzheimer’s dementia, then we may no longer be able to regard it as a misfortune. Instead, we may come to view the person who suffers these disabilities as a victim of injustice. As our powers increase, the territory of the natural is annexed to the social realm, and the new-won territory is colonized by ideas of justice.⁵⁵

This suggests that they have the same idea as LeRoy Walters’s. If we have the capability of genetic intervention, then we ought to consider whether to use the technology to remove natural inequality if equal opportunity demands it. That is, “can” implies “ought to” in a

⁵⁴ Ibid., p. 55.

⁵⁵ Ibid., pp. 83-84.

sense. However, Buchanan and his co-authors also write, “First, resources will be too limited to meet all our needs for the treatment of disease or impairment. Justice then requires that we meet the most important needs first,... Being a treatment is thus not a sufficient condition for our being obliged to provide a service to people.”⁵⁶ This means that even if we have an obligation to treat people, it doesn’t mean that we can because of limited resources. That is, “ought to” does not imply “can.” So which is true?

In my opinion, neither is correct because both are incomplete. “Can” does not necessarily imply “ought to.” It certainly means that we ought to consider it rather than that we ought to do it. Also, “ought to” does not necessarily imply “can” as Buchanan et al. say in the second statement above. There are many obligations in medical services or institutions that we ought to perform. But sometimes we just cannot do it because of resource limitations or some other reasons. For instance, in a just society, government or an institution certainly has an obligation to provide equal access to medical services and would like to do it. But because of resource limitations or political agendas, the government or institution may not be able to it. In this regard, I would tend to think that Rosenberg is wrong. For there are many counterexamples to “ought implies can.” Also, I would not say that “can” implies “ought to.” It needs a further justification to go from “ought to consider” to “ought to do.” This topic will appear again in Chapter 3 and Chapter 4. It is an interesting and important aspect of consideration of the moral distinction between genetic therapy and enhancement.

A sixth worry is that Buchanan et al.’s view might eventually fall into the brute luck view, which they don’t support. They say that theirs is only different from the brute luck

⁵⁶ Ibid., p. 120.

view in theory but not much in practice.⁵⁷

Seventh, supposing that Buchanan et al. are right, then two questions arise: (1) how can institutions provide equal access to eliminate natural inequalities based on justice as fair equal opportunity? and (2) what principle should we use to justify this? For the first question, definitely, the free-market approach supported by libertarian social philosophers such as Robert Nozick won't work very well. For in the US, it is obvious that not everyone will be able to have equal access to health care. According to the report of the Census Bureau in 2004, there were 45 million people out of 280 million who had no health insurance in 2003. It was almost one-sixth of Americans who had no health insurance in 2003 and some forecasted that the ratio would be higher in 2004 and 2005. This ratio was not very reasonable in a quite "wealthy" and just country like the US.⁵⁸ To have equal access to genetic intervention will definitely make this problem worse. Regarding the second question, Colin Farrelly offers the "Genetic Difference Principle" (GDP) to answer it. LeRoy Walters has a similar proposal.⁵⁹ The GDP states that "inequalities in the distribution of genes important to the natural primary goods are to be arranged so that they are to the greatest benefit of the least advantaged."⁶⁰ The GDP is very similar to Rawls's Difference Principle. However, since Rawls's Difference Principle is not very effective in practice, I wonder how effective this principle will be. For example, again consider the current healthcare system in the US. This problem may be more complicated than merely about justice but it does have something to do with Daniels's claim of a right to health care,

⁵⁷ Ibid., p. 109.

⁵⁸ I wonder what Daniels would say about this since it seemed that his thesis, a right to health care, was not working.

⁵⁹ Walters 1997.

⁶⁰ Farrell 2002, p. 146.

which is based on Rawls's theory. If so, Rawls's theory or Daniels's thesis isn't working very well in the US. We might say that the US's healthcare system is a free-market one, which is another alternative to allocate genetic intervention. It doesn't follow Farrelly's, Rawls's, or even Daniels's "a right to health care." This objection might be right. (Then the question for Daniels is--Why is his thesis not adopted?) It shows the complexity and difficulty of how to provide equal access to genetic intervention. Of course, the fairest and the most perfect way is to let everyone have equal access to genetic intervention, if resources permit.

An eighth concern is about Buchanan et al.'s argument for genetic enhancement based on social productivity. Buchanan et al. propose that if genetic enhancement, e.g., memory or cognitive skills, is good for society as a whole, we should do it based on social productivity that presumably will give our future descendants a better life. (Note: Even if they are right, it still raises a concern about what counts as benefits for future generations.) LeRoy Walters agrees with this.⁶¹ However, this is a utilitarian justification and I have one concern.⁶² I agree that it may increase social productivity. But does it mean that it will make people happier? If it would, then today's American people should have been the happiest people in the world. For America today, in general, has the most things, the most advanced technologies, and maybe the most social and industrial productivity in the world. But Americans are not the happiest persons in the world. 3Com Company did an internet survey worldwide in Nov., 2000 to see if people felt happy. An average of 35% of people worldwide felt happy. Columbia of South America had the highest figure at 73%. It did not say what percentage of American people felt happy. But for sure it wasn't the highest one.

⁶¹ See his p. 133 quotation.

⁶² Also, see my discussion in Chapter 2.

This survey might be questionable since it didn't give the percentage of margin of error. I assume that this survey was a very coarse one. Even so, it still offered some idea of how people worldwide felt about happiness.

There is another more believable survey report from 1981 to 1998 by Ronald Inglehart at the University of Michigan. In his "World Values Survey: Genes, Culture, and Happiness," Inglehart finds that the US has the highest GNP per capita but Americans are not the happiest and the most satisfied with life as a whole. The percentages are 94% for happiness and 85% for life satisfaction. The people of Iceland are at the top. They have 97% and 91% respectively. The interesting thing is that people in Puerto Rico and Colombia have very close percentages to Americans. Puerto Rico has 91% and 86% respectively and Colombia has 90% and 77% respectively. Although Inglehart's statistical methods may be sophisticated, there may be a problem with his survey. Inglehart surveyed those 65 countries and collected their data not in the same year. For instance, both the USA's and Puerto Rico's were done in 1995, but Colombia's was in 1997. Since things could change rapidly in some countries, e.g., Russia and China, the data should not be compared without further updated information. I guess that since it would take an arduous and enormous effort to do it every year, it may not be realistic or necessary depending on whether Inglehart could show that the temporal factor is not of statistical relevance in his data. Apart from this problem, the surveys still show something.

In addition, there is another factor to consider about whether genetic enhancement, based on social productivity, will make people happier. To increase social productivity is unfortunately one of our cravings. If so, the answer is pessimistic. Because just like money, we will keep wanting more and more enhancements. Our cravings won't stop just right there. In other words, even if we can stop one specific craving, there will always be other

different cravings. For instance, after having so many cosmetic surgeries for one's beauty, he or she will still want to be taller or smarter, etc. It is a never-ending process and pursuit.

Ninth, there is a trend or problem in the US today. It seems that as long as we don't break the laws, we can do whatever we want to make big money. That is, a free-market-plus-capitalism approach won't work very well ethically. For instance, consider the recent accounting frauds in big companies such as Enron, WorldCom--the largest bankruptcy in the US history, and Tyco. The same attitude could happen to those genetic companies and geneticists that want to make big money out of genetic enhancement. Although government can regulate this problem, the laws just cannot cover all the ethical issues. Ethical virtue is still needed.

Tenth, since a free-market approach won't work very well ethically, governmental regulation is inevitable. Then, we will have another problem or debate between liberalism and communitarianism. The government might already have too much power. How much more are we willing to give up our liberty about genetic intervention to the government? Personally, I would prefer liberalism to communitarianism. The ideal situation would be that government sets up fair rules and then lets individuals or companies play by these rules. If this sounds like a free-market approach, then I would call it "the-least-possible-free-market" approach, which means that government should set up the least possible rules.

Eleventh, the concern of playing God. Some geneticists, e.g., James Watson, a Noble Prize laureate, propose that if we don't play God, who will? This is a very disturbing and hubris-laden statement. For there are no good arguments to support this statement. It is a very arrogant proposition. We could destroy ourselves by playing God. Since we don't have God's omnipotence and omniscience, we are not capable of balancing (or foreseeing)

the consequences of our acts. Once genetic intervention is done, it may not be reversible.⁶³ Although some geneticists, e.g., David Resnik (1994) and LeRoy Walters (1997), say that some of them are reversible, some physiological or psychosocial damage might still have been done. In addition, we will be agonized by wondering whether we want to reverse course or not.

Ted Peters also argues that playing God is morally acceptable if we can create a better future. He writes, “The correlate concepts of God as the creator and the human as the created cocreator orient us toward the future, a future that should be better than the past or present.”⁶⁴ Peters thinks that there is an implicit reason why people are against playing God. People assume that the present state of affairs is adequate, and therefore, there is no need to improve and enhance it. LeRoy Walters and Julie Palmer agree with Peters (p. 133).

There are several problems with this argument. First, a philosophical definition of God isn’t necessarily as a creator. LeRoy Walters and Julie Palmer say that it could be a theological or metaphysical definition (p. 84). In my opinion, a theological definition of God is too narrow to argue for. It might not be appropriate to call a human a “created cocreator.” We might be merely trying to survive. Then, the question should be, “Is this current state of affairs of ours adequate for our survival?” To survive doesn’t necessarily mean to have a better future. According to Darwin’s theory of evolution, only the fittest rather than the better (or the best) one will survive. Second, according to Buddhism, Peters’ argument is not sound. Buddhists would say yes that we are equipped adequately to become a Buddha. All forms of genetic enhancement are expressions of our cravings that are the root of our suffering. There is no need to seek anything more. The future is now. To

⁶³ See Nelson A. Wivel and LeRoy Walters 1993, pp.536-537.

⁶⁴ Peters 1997, p. 148.

have a better future is to be enlightened now.⁶⁵

Some philosophers argue that we worry too much. Human beings have been “playing God” all the time. Nothing seriously wrong happens, does it? But how can we be sure that it won’t happen to a horrible extent in the future? The study of history is a social science. It has more uncertainty than natural science. We can never be sure that if it didn’t happen in the past, it won’t happen in the future. For example, some environmental concerns, e.g., global warming, may be symptoms indicating that some unprecedented disasters await to happen in the future.

Finally, some philosophers argue that Rawls’s theory of justice can only be applied to a well-ordered and democratic society; for instance, in North America and Europe. For instance, Nelson Wivel and LeRoy Walters say, “Although it would be unrealistic to expect a consensus with regard to the most compelling arguments of either persuasion, it seems apparent that most arguments have been influenced by the underlying culture, in this case, a pluralistic Western democratic society with a strong interest in individual rights.”⁶⁶ Since Buchanan et al. follow Daniels and Daniels follows Rawls, this is a legitimate question for Buchanan et al. too. Thomas Pogge says, “In the domestic case, the original position models the freedom and fundamental equality of all persons. But Rawls rejects these same values for the international case as showing insufficient tolerance and respect for certain non-liberal societies.”⁶⁷

Is there any good solution for the Rawlsian approach? Since the problem is inherent in the theory and since their approach focuses on justice and pluralistic culture, the Rawlsian

⁶⁵ This statement may be inappropriate. A more proper way to say it is this: To have a better rebirth or to stop suffering is to be enlightened now.

⁶⁶ Ibid., p. 536.

⁶⁷ Pogge 2001, p. 246.

cannot coerce other countries to accept their theory unwillingly. There may be three ways to resolve this problem. First, revise their theory to fit all countries. This approach is doomed since the problem is inherent to their approach. There is only so much they can revise.

Second, develop a new theory for other countries. This is what Rawls tries in his book *The Law of Peoples*, according to Thomas Pogge. However, Pogge criticizes Rawls's new theory heavily. He points out that there are several inconsistencies in Rawls's new theory between one domestic country and an international system (p. 246). Pogge also criticizes Rawls by saying, "Peoples have a duty to assist other people living under unfavourable conditions that prevent them having a just or decent political and social regime. But Rawls himself finds strong reason to reject such a conception in the domestic case."⁶⁸ It seems that Rawls is willing to have different (and even inconsistent) theories for different countries. Since there are so many different societies and cultures, what if Rawls's theory in *The Law of Peoples* does not work at all? If so, how many theories does Rawls have to develop? This approach is implausible.

Third, hope other countries learn that a well-ordered and democratic society is the better (or even maybe the best) way to flourish for individuals and for their country. However, Pogge points out a problem (or inconsistency) with this approach,

He [Rawls] seems committed then to the view that it would be morally all right, even desirable, for all of mankind to be institutionally organized along the lines of the idealized USA of *A Theory of Justice*. There is no suggestion in this book that the social order it proposes is morally acceptable only if there exist outsiders not subject to its rules. In *The Law of Peoples* Rawls makes a rather dogmatic pronouncement against a world government.⁶⁹

⁶⁸ Pogge 2001, p. 250.

⁶⁹ Ibid., p. 248.

Regardless of these inconsistencies, I agree with Rawls's view to some extent. However, it has to be applied cautiously. We want other countries to learn the "universal" value of democracy and his theory, but at the same time we want to preserve their own culture because of pluralism and diversity. Is this plausible? I would not say no. The democratic transitions of South Africa and Taiwan could be examples although they may not be the perfect examples for Rawls's theory. By contrast, the Buddhist approach will have fewer problems since it is based on a more universal value—compassion. I will explain the Buddhist approach in Chapter 4.

Finally, in this chapter, I describe what the Rawlsian approach is for genetic intervention, explain four kinds of genetic intervention, and raise some relevant concerns. I will discuss a relatively more important problem in the next chapter, i.e., the underlying problem of the necessary connection between disease and fair equal opportunity.

Chapter 2: The underlying problem of the necessary connection between disease and fair equal opportunity⁷⁰

In Chapter 1, I pointed out some general concerns about the Rawlsian approach. In this chapter, I will focus on a relatively more important question, “Is there a necessary connection between disease and fair equal opportunity?”

Based on Buchanan et al.’s (or Daniels’s or Boorse’s) definition of disease (that it is an “adverse departure” from normal functioning), is there a necessary connection between disease and fair equal opportunity? This question is important because if there is no necessary connection, their argument is problematic. Buchanan and his associates assume or imply that diseases (or some impairments) will certainly affect one’s fair equal opportunity. In other words, if a person has a disease (or impairment) and thus won’t have fair equal opportunity to compete equally in a justice society, then society is obliged to treat that disease (or impairment). Buchanan et al. write,

The significance of disease is that it limits opportunity in the most serious cases, at least, by preventing persons from developing the threshold of abilities necessary for being “normal competitors” in social cooperation. It is possible, however, that some natural inequalities are not adverse departures from normal species functioning but nonetheless so seriously limit an individual’s opportunities that he or she is precluded from reaching the threshold of normal competition. In such cases, genetic intervention might be required if it were necessary to remove this barrier to opportunity.⁷¹

Therefore, according to Buchanan et al., based on justice as fair equal opportunity, we have

⁷⁰ Actually, there are two underlying problems. First, in most serious cases of disease, the necessary connection may be there. But how serious does a disease have to be to affect one’s fair equal opportunity? See my discussion below. Second, what about the general cases of disease? In general, is there a necessary connection? The second question is my main focus here since it seems to me that what Buchanan et al. try to argue about are all diseases, not just the serious ones. Besides, if they aimed for the serious cases only, the applications of their arguments would be limited.

⁷¹ Ibid., p. 74. Also, see p. 122 and p. 142.

a moral obligation to treat that disease or even to enhance some traits to remove some disadvantages. Let me rephrase their argument. If a person has a disease that will affect his or her fair equality of opportunity to compete equally in a justice society, then society has a moral obligation to treat that disease. Also if a person has not a disease but an impairment (e.g., a lack of capacity for math) or a disadvantage that will impact one's equal opportunity to compete equally, society is obliged to remove that impairment or disadvantage based on justice as fair equal opportunity.

The necessary connection that Daniels and Buchanan et al. assume between disease (or health care) and fair equal opportunity is also pointed out by other philosophers, for instance, Lesley Jacobs, John Moskop, Lawrence Stern, Ronald M. Green, and Kenneth F. T. Cust. I discuss their views later.

What may be wrong with Buchanan et al.'s (and Daniels's) argument? That is, is there a necessary connection between their definition of disease and fair equal opportunity? I am afraid not. On the contrary, there are some counterexamples showing that "disease" could be to one's advantage to compete. For example, according to Buchanan et al.'s definition of disease, a genius is diseased, but on the contrary, a genius has a "genius edge" (whatever it is) to compete. I will give more details below. There are five sections in what follows. I analyze their assumptions, offer some counterexamples, examine their arguments, look at other philosophers' critiques of Daniels's theses, and investigate the problem of defining disease. I also propose what Buchanan et al.'s definition of disease should look like in order to avoid this underlying problem.

I. Analyze their assumptions

There are two concepts expressed in their premise: X is a disease (or impairment) and X will affect one's fair equal opportunity. There must be a necessary connection between

them to make their argument sound. That is, their argument is sound only if disease (or impairment) does affect one's equal opportunity. Then, based on justice as fair equal opportunity, a justice society has a moral obligation to try to remove that disease (or impairment). This is what they assume: a disease (or impairment) will affect one's fair equal opportunity; i.e., there is a necessary connection between disease (or impairment) and fair equal opportunity. However, if it is not the case, then their argument won't be sound. There are three other types of situations to consider: (1) X is a disease (or impairment) and X won't affect one's fair equal opportunity, (2) X is not a disease (or impairment) but X will affect one's fair equal opportunity, (3) X is not a disease (or impairment) and X won't affect one's equal opportunity. Type (1) will be my focus here since it is against Buchanan et al.'s assumptions and thus will undermine their argument.

Let us start with the easiest one--type (2) that in part Buchanan et al. also argue for. It doesn't matter whether X is a disease or not as long as X will impact one's fair equal opportunity. Then, based on justice as fair equal opportunity, society has a moral obligation to remove that X. It could be an impairment or a disadvantage.⁷² So (2) should not be a problem for Buchanan et al. However, there is one concern with this argument: What natural inequalities would be counted as impairments or disadvantages (if they are not diseases)? Since impairments and disadvantages are not in the definition of disease, they are determined more by social contexts than by biomedical sciences. Then, what criteria should we use to consider them impairments or disadvantages? Take the impairment of lacking math skills for example. In general, people without a certain level of math skills are considered to have a disadvantage to compete equally. Suppose that there is a very technologically advanced society that can use the computer to eliminate that disadvantage.

⁷² See p. 74.

Then, a lack of a certain level of math skills won't be a disadvantage in that advanced society. Therefore, how applicable and effective is their argument? Since social contexts change over time and also depend on where you live, Buchanan et al.'s theory may have a deeper problem of applicability than Rawls's. That is, Buchanan et al. may have a problem if their theory is intended to apply not only domestically but also across time. Rawls's theory is at least applicable domestically and could be sustained over time within the same country. (But it may not be applicable internationally as shown in Chapter 1.)

Type (3) is not a concern about justice since it has nothing to do with equal opportunity. However, according to Buchanan et al., although it is not within the scope of justice, there is another reason why we ought to consider it, i.e., social productivity.⁷³ They argue that in some cases even if it is not a disease and won't affect one's fair equal opportunity to compete, we should go beyond the notion of equal opportunity as long as it is a good thing for social productivity or for society as a whole. For instance, they suggest that we should consider taking steps to enhance memory, math and reading skills, etc.⁷⁴

Is there anything wrong with this argument? At first, it seems so intuitively persuasive that most philosophers, such as LeRoy Walters and Madison Powers, have the same proposal.⁷⁵ Also, Burke Zimmerman says, "But is there really anything wrong with it [enhancement]? What about the positive side, of increasing the number of talented people. Wouldn't society be better off in the long run?"⁷⁶ I agree but have one concern. How can we be sure those enhancements will do good rather than harm? Let us consider a Chinese fable to illustrate this worry. Unlike the enhancement of height, this example is not

⁷³ See p. 152.

⁷⁴ See p. 17 and p. 129.

⁷⁵ See Walter 1997 and Powers 2001.

⁷⁶ Zimmerman 1991, p. 607.

self-defeating. So it is worth mentioning. A farmer wants to increase his farming productivity by making his rice seedlings grow taller and faster. But how can he do it? He thinks that he is smart because he figures out a way that no one else has figured out before. He pulls up all his rice seedlings and is excited to come back next morning expecting them to grow taller and faster than anyone else's. Certainly, we know what would happen. All his rice seedlings die. And he is shocked to see that and still doesn't know why! The point is that if we don't know the scientific consequences, we may think that our ignorant actions, e.g., pulling up all rice seedlings, are good for productivity or other good consequences. But in the end the results may not be what we think and expect. The same reasoning could be applied to these enhancements of memory, intelligence, math and reading skills, etc. Nils Holtug also raises the same concern. He says, "Furthermore, children with enhanced characteristics might feel a special pressure that they should do well. It is not clear that people would be better off in such a society. On the other hand, it may not be clear that they would not either."⁷⁷

Another point is that even if these enhancements may increase an individual's productivity, it will not necessarily increase the social productivity as a whole. This is the so-called fallacy of composition. For instance, consider the US men's Olympic basketball "Dream Team" in 2004. It was said that the majority of the players were the best to play for their positions. Since the US men's team has the best basketball programs in the world, one might think that the Dream Team should be the best team in the world. To win the championship should be a piece of cake. But it wasn't in 2004. (It was before 2004.) The Dream Team barely won the bronze medal.⁷⁸ Therefore, what is good for an individual is

⁷⁷ Holtug 1993, p. 412.

⁷⁸ We may argue that there were many other factors, e.g., atmosphere and crowds, etc., why they didn't win

not necessarily good for the whole because there might not be any teamwork or synergy. After becoming more “productive” or “smarter,” each individual may consider oneself too good, too proud, or too smart to cooperate on a team. Sometimes, things might even get worse so that it counteracts the whole. If so, can we know whether enhancement will go in a good synergistic direction? In my opinion, there is no way to know since we are not omnipotent and omniscient. Since we will never be able to stop the inquiries and progress of genetic intervention, what should we do? Francoise Baylis & Jason Scott Robert write, “We contend that attempts to develop and use such [enhancement] technologies are inevitable.”⁷⁹ I think that all we can do is cautiously proceed.

Type (1) is what Buchanan et al. may reject and therefore it is my primary focus here. For (1) shows that there is no necessary connection between disease (or impairment) and fair equal opportunity. If (1) is right in some cases, then Buchanan et al.’s argument will not be sound. I will show how (1) is plausible by using some counterexamples, including their own example of Johnny and Billy.

II. Counterexamples⁸⁰

A second way to see this underlying problem, i.e., that there is no necessary connection between disease and fair equal opportunity, is through some counterexamples. First, consider Buchanan et al.’s example of Johnny and Billy. Among those three reasons mentioned in Chapter 1, the main reason why Buchanan et al. argue that we should treat

the gold. Granted, but the lack of teamwork or synergy should be one of the main reasons, other things being equal.

⁷⁹ Baylis and Robert 2004, p. 3. Also see Berger and Gert 1991, p. 668.

⁸⁰ There is an underlying assumption in all of these counterexamples. That is, theoretically, we should be able to attribute all of these counterexamples to the genetic causes one way or another, as Buchanan et al. construct the cause for Billy’s shortness.

Johnny and Billy is that both suffer the same disadvantage of height that will affect their equal opportunity to compete equally in a just society. The second reason—beyond their control—is relevant only if the first and the third are not legitimate reasons. For the second one is what the brute luck view argues for but Buchanan et al. don't support this view. The third reason—the prejudice of “heightism”—has a lot to do with what I am trying to offer here. For it shows what the dominant cooperative framework favors. If height isn't a dominant advantage, then you cannot say both suffer the same disadvantage of shortness that will affect their equal opportunity to compete equally. Is this possible? I believe so since what counts as an advantage or disadvantage depends on social contexts. Since social contexts will change over time, what counts as advantages or disadvantages will (or may) change too. Virtually all philosophers, including Buchanan et al., agree with this; for instance, Arno G. Motulsky suggests this point strongly.⁸¹

Also, when Buchanan et al. argue that their concept of justice is not an equal distribution of all natural assets, they write,

First, even if justice ought to be concerned with inequalities in natural assets, what counts as such an asset (or deficit) is at least partly determined by the social structure—and preeminently by which sorts of traits the dominant cooperative framework of a given society favors...Because the dominant cooperative framework changes over time, the value of various traits also changes.⁸²

Now let me explain how it is possible that height won't necessarily be an advantage besides the problem of being self-defeating. Theoretically, it is possible that anti-heightism could dominate a cooperative framework. For, according to evolution—the survival of the fittest—it is possible that short people (or even dwarfs) will be the dominant ones in the

⁸¹ Motulsky 1983, p. 136.

⁸² Ibid., p. 79. I wonder why Buchanan et al. are not aware that these statements could be used against their own argument.

future when Earth doesn't have enough resources to sustain all people. In this condition, taller people may not be able to compete with shorter ones since they would need to consume more resources. Eventually, all taller people will die out and the shorter will dominate in that society. Then, height will be a disadvantage rather than an advantage to compete. Is this scenario realistic? We can take the extinction of dinosaurs as an example. One of the possible reasons why dinosaurs couldn't survive in that hostile environment (whatever it was) could be: they were too big and couldn't find enough resources to adapt and sustain their race. Contrarily, the smaller mammals were able to do that and survived. If so, being bigger or taller isn't always better. Only the fittest will survive. Therefore, this scenario is possible, especially when resources become very scarce.

There might be a problem with this hypothesis. It may take a very long time for shortness to become a dominant cooperative advantage. If so, it doesn't make much sense to argue this way. This objection seems to be a good one. But, contrarily, it is exactly what I need to defend my scenario. When we talk about whether one has an advantage or disadvantage, it should be within the period of time in which he or she lives, not the period of time after he or she dies. As humans evolve, so may the advantage of shortness. It will need time to become a dominant advantage. In addition, since time is relative, from the perspective of evolution, a very long period of time for human beings will be only a blink of time for evolution. Even if these points were not true, this objection would not affect my point. My point is to show that the dominant advantage or disadvantage is contingent. It depends on not only when but also where we live and sometimes what kind of jobs or positions we have.

If so, there is no necessary connection between the shortness caused maybe by some disease (or impairment) and fair equal opportunity. Then, based on justice as fair equal

opportunity, we have no moral obligation to treat Johnny and Billy if their shortness will not affect their fair equal opportunity. If this is the case, Buchanan et al. will face another (maybe serious) problem. In general, most people will think that it is fine not to treat Billy since Billy will still be able to function normally and nothing threatens his life. But what about Johnny? Johnny does have a brain tumor we ought to do something about it, if resources permit. If we have a moral obligation to treat Johnny, what justification should we use? Buchanan et al.'s argument cannot be applied here since it is not an issue of justice as fair equal opportunity. So Johnny will be left out without treatment. Buchanan and his co-authors' argument only works when there really is a necessary connection between disease (or impairment) and fair equal opportunity. Buchanan et al. will miss one of the most important medical obligations—to relieve suffering or to cure disease. We cannot use only justice to cover all areas of biomedical ethics. Buchanan et al. also agree with this. They say, "Justice, however, is not the only source of obligations. In virtually all moral theories, a prominent place is given to the obligation to prevent harm, which in some cases is not assumed to be grounded in justice."⁸³ But where does the principle of nonmaleficence (or beneficence) play a role in Buchanan et al.'s theses?⁸⁴ They do not argue for that principle. So they cannot just assume that they have that principle included. This is another underlying problem for them. This problem may be caused when they take a further step from Daniels's theory. For Daniels's theory is able to avoid this problem but Buchanan et al.'s cannot. I will explain this in the counterexample of genius.

Buchanan et al. might respond to this problem in the following way. They might argue that Johnny's and Billy's shortness is not a disease but it does affect their fair equal

⁸³ Ibid., p. 99.

⁸⁴ See Tom Beauchamp and James Childress 2000, *Principles of Biomedical Ethics*.

opportunity to compete equally—Type (2) situation. And then based on justice as fair equal opportunity, we ought to treat Johnny's tumor even if we don't consider it a disease and to enhance Billy's height. Most people won't have a problem with treating Johnny's tumor even if we don't think that it is a disease, but we might have a concern about enhancing Billy's height even if it is not a peculiar or extravagant taste. For what justification should we use? If we use justice as fair equal opportunity without any reservation, it is too strong. For everyone who thinks that he or she is short can demand such enhancement since height is a disadvantage. Or society may order every short person to have such enhancement to maintain a fair game so that society may be better off, e.g., better stabilized. If so, this will cause a tension between libertarianism and communitarianism. That is, what if the shorter don't want that enhancement? Furthermore, this problem could slip into every issue so that people may consider it unfair. Besides, Billy's enhancement of shortness may be self-defeating. Therefore, Type (2) is a better argument for Buchanan et al. For we still need to "treat" both Johnny and Billy even though it may be problematic and self-defeating in Billy's case.

A second counterexample concerns genius. Is genius diseased? This counterexample seems to be the most powerful one against Buchanan et al.'s argument. Lawrie Reznek says, "Disease can not be equated with abnormal conditions because some abnormal conditions like genius are not disease."⁸⁵ No rational people will consider "genius" a disease. But according to Buchanan et al.'s definition of disease, it is difficult for them to say that it is not. If so, there is no necessary connection between the disease of "genius" and fair equal opportunity. On the contrary, "genius," whatever it is, is an advantage in competition. Then, should we treat or remove that "genius" disease so that everyone else can compete equally?

⁸⁵ Resnek 1995, p. 574.

No one thinks that we should. Then, what could Buchanan et al. respond to this counterexample? In his reply to Buchanan's critique, Daniels writes,

Suppose poor preventive care allowed some debilitating parasitic disease to be nearly universal in a society. I think the opportunity account still helps us here, for it is not only a principle governing competitive advantage. The disease in this case keeps each individual from adequately carrying out any life plan that would otherwise be 'reasonable' in his society.⁸⁶

Thus, Daniels can resolve this problem by proposing that we need not treat the "genius" disease since a genius can still have the normal (or even better) opportunity range to carry out his life plan. Simply, Daniels's normal opportunity range is broader than Buchanan et al.'s justice as fair equal opportunity. Therefore, Buchanan et al. cannot answer the same way as Daniels can. There are two ways out for Buchanan and his associates. First, they can change their focus to justice as efficiency, which means that we should not level people to have fair equal opportunity. But the problem with this approach is that this is not their cardinal argument. For instance, their hard cases have nothing to do with justice as efficiency. Second, they may propose that "genius" is not a "disease." But to support this claim, they have to agree with some sort of normative or value-laden ideas of disease. However, a value-laden idea of disease is what Boorse, Daniels, and Buchanan et al. all reject. Therefore, neither solution will work for them.

To make this counterexample a more challenging case, let us change it a little. Suppose that an autistic person has a great gift or talent such as superb math or musical ability. Suppose that his or her autism is due to some genetic defects that cause him or her some competitive disadvantages. For example, he or she couldn't communicate and socialize with people very well or he or she has some sort of disability. If his or her genetic defects

⁸⁶ Daniels 1985, p. 109.

have nothing to do with his or her extraordinary talent, the answer for Buchanan et al. is easy: we should treat his or her genetic defects since they do cause some competitive disadvantages. However, what if these genetic defects are also the causes that make him or her so gifted? Then what would Buchanan et al. say? They cannot say for sure that we ought to treat his or her genetic defects because of justice as fair equal opportunity. In this scenario, the primary ethical consideration has changed. We need to respect his or her autonomy more than to consider his or her fair equal opportunity. If so, the autistic disease has no clear implication for justice as fair equal opportunity. That is, there is no obvious (or necessary) connection between the autistic disease and fair equal opportunity.

A third counterexample is sickle cell disease (or anemia). At first, I was worried about whether we could use sickle cell disease (or anemia) as a counterexample. However, since Buchanan et al. accept sickle cell anemia as disease, it is reasonable to use it as a counterexample. They say, “Knowledge and power do not always move exactly in tandem; some diseases are less well understood than sickle-cell anemia, but...Typically, progress has been made for phenotypes, like sickle-cell anemia, that are diseases and are influenced by a small number of genes.”⁸⁷ In addition, Christopher Boorse does not oppose it either when other philosophers use sickle cell anemia as an example against his theory.⁸⁸ Also, Randolph Nesse says, “Sickle cell disease is a disease even if the sickle cell allele is selected for.”⁸⁹ Therefore, it is legitimate to call sickle cell anemia a disease and use it as a counterexample against Buchanan et al.

Sickle cell disease is a genetic disorder or abnormality caused by the homozygous-S

⁸⁷ Ibid., p. 368.

⁸⁸ See Engelhardt 1976, 1986, and Van de Steen and Thung 1988.

⁸⁹ Nesse 2001, p. 44. Also, see Anderson 1989, p. 688.

genotype. The destruction of red cells causes anemia in sickle cell disease. Although the production of red cells in the patient's bone marrow will increase five to ten-fold, it still cannot keep up with the destruction. The average half-life of normal red cells is about 40 days but it could drop to as low as four days in patients with sickle cell disease. Even with genetic defects, however, sickle cell disease is able to protect people from deadly malaria.

So there is no necessary connection between sickle cell disease and fair equal opportunity for two reasons. First, in general, people with this disease are still able to function normally and thus compete equally. It depends on how serious the disease is and when it expresses itself. Second, like the genius case, in an environment with malaria, people with this disease or trait will contrarily have a survival and competitive edge. Therefore, Buchanan and his co-authors cannot say that there is a necessary connection between sickle cell disease and fair equal opportunity. Another similar example is Huntington's disease. People with Huntington's disease can still function normally and compete equally until the defective gene expresses itself. (However, unlike sickle cell disease, there is no selective advantage known with Huntington's disease.) Therefore, until the defective gene expresses itself, Buchanan et al. cannot say that there is a necessary connection between Huntington's disease and fair equal opportunity.

A fourth counterexample is dyslexia. Daniels uses this example to explain his theory of rights to health care. He writes, "As I note earlier, curing dyslexia might well be more important in some societies than others, though it is a disease in all of them."⁹⁰ This example is also used by Buchanan et al. (p. 79). Therefore, like sickle cell disease, it is legitimate to use dyslexia as a counterexample. The point here is that the disease of dyslexia in some societies may not be a disadvantage and thus, it won't affect one's fair

⁹⁰ Daniels 1985, p. 55.

equality of opportunity to compete equally in those societies. Therefore, there is no necessary connection between them. If so, we cannot appeal to justice as fair equality of opportunity to justify our obligation to cure dyslexia in those societies. Then what could Buchanan et al. suggest? Daniels offers an answer: it depends on whether society is literate or not (p. 109). I assume what Daniels tries to offer is this: society ought to cure dyslexia due to one's right to health care depending on the degree of literacy of the society. I suspect that this will work. For most illiterate countries are not democratic societies. Human rights are not politically important at all. So there may be no such a right for people to claim. What about Buchanan et al.? They offer their argument based on two reasons: fair equality of opportunity and social productivity. Suppose that we also can trace the disease of dyslexia to specific gene(s). Since justice as fair equal opportunity cannot be used in this case, they might appeal to social productivity. However, social productivity has no truly moral status since it is a desire or craving.⁹¹ Society is not really obliged to increase social productivity. So we might still be left without a justification for curing dyslexia in those societies and this shows that there is no necessary connection between the disease of dyslexia and fair equal opportunity.

Buchanan et al. may pose a legitimate objection to this counterexample. They may argue that dyslexia is a value-laden disease conceit. Agreed, but Daniels does call it a disease and Buchanan et al. also use it to support some of their views. So there is either a mistake or an inconsistency. It is a mistake if Daniels should have called it an impairment rather than a disease. It is incoherent if Daniels insists that dyslexia is a disease. For this is inconsistent with his idea of value-free disease. I will discuss more below regarding whether disease is value-free or value-laden.

⁹¹ See Chapter 4 and 5.

A fifth counterexample is obesity. According to an NIH report, there are 29 million out of 290 million obese Americans today. That is, one-tenth of Americans are obese. Some updated reports indicate that one-third of Americans are either overweight or obese. According to Buchanan et al.'s definition of disease as an adverse departure from normal functioning, they should agree that serious obesity is a disease since one cannot function normally. But does it mean that one cannot compete equally? Not necessarily. Again, it depends on when, where, and what opportunity we mean. For instance, obese people in Fiji may not suffer any disadvantage. People in Fiji consider obesity not only normal but also "beautiful" even though it has occurred to them recently that obesity might be a health problem. Also in Japan, if we want to compete in the prestige sport of Sumo wrestling, "obesity" is a necessity and even an advantage. It may be the same thing in the US with playing football. The point here is that abnormality is not absolutely connected to disadvantage. Randolph Nesse also points out that sometimes manic-depressive illness may be a selective advantage but yet still be considered abnormal (p. 38). For instance, consider the Dutch painter Vincent von Gogh. Some people believe that his great painting skills and creativity are related to his manic depressiveness. Also some normative philosophers, e.g., Tristram Engelhardt, and Joseph Margolis, may argue the same thing. David Resnik points out their views:

According to the value-laden [normative] approach, our concepts of health and disease are based on social, moral, and cultural norms. A healthy person is someone who falls within these norms; a diseased person deviates from them. Someone who deviates from species-typical functions could be considered healthy in a society that views that deviation as healthy: although schizophrenia has a biological basis, in some cultures schizophrenics are viewed as "gifted" or "sacred," while in other cultures they are viewed as "mentally ill." Likewise, some cultures view homosexuality as a disease, while others do not.⁹²

⁹² Resnik 2000, p. 367.

In addition, in this counterexample, Buchanan et al. might face another problem—to decide how serious obesity has to be to count as a disease (or impairment) and how it affects one’s fair equal opportunity. Can biomedical scientists tell us where to draw a clear line? The answer is no. I will explain this later.

Finally, like obesity, there is a cluster of diseases that will raise this question: How severe must they be to affect one’s fair equal opportunity? For instance, sleep disorder, hypertension, depression, and other possible mental illnesses or diseases. These are diseases according to Buchanan et al.’s definition. But they will not necessarily affect one’s fair equal opportunity. It depends on how serious they are. Arno G. Motulsky says, “The severity of a disease is an important criterion in deciding when to introduce a new therapy.”⁹³ And this is their underlying problem too. However, Buchanan et al. may not agree. They think that the degree of seriousness is not the issue but the etiology or explanation of these diseases is. Buchanan and his associates write,

The factor underlying this reasoning did not have to do with *the degree of suffering* involved in being shy; the reasoning depended on the *etiology or explanation* of the shyness. The point is illustrated by another case [the Unhappy Husband] in which clinicians distinguished between treatment of illness and enhancement of well-being.⁹⁴

Since Buchanan et al. do not oppose what current medical insurance plans cover or what clinicians practice, I assume that they agree with current medical practices--the main issue of these physical or mental illnesses should be the etiology or explanation rather than the degree of severity. If so, they don’t have this underlying problem and need not give any more details. But I wonder whether this is a good response. There are three problems with this response. First, based on these counterexamples, the nature of these physical or mental

⁹³ Ibid., p. 139.

⁹⁴ Ibid., p. 111.

illnesses has a lot to do with how serious they have to be to count as disease and how they affect one's equal opportunity. Second, if justice as fair equal opportunity is their central idea, it is inevitable that they have to explain why the degree of severity has nothing to do with their argument. Otherwise, the necessary connection, as I argued, may not be there. Third, what the current medical insurance plans and physicians decide to cover or to treat does not necessarily mean that they are right and that the coverage or treatment is justified. Their points of views to justify what they should cover are not necessarily based on justice as fair equal opportunity. Their main considerations could be cost-effectiveness, medical effectiveness, and profits. (See Chapter 3.) Therefore, it is not a good response. This underlying problem stands.

In addition to the problem above, regarding what counts as disease or impairment, Buchanan et al. cannot assume that their definition of disease is free from controversy. They write,

The biomedical sciences for humans, like the veterinary sciences for animals, study both the variation in the functional organization typical for our species and the departures from normal functioning that we call disease and impairment (Boorse 1975, 1976, 1977; Kitcher 1996). The line between disease and impairment and normal functioning is thus drawn in the relatively objective and nonevaluative context provided by the biomedical sciences, broadly construed. What counts as a disease or impairment from the perspective of these sciences is largely free from controversy in the broad range of cases.⁹⁵

Although I agree with Buchanan et al. that masturbation and homosexuality are inappropriately classified as disease or impairment, the quotation above is not a satisfactory answer for two reasons. First, Buchanan et al. expect too much in assuming their definition of disease is nonevaluative and thus can provide the foundation they need. They may use this claim that disease is value-free to dismiss some of my counterexamples

⁹⁵ Ibid., pp. 121-122.

above, for instance, dyslexia and obesity. For both are value-laden. But I doubt that they could. There are two reasons. (1) Buchanan et al. also use dyslexia to demonstrate why we should not try to pursue an equal distribution of natural assets. I see no reason why we cannot use it to demonstrate that there is no necessary connection. They may not call it disease but impairment. Even so, my argument still stands. For by the same reasoning, we can still provide the same argument for impairment. (2) A more important reason: as a matter of fact, it is a very controversial issue to define disease. (See my fifth section below.) Second, they expect too much from the biomedical sciences. In other words, they expect their definition to cover all diseases. I will discuss this issue later. They simply assume that biomedical scientists can provide them with everything they need to support their argument. Biomedical sciences may not be able to (or need not) do so. For instance, recall Buchanan et al.'s examples of the Shy Bipolar and Shy Normal, and the Unhappy Husband. Biomedical sciences need (or can) not provide the depth and detail that Buchanan et al. later add to their argument. The explanatory burden is on Buchanan et al. Also, all my counterexamples above do show that their definition has some weaknesses.

III. Examining their arguments

Let us recall their three reasons brought up in the case of Johnny and Billy: both suffer the same disadvantage, it is beyond Johnny's and Billy's control, and both are subject to the social prejudice of heightism. Therefore, based on justice as fair equal opportunity, we ought to treat both Johnny and Billy. Are these three reasons legitimate to justify why we ought to treat both? I have given detailed discussions in the counterexamples above that there may not be a necessary connection between disease and fair equal opportunity. I will offer a different perspective next.

Buchanan et al. approach this example of Johnny and Billy from the perspective of

justice as fair equal opportunity, not from the perspective of disease. They write, “According to the fair equality of opportunity account of justice and health care (i.e., the ‘social structural’ view), we are concerned about disease and impairment because of their impact on opportunity.”⁹⁶ If we approach this example from the perspective of disease, it is obvious that Billy has no disease and thus may not suffer any disadvantage. He can still function normally, but merely may not be able to compete equally.⁹⁷ Sometimes, making a claim about justice may demand (or expect) too much and blind us to some important issues. Whether both suffer equally the same disadvantage depends on several factors. As I argue above, social prejudice plays an important role in deciding whether height is a disadvantage or not. Buchanan et al. should agree with this since the prejudice of heightism is their third reason.

For instance, a statistic shows that the average height of all the US Presidents is greater than that of all Americans. This statistic may give people a wrong impression or prejudice that being taller is being smarter and better. If we want to be a president, we had better be taller. Instead of enhancing one’s height, an alternative is to change that social impression or prejudice. This alternative may be better for two reasons. (1) It won’t have the self-defeating problem; i.e., if everyone gets the enhancement of height, then height won’t be an advantage at all. (2) It might be an easier and better method. Unless the technology of enhancing height becomes simpler, easier, and more cost-effective, the alternative is easier since we can teach and show people through education that being taller isn’t always

⁹⁶ Ibid., p. 124.

⁹⁷ Also see LeRoy Walters 1997. He gives a similar growth hormone example and asserts, “Our reason for asserting this difference is that short-statured people are often physically healthy in every aspect of their physiological functioning. An alternative to genetic enhancement in their case would be to attempt to change social attitudes toward short-statured people (p. 113).”

smarter and better. To be successful or to be a president, being taller is not a necessary condition. Intelligence plus hard work and dedication are. It is a better approach to have people believe right than to enhance an individual or the entire population. For since the varieties of height, size, and intelligence will always exist in a society, it would be a never-ending process and pursuit to enhance the relevant traits for an individual or the whole population. Patricia Baird and Jean Porter also suggest the same idea.⁹⁸

In addition, there is another objection to saying that both suffer the same disadvantage of height. According to the doctrine of sufficiency supported by Alexander in Chapter 1, Billy may not suffer the disadvantage of shortness even if society has a prejudice of heightism. If Billy thinks that he has enough opportunities to compete for what he cares for in his life plan and if society also does enough to give him sufficient opportunities to compete, then it is a fair game for Billy. And thus, there may not be a necessary connection between Billy's shortness and fair equal opportunity. Also there may be no moral obligation for society to enhance his height. Therefore, Buchanan et al.'s argument may fail in this situation. There is another point in Alexander's thinking. If I am right, his proposal could stop giving government too much power and control, and thus may ease some worries about big government. For if there is no moral obligation for society to do something, it entails that government will have less moral grounds to demand power and control. If so, a big government is less likely to happen.

After discussing Billy, we can say the same thing about Johnny based on the doctrine of sufficiency. And it is even more important and interesting to discuss Johnny. Discussing Johnny's case will show that Buchanan et al.'s argument may be meaningless, and demand (or expect) too much and blind us to some issues. Let us change the Johnny's case a little.

⁹⁸ See Baird 1994, p. 575 and Porter 1990, p. 423.

Suppose that Johnny's tumor is a malignant one, i.e., cancer. If so, what will be the first thing that comes to Johnny's mind? To combat cancer or to ask for competing equally? The answer is easy, of course. It is to combat cancer because for Johnny, to have a fair equal opportunity to compete is not the most important and urgent thing at all. Therefore, Buchanan et al.'s argument is meaningless in this sense. To make it worse, suppose that Johnny is a five, six, or ten years old child who has no concern with equal competition at all. Let us call him the Child Johnny. To argue for justice as fair equal opportunity to compete utterly does not make any sense to the Child Johnny and to those young children who have cancer or severe disease that has no cure yet. For them, the principle of beneficence is more important and appropriate. This is how a focus on justice may blind our reasoning. Again, Allen Dyer points out that after the 1990s, social justice has replaced beneficence to become the main principle to guide our decisions for biomedical ethics. This is not a good trend. I believe that the principle of beneficence or nonmaleficence should not be less important than the principle of justice in guiding biomedical ethics. Finally, to say that it demands (or expects) too much is to say that Buchanan et al.'s argument for justice as fair equal opportunity demands (or expects) too much to cover all cases, including the meaningless case of the Child Johnny. W. Miller Brown also points this out.⁹⁹

IV. Some critiques of Daniels's theory

Since Buchanan et al. use Daniels's theory as a basis, and if there is a problem with his theory, then there will be the same problem for Buchanan et al. too. As I point out at the beginning of this chapter, several philosophers notice that Daniels implies that there is a necessary connection between health care (or disease) and fair equal opportunity. Some of

⁹⁹ See his p. 317 quotation below.

them argue against Daniels's implication.¹⁰⁰ Let us look at their criticisms and arguments.

First, Lesley Jacobs says, "At first sight, Daniels appears to have indeed identified egalitarian grounds for universal access to health care. As we have just seen, his argument is that it is necessary to guarantee equality of opportunity."¹⁰¹ One of the reasons why Jacobs thinks that Daniels's theory fails is that his argument depends on a weak and arbitrary distinction between species functioning and opportunity (p. 338). By "arbitrary," Jacobs means that Daniels's theory couldn't tell us what is the morally significant distinction between disadvantages resulting from ill health (or disease) and disadvantages resulting from the lack of skills or talents. It is arbitrary to argue that the former will affect one's normal functioning (and thus opportunity) but the latter won't.¹⁰² By "weak," Jacobs means that the connection between ill health (or disease) and opportunity is weak. Hence, Jacobs's argument supports my view that there is no necessary connection between disease and fair equal opportunity.

Second, Kenneth F. T. Cust writes, "While Daniels's argument does not guarantee a universal individual right to health care, it does guarantee that we would have those 'rights and entitlements [to health care that are] defined within a set of basic institutions governed by the fair equality of opportunity principle' (Daniels, 54)."¹⁰³ Cust offers three objections to Daniels's theory. Two are related to my discussion here. (1) Like Jacobs, Cust says that there is an arbitrary and unsubstantiated connection between health care and fair equality

¹⁰⁰ Some philosophers support Daniels's theory; for instance, Gert Jan Van Der Wilt. However, while supporting Daniels's model, Gert Jan Van Der Wilt thinks that Daniels's view is inadequate to explain why we still have conflicts over public funding of health care services.

¹⁰¹ Jacobs 1996, p. 336.

¹⁰² This won't be a problem for Buchanan et al. since they also argue for the latter in some cases, for example, to enhance memory, math and reading skills.

¹⁰³ Cust 1993, p. 154.

of opportunity (p. 157). (2) Cust argues that contrary to what Daniels argues for, a right to health care may narrow one's normal opportunity range (pp. 155-156). Suppose that society prefers funding health care through taxation first. If so, there are two possibilities: the money taxed is either sufficient or insufficient. If it is sufficient, then it is possible that people won't have enough money left for other non-health-care preferences since health care is so expensive that government has to tax people at a very high rate to collect sufficient money. What if those non-health-care preferences are within one's normal opportunity range? If so, health care will restrict one's normal opportunity range since he or she won't have enough resources to pursue those non-health-care preferences. If it is insufficient, then a possible way to fund health care is through borrowing money, for instance, raising the national debt. If so, by the same token, the normal opportunity of future generations will be restricted although the present generation will not be affected. Therefore, health care will narrow the normal opportunity range of either the present generation or future generation.

Therefore, Cust's criticism supports my view that there is no connection between health care (or disease) and fair equal opportunity. However, there might be one concern. Cust's objection involves primarily the relation between health care and normal opportunity rather than fair equal opportunity. Although there is no direct connection between normal opportunity and fair equal opportunity, I believe that this is not a problem. Let us see why. So what is the relation between one's normal opportunity range and one's fair equal opportunity? Daniels does not give a detailed explanation besides the following statement. Daniels writes,

The normal opportunity range for a given society is the array of plans reasonable persons in it are likely to construct for themselves...I can now state a fact central to my approach: impairment of normal functioning through disease and disability restricts an individual's

opportunity relative to that portion of the normal range his skills and talents would have made available to him were he healthy.¹⁰⁴

If I understand Daniels right, the conception of normal opportunity range is broader than that of fair equal opportunity. Lawrence Stern also points out the similar thing. Stern says, “Since his [Daniels’s] notion of opportunity is so broad, more ad hoc exceptions to FEO [fair equal opportunity] may be necessary from him than for Rawls.”¹⁰⁵ If so, Daniels should agree with this proposition: if something will increase one’s fair equal opportunity, then it will increase one’s normal opportunity range but not vice versa since the conception of normal opportunity is broader than that of fair equal opportunity. Therefore, by *modus tollens*, if something will narrow one’s normal opportunity, then it will narrow one’s fair equal opportunity. So if Cust is right, then health care or preventing disease will not necessarily increase one’s fair equal opportunity. On the contrary, it might have a negative impact on one’s fair equal opportunity, which is not what Daniels and Buchanan et al. argue for.

Third, John Moskop says, “Very briefly stated, Daniels’ argument is as follows: Since disease involves impairment of normal human functioning, it restricts a person’s range of opportunities to pursue careers and projects. By preventing, curing, or compensating for disease, therefore, health care makes a limited but important contribution to guaranteeing fair equality of opportunity.”¹⁰⁶ Moskop indicates that there is a “limited but guaranteeing” connection between health care and fair equal opportunity. However, Moskop doesn’t offer any more detailed explications for what “limited but guaranteeing” means. Moskop seems to say that the “limited” connection is prior to the “guaranteeing” one. If so, the

¹⁰⁴ Daniels 1985, pp. 33-34. Also see his p. 109.

¹⁰⁵ Stern 1983, p. 345.

¹⁰⁶ Moskop 1983, p. 334.

“guaranteeing” connection cannot be sustained without the “limited” condition. That is, the “guaranteeing” (or necessary) connection between health care and fair equal opportunity is contingent. If so, this upholds my view.

Fourth, Lawrence Stern points out that Daniels assumes that there is a necessary connection between impairment (or disease) and normal opportunity range. Stern writes,

Health care needs—the needs each of us has to maintain, restore, or compensate for the loss of, good health—are for this reason, Daniels tells us, objectively ascribable and objectively important. Any impairment of species-typical or species-normal (Daniels uses the terms synonymously) functioning or activity narrows the opportunity range in his society.¹⁰⁷

Stern later criticizes the necessary connection since some impairment or disease may be normal (p. 345). Stern offers two arguments and several examples against the necessary connection. (1) Even if a person loses an opportunity because of disease, e.g., tooth decay, aging, hysterectomies, and pregnancy, he or she may not be interested in that particular opportunity; for instance, recall my example of the Child Johnny. He or she still can carry out his or her life plans accordingly with what he or she is interested. If so, people’s preferred opportunities won’t be affected by these diseases. Therefore, there may be no necessary connection between disease and opportunity. There may be a concern related to my argument. What opportunity does Stern mean here? The way he uses the term “opportunity” seems to mean normal opportunity rather than fair equal opportunity. Since the conception of normal opportunity is broader than that of fair equal opportunity and if there is no necessary connection between disease and normal opportunity, it does not necessarily mean that there is no necessary connection between disease and fair equal opportunity. I assume that Stern may not notice this nuance. However, this won’t affect his

¹⁰⁷ Ibid., p. 340.

argument. For he can still argue the same thing about disease and fair equal opportunity. However, if Stern cannot argue so, his argument may not support my view. This worry won't be sustained. For Stern's examples are diseases rather than the broader conception of health. If they are disease, they can be applied to both connections. That is, if the example of disease shows no necessary connection between disease and normal opportunity, it can also be used to show no necessary connection between disease and fair equal opportunity. For example, consider Stern's example of tooth decay. Unless a person having tooth decay wants to apply for a job that has something to do with healthy teeth, there is no necessary connection between his or her tooth decay and fair equal opportunity.

(2) Stern thinks that Daniels may be confused about two concepts: the loss of opportunity and the loss of ability. Stern writes, "Daniels seems to conflate loss of opportunity and loss of ability in his discussion. And indeed for practical purposes they are close."¹⁰⁸ For instance, a blind man due to his disability may lack some opportunities that a normal person may have. However, the concept of disability is distinguishable from that of opportunity. Stern writes, "Ability is a state of the person (or organism). Opportunity is a set of circumstances external to the person (or organism) that permits or facilitates action or functioning. Health is largely a cluster of abilities, including the ability of the body to combat infections, etc...Health care is a form of opportunity."¹⁰⁹ I assume what Stern means is this: if health care is a form of opportunity, not a protection of opportunity as Daniels argues, then people can choose whether they want that opportunity or not even though they lack some ability or state of health. It is like education. Rational people can choose whether they want education no matter what opportunity (or ability) they have or

¹⁰⁸ Ibid., p. 347.

¹⁰⁹ Ibid., p. 347.

don't have. Therefore, there is no necessary connection between ability (or health) and opportunity. Since this involves people's choice—by the principle of respecting autonomy, we can apply the same argument to disease and fair equal opportunity. That is, if a person has disease, he or she still can choose to compete or not to compete no matter whether it involves fair equal opportunity or not. Thus, there is no necessary connection between disease and fair equal opportunity.

In addition, we can also look at the necessary connection from the point of view of Stern's interpretation of Daniels's theory. If Stern's interpretation that health care is to protect opportunity is right, health care should protect people's fair equal opportunity no matter whether they choose health care or not. Therefore, the necessary connection exists no matter what people choose. If this is Daniels's argument for a right to health care, there are still two problems. First, Gert Jan Van Der Wilt points out that Daniels's theory is inadequate to explain why we still have conflicts over public funding of health care services. Government is obliged to provide adequate access to health care no matter what people choose. This may demand too much from government. Second, both Daniels and Buchanan et al. use the analogy of education to demonstrate their points. However, the nature of health care is in some way quite different from that of education. People can still live a healthy life without adequate education but they cannot do that without health; i.e., health is more important and urgent to people's lives and concerns. If so, most people would have to choose health care, if there is a forced choice. Therefore, we should not debate about what government ought to do—it should provide adequate or minimal access to health care. But this is not the case in the US today. Then, what is the problem with Daniels's theory? Daniels may demand too much without considering resource limitations.

Finally, Ronald M. Green agrees with Stern and writes, "Nevertheless, this [Daniels's]

approach also has serious problems and the most important of these seem to be identified by Stern. It is questionable, for example, whether many forms of illness really diminish opportunity or are even best thought of in these terms.”¹¹⁰ Green agrees with Stern that it is the pain, suffering, and disability associated with disease or illness that bother us, not the loss of fair equal opportunity. Thus, Green also doesn’t think that there is a necessary connection between disease and fair equal opportunity. Although Green doubts whether many diseases or illnesses will really decrease opportunity, he does not offer any examples or arguments. However, Green raises an interesting question: “What is gained by linking health care so narrowly to opportunity?”¹¹¹

Buchanan et al. might argue that the necessary connection in these authors’ arguments above is different from what I suggest since it is a connection between health care and fair equal opportunity, not between disease and fair equal opportunity. This objection will not hold. For according to Boorse’s, Daniels’s, or Buchanan et al.’s definition of health, health is the absence of disease. So there is a direct relation between disease and health. The purpose of health care is to cure or prevent disease. If there is no necessary connection between health care and fair equal opportunity, it implies that there is no necessary connection between disease and fair equal opportunity either. So it should not be a problem for my suggestion. Hence, my argument stands.

However, their objection may hold if the definition of health is not Boorse’s or Daniels’s. In my opinion, “health is the absence of disease” is a narrow definition. There is a broader definition. For instance, Robert Sade and James Lennox define health as being related to happiness, welfare, or well-being, which is a broader definition. I will discuss

¹¹⁰ Green 1983, p. 375.

¹¹¹ Ibid., p. 375.

their views later. In this broader definition, the purpose of health care is not only to cure or prevent disease but also to promote one's happiness, welfare, or well-being.

V. The problem of defining disease

Contrarily to Buchanan et al.'s assumption about disease, there has been a long history of debate about what counts as disease. We can track it back to Lester S. King 1954 or David Le-Vay 1957.¹¹² It has been almost five decades since then. But we still have not reached any agreement about the nature or the definition of disease. Harold Merskey points out flatly, "It is argued that there is no agreed definition of disease. Purely biological definitions are inadequate and combined biological and social definitions are not yet satisfactory."¹¹³ David Resnik writes,

Many different writers have tried to work out variants on these two basic [value-free and value-laden] approaches to health and disease, and some have tried to develop compromise views, but suffice it to say that the first assumption mentioned above—i.e., that we have a clear and uncontroversial account of health and disease—is questionable.¹¹⁴

Hence, this topic is a never-ending and maybe fruitless pursuit, contrary to Buchanan et al.'s assumption. Buchanan et al. expect their definition to be value-free and to do too much, to cover all diseases. I will explain later.

The definition of disease is important because it deeply involves the problem of the morally arbitrary distinction between genetic therapy and enhancement, which is the most crucial issue in my dissertation and will be discussed in Chapter 3. Michael Ruse identifies

¹¹² King's article, "What Is Disease?" in *Philosophy of Science* or David Le-Vay's article, "Hans Selye and a Unitary Conception of Disease" in *British Journal for the Philosophy of Science*. These are the earliest journal references I could find. The discussions of disease must go back much earlier than these.

¹¹³ Merskey 1986, p. 215.

¹¹⁴ Resnik 2000, p. 367. Also see Ruse in James Humber and Robert Almeder, eds., 1997, p. 138, and Pellegrino 1989, p. 101.

three reasons or purposes, which, I think, are not classified properly.¹¹⁵ I will discuss them briefly. First, since the term “disease” is so loose, we need to have a better and clearer idea of it to prevent people from abusing the term. (This fits into the medical purposes below.) Second, derived from the first claim, we also need to have a better understanding of the term to prevent political or social oppression or stigmatization. (This fits into the ethical purposes below.) For instance, people might label homosexuality as a disease for their political or social ends. In 1950s Britain, homosexuals (men) were sent to jail by using the laws known as the “blackmailer’s charter.” We may say the same thing about the Nazis’ eugenics that labeled the Jews as an inferior or sick race. Third, we need to understand that disease is not a social construction, which means that we don’t just construct or understand disease from societal attitudes and decisions past and present. It is a sort of physical entity that has some scientific objectivity. (This fits into the philosophical interests below.)

In my opinion, Ruse’s three reasons can be included in three much broader, clearer, and more appropriate reasons or purposes: philosophical interests, ethical purposes, and medical purposes.¹¹⁶

First, the definition of disease is important for philosophical interests. It is argued intensively by the so-called naturalists, e.g., Christopher Boorse (1975, 1977, 1997) and Robert D’amico (1995), that disease is a natural kind and is independent of human judgments. Some so-called normative philosophers, e.g., Lawrie Reznek (1987, 1995), Tristram Engelhardt (1974, 1976), and Joseph Margolis (1976), don’t think so. They think that disease is not a value-free conception. Since it is a never-ending debate, we might want

¹¹⁵ Ibid, pp. 137-142.

¹¹⁶ W. Miller Brown offers another possible purpose—to understand the concept of health (pp. 311-312). But, then, what is the reason or purpose for understanding health? The same three reasons or purposes still can be applied to health too.

to ask ourselves this question: Is it worth pursuing this topic forever for only philosophical (either epistemological or metaphysical) interests? Almost every topic has some philosophical interest. But not every issue is worth pursuing, for instance, some of the metaphysical topics in Kripke's book *Naming and Necessity*.¹¹⁷ Sometimes, enough is enough. We should have the intelligence and wisdom to know when to stop. One of the reasons why this epistemological or metaphysical pursuit is important is that it may build a foundation for the second and the third purpose. Roberto Mordacci points this out and writes, "The main advantage of such a perspective, which is found in much of the medical discourse, is that health and disease have a clear epistemological status, being entirely a matter for empirical investigation."¹¹⁸ Therefore, I assume that Boorse and D'amico think that if disease is a natural kind and thus value-free, then we have a truly objective foundation for medical and ethical purposes; for instance, it can be used for Daniels's rights to health care and for Buchanan et al.'s genetic intervention.

Boorse's argument is not good and necessary. It is not a good argument because Boorse expects his definition to be value-free and to cover all diseases. It is not necessary because there is another way to argue for the purpose of a medical and ethical foundation. The nature of disease is not like that of the entities referred to by physics or mathematics. Boorse argues that his definition of disease is analogical to the temperature scale Celsius or Fahrenheit, or the measurement unit—meter.¹¹⁹ So Boorse expects his definition to be value-free. W. Miller Brown does not agree because, to a large extent, the definition of disease depends on the choice of the populations, which is based on people's interests (p.

¹¹⁷ Saul A. Kripke 1980.

¹¹⁸ Mordacci 1995, p. 479.

¹¹⁹ See James Humber and Robert Almeder, eds., 1997, p. 28

315). However, Boorse doesn't agree with Brown's, Engelhardt's, and Margolis's view.

Boorse argues that if they are right, animals and plants cannot be diseased. Boorse writes,

Note that both Engelhardt's and Margolis's views on disease make it difficult or impossible for animals and plants literally to be diseased. Margolis (1976) ultimately grounds disease status on a condition's relation to "the prudential interests of the race" (p. 235). Such a theory must be "adjusted" for lower animals "by extension" and for plants "by analogy" (p. 252)—a distant analogy indeed if plants have no prudential interests.¹²⁰

I don't really know why Boorse argues that disease has to be a natural kind. It is really problematic and controversial. Maybe Boorse thinks that we need a foundation to be used universally. If that is the only reason why he argues so wrongly, there is really no need to do that. A more proper question should be: Can Boorse's definition be used universally without the property of being a natural kind? I explain this in medical purposes below. Besides, Boorse also expects to cover too much from his definition. William Brown points this out,

Boorse relies on the American Medical Association's (AMA's) Standard Nomenclature and on various medical texts to determine what should be covered by the definition of 'disease.' Relying on these sources, however, leads him to include too much, which he admits, apparently thinking he is siding with standard medical usage.¹²¹

In my opinion, disease is a human conception. Such a human conception may not have the same natural status as a truly natural kind even if it may have some objectivity. If a human conception is not truly a natural kind, such as gold, then that conception may not be value-free. Suppose that no human beings existed. Then, is there any conception of "disease" in nature? I believe not. Animals never "know" what "disease" is since they don't have the concept of disease. They will just live and die without knowing anything about disease. In contrast, we generally accept that gold is a natural kind because it will still

¹²⁰ Ibid., p. 108.

¹²¹ Ibid., p. 317.

be gold with an atomic structure of 79 protons in its nucleus no matter whether human beings exist or not. If there exist some other intelligent creatures, they might give “gold” a different name, for instance, “yellow stone.” But it will not change the status of gold being a natural kind.

Robert Sade may suggest that there won’t be any concept of health and disease in nature without the existence of human beings or other rational beings. Sade develops an account of health from James Lennox. Sade says that Lennox’s “life” as species goal “may be too narrow to serve as the standard of health.”¹²² Therefore, Sade wants to expand it and suggests that flourishing is the standard of health (p. 523). What Sade implies is this: to flourish, for example, to be able to raise children, develop friendships, avoid tobacco and excessive alcohol, etc., species must have some moral concepts or values. Since only rational beings possess that capacity, there is no concept of health or disease in nature without the existence of rational beings. Therefore, it is hard to see why disease is value-free and a natural kind.

In addition, I would like to point out three problems with Boorse’s Figure 1 (the normal distribution). Boorse uses it to defend his value-free definition of disease. Boorse thinks that we are able to draw clear lines to distinguish pathology, normality, and positive health. This is problematic.

¹²² Sade 1995, p. 518.

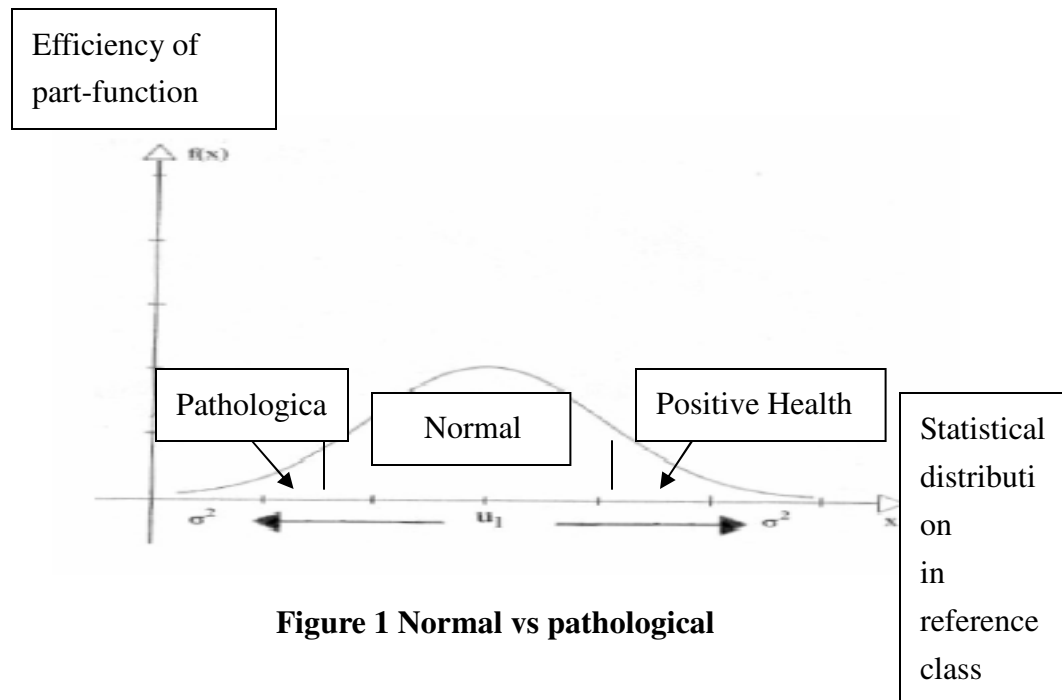


Figure 1 Normal vs pathological

(1) Unlike numbers, pathology, normality, and positive health all are qualitative. How can these qualities be quantified? Roberto Mordacci also raises the same problem. He writes, “Undoubtedly, the notion of health cannot be defined with mathematical exactitude.”¹²³ “Boorse’s thesis, like other ‘descriptivistic’, neutral or ‘analytic’ ones, considers health exclusively as a quantifiable reality defined by the normal psycho-physiological parameters of the species, while illness is experienced essentially as a qualitative change in the life of individuals.”¹²⁴ Although it is not impossible to quantify qualities, it will be a value-laden process, which may not be coherent with Boorse’s thesis.

(2) Even if it is not a value-laden task, there is still another problem. One characteristic of the normal distribution is that we can use the standard deviation (SD) to show how much

¹²³ Ibid., P. 478.

¹²⁴ Ibid., p. 480.

population we consider normal. For instance, 1 SD means that 68% of the population is in the normal range, 2 SDs 95%, and 3 SDs 99.7%. See figure 2. If so, this kind of decision-making is not a value-free process. We still need to make value judgments to decide how many SDs we want to use to decide what counts statistically as pathology, normality, and positive health. For instance, some undeveloped countries may use 1 SD while other developed countries, such as the US and Japan, may use 2 SDs or even 3 SDs.

(3) Another trait of the normal distribution is that we have to draw these two lines symmetrically to discern pathology, normality, and positive health. This is not very plausible for Boorse. For the relation among these three qualities may not have a symmetrical property for us to draw these two symmetrical lines. Therefore, Boorse's use of the normal distribution to defend his value-free thesis is problematic and questionable.

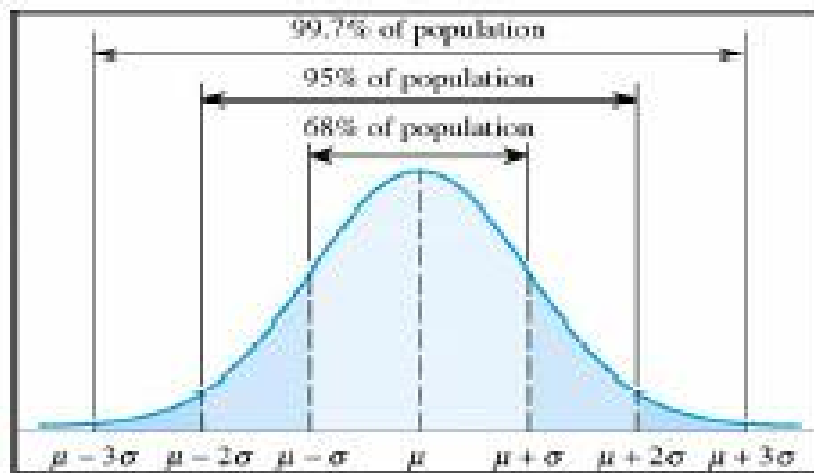


Figure 2

Second, the definition of disease is important for ethical purposes. If Boorse's definition of disease fails to be value-free and if what Boorse, Daniels, and Buchanan et al. want is a universal foundation for us to treat disease, a more appropriate question should be: Are we universally obliged to treat disease even if disease is not a natural kind? I believe so.

Lawrie Reznek says that it is due to the consequences of suffering or pain that disease interests us. If so and if compassion is universal, disease need not be a natural kind to be universal to require our ethical considerations. This argument should ease some worries about the ethical status of disease. That is, even if disease is not a natural kind, we are able to use compassion as the universal foundation in treating disease.¹²⁵

Third, the definition of disease is important for medical purposes. Ruse points out that we need a clear definition of disease to prevent people from misusing or abusing it. Some people think that we can get away with everything with a note from doctors. For instance, if a serious killer is proved to have some sort of mental disability or disease that is beyond his or her control, court will send him or her to a psychiatric facility for treatments rather than impose capital punishment on him or her. Also, it is often the reason why patients request social compensations or to be released from some duties or obligations. For instance, if we are obese, we may not need to buckle up our seat belt when driving. And if we have a disease, we might be released from military duty. In short, once a disease is identified or recognized, many obligations are dissolved, and a few might be created, for instance, an obligation to treat that disease. Hence, many financial, medical, and ethical issues are at stake depending on whether we have a clear definition of disease or not. Therefore, there is a need for us to identify or recognize in a coherent way what counts as disease. In addition, this is one of the reasons why the moral distinction between genetic therapy and enhancement is arbitrary, as Buchanan et al. suggest.¹²⁶ The problem of morally arbitrary distinction is a very interesting and important issue that I will discuss in Chapter 3.

I mention Boorse's theory of disease because since Buchanan et al. leave their defense

¹²⁵ The Buddhist and my approach are mainly based on this claim. See Chapter 4 and 5.

¹²⁶ See p. 119.

of what counts as disease to Daniels, and Daniels leaves it to Boorse, it is necessary and important to know Boorse's theory. From the criticisms and problems of Boorse's theory of disease, we are also able to see that there is no necessary connection between disease and fair equal opportunity. For instance, James G. Lennox points out, "The problems with this [reductionist or naturalist] approach are well known. At base, they come down to this: what is statistically normal for a class may, in fact, be unhealthy; and conversely, what is statistically abnormal (no tooth decay) may be healthy."¹²⁷ What Lennox says is this: some abnormalities, e.g., no tooth decay, may be healthy and thus desirable. If Lennox is right, it implies that "healthy" disease has no necessary connection with fair equal opportunity. For if disease is "healthy," it is difficult to see why it will affect one's fair equal opportunity.

After reading Boorse's theory, I find two possible reasons why he defends the wrong view that disease is a natural kind. First, there is a wrong underlying assumption that we can have all knowledge whenever we encounter scientific unknowns. Second, Boorse is confused about the difference between scientific objects and scientific methods.

First, according to Roberto Mordacci, Boorse assumes that we know every goal or design of each organism and all we need to do is discover it rather than create it.¹²⁸ In other words, if we knew every goal or design of each organism, there would be no need to guess or assume anything. Then, disease would be value-free since we would only discover it rather than create it. But this is not how science proceeds. For sometimes scientists have to use imagination to create their hypotheses or theories rather than just discover them, for instance, the Big Bang theory and the String theory—theory of everything. We are fortunate when scientists' hypotheses or theories are true, for instance, Einstein's theory of

¹²⁷ Lennox 1995, p. 500.

¹²⁸ See Roberto Mordacci 1995, p. 479.

relativity. Then, we can say that we discover the truth. By the same token, when we study biology or medicine, we have to make some guesses, judgments, assumptions, or hypotheses to accommodate what we find. David Weatherall points this out and writes, “Until recently, inherited disease could be studied only by tracing different defects through families and attempting to define their biochemical basis and hence *making a guess* at the function of the particular gene involved.”¹²⁹ This same objection can be made against anyone who uses goal or design as the basis of his or her argument. For example, consider James Lennox’s assumption that the ultimate goal of a species is life. How can Lennox be sure that his assumption is right? Sade argues differently above.

In addition, let us consider this question: Is biology or medicine a natural kind? I believe not. W. French Anderson says, “Medicine is a very inexact science.”¹³⁰ In the spectrum of scientific objectivity, biology or medicine is at the middle. At one end with a high degree of objectivity are physics, chemistry, and math, and at the other end are social sciences. Virtually all scientists agree with this spectrum. For example, is Darwinian theory of evolution value-free? Boorse thinks that it is and tries to fit his theory into it. There are some recent debates about whether evolution is a fact or a theory. There are two concerns with regard to Boorse’s attempt. (1) Even if the theory of evolution is a fact, it is still questionable whether it is value-free. (2) What if it is only a theory? Then, Boorse will be wrong. Let us entertain an interesting scenario. Suppose that the theory of evolution is a fact but is not value-free. Since Boorse tries to fit his theory into evolution, how would Boorse respond to this scenario? He would say: if so, then evolution is a bad theory. For Boorse will insist that disease is value-free. If the theory of evolution is not value-free, then

¹²⁹ Weatherall 1994, p. 971.

¹³⁰ Anderson 1985, p. 287.

evolution is a bad theory. The reason why I assume that he would say so is that he says the same thing about biology and medicine. Boorse insists on the truth of the BST (biostatistical theory). If anything, including medicine and biology, is contradictory to the BST, it means that we use bad medicine or biology. Boorse writes,

Beyond disputes over the analysis of function, several authors charge the BST [biostatistical theory] with using obsolete or oversimplified biology...Insofar as the BST fits the medical idea of disease, the charge, if true, would simply prove that medicine is using bad biology. To have shown that fact clearly would be a virtue of the BST.¹³¹

This is an unfair argument. For the biological and medical communities may not claim that their theory of disease is independent of human judgments or value-free. It is Boorse who argues for it. The burden is on Boorse.

Second, if normality is biostatistical, it only shows that we use scientific method (e.g., the normal distribution) to study species normality. It doesn't mean that species normality itself is objective and value-free. It is the scientific method that is independent of human judgments. Mordacci suggests similarly, "But the usefulness of statistics does not necessarily imply a descriptivist [naturalist] view, since health and illness are names of phenomena which are not merely *seen* but also (and primarily) *evaluated* by patients and physicians (Scadding, 1988)."¹³² The same thing can be said about the study of normal functioning in biology. Hence, Boorse may be confused about the difference between scientific methods and scientific objects.

VI. The proposal of a new definition of disease

Since there are so many problems with Boorse's definition of disease, I wonder if it is a good idea to develop more arguments based on his theory, as Daniels and Buchanan et al.

¹³¹ Ibid., p. 28.

¹³² Ibid., p. 479.

do. For Buchanan et al.'s argument to work, their definition of disease should be like this: A disease is (1) an adverse departure from normal species functioning—Boorse's definition, and in a sequential step (2) some (potential) physical or mental harms or bad consequences come with that abnormality.¹³³

There are several reasons why this definition is better. First, this definition surely provides a necessary connection between disease and fair equal opportunity. For we cannot call X a disease unless it has (1) abnormality and (2) some (potential) physical or mental harms or bad consequences resulting from that abnormality. It is the second condition that will impact on one's fair equal opportunity. And this is exactly what Buchanan et al. have in mind when they use Boorse's definition of disease.¹³⁴

If this is what Buchanan et al. have in mind, they should have examined more carefully Boorse's definition of disease to see if Boorse's definition can support their argument. Unfortunately, Boorse's definition of disease cannot provide what they want. Since Boorse's definition has been criticized by so many philosophers, I don't know why Buchanan et al. just ignore those criticisms. So for the sake of Buchanan et al.'s argument, they should consider this new definition even though it might not fit too well with a more proper and contemporary definition of disease, which I will discuss later. Again, they cannot assume that there is a necessary connection between Boorse's definition of disease and fair equal opportunity. Furthermore, they also say that those effects of disease and impairment only "often" cause pain and suffering. This means that they know that not all

¹³³ Lawrie Reznek offers a very similar definition: "A has a disease P if and only if P is an abnormal bodily/mental process that harms standard members of A's species in standard circumstances (1987, p. 162)." This definition is logically broader and semantically stricter than mine. An important nuance is that mine is a two-step definition and considers abnormality first but she seems to focus more on harm than on abnormality.

¹³⁴ Ibid., p. 122.

diseases will cause pain and suffering, and thus disease may not necessarily affect one's fair equal opportunity. So there is no necessary connection between disease and fair equal opportunity.

Second, this definition is able to explain all the counterexamples above. For example, consider the counterexample of genius. Based on this new definition, we cannot say that a genius is diseased since no (potential) physical or mental harms or bad consequences come with the abnormality of genius. A more challenging case for this new definition is infertility. Is infertility a disease? This is an example that Reznek uses against Boorse's theory. According to Boorse's theory, it is a disease. But for some people, it is desirable or preferable, if they don't want children. If so, it is improper to call it a disease for those who don't want children. How about using the new definition? It can go either way, depending on whether some (potential) mental harms or bad consequences come with infertility. For instance, since there are no mental or physical harms or bad consequences resulting from infertility for people who don't want children, it is not a disease for them. Besides, let us consider sickle cell disease and Huntington's disease. Even though both diseases may not currently have serious impacts on people, they have potential bad or severe consequences. Hence, this new definition of disease is also able to cover these two cases, and thus is better than Boorse's.

Third, it could also resolve the debates about whether disease is value-free or value-laden. Basically, it is very similar to Mordacci's "biological normativeness." See the fifth point below for what biological normativeness means.

Fourth, it can deal with one of the legitimate concerns that George Khushf raises.¹³⁵ Khushf criticizes the normativist definition of disease as value-laden and baseless (p. 464).

¹³⁵ Mordacci also raises the same concern in p. 476.

Since this new definition has the biostatistical normality as its first condition and as its foundation, it should be able to avoid this problem. What Khushf criticizes is value-relativity normativeness rather than biological normativeness, which both will be discussed next.

Fifth, this definition fits into what Mordacci calls biological normativeness, which is different from value-relativity normativeness. According to Mordacci, biological normativeness means that some forms or values in medicine are practiced and used everywhere and thus they are objective or universal, for instance, the concepts of malady and cancer (p. 492). When we discuss the concept of health or disease, it is inevitable that we have to refer to both its features—value-free normality and value-laden normativeness. In contrast, the main idea of value-relativity normativeness is to define health unspecifically in terms of happiness, welfare, and well-being, etc. For example, consider the definition of health used by the World Health Organization in 1946: “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” Another example is Nordenfelt’s account, “Health is a person’s ability, in standard circumstance, to reach his vital goal.” Mordacci points out one common problem with this approach, “whose evaluation is to count?”¹³⁶ For instance, should the judgment be the individual’s or an external observer’s?

In addition to this common problem, it is very difficult to identify and clarify health in terms of happiness and welfare. By contrast, we are able to “identify” disease somehow. For example, it is easier to tell whether a person is diseased than to tell whether he or she is healthy. Also, Lennox says that we could “identify” or “classify” disease elaborately but

¹³⁶ Ibid., p.481.

we could not do the same thing for health.¹³⁷ One reason could be that health is more “original” than disease and illness.¹³⁸ By “being more original,” Mordacci means “the fact that health is a necessary condition for the experience of illness.” Since being more original is being more abstract, health is more vague and difficult to identify and clarify.

Although this new definition has strong points, there are some concerns. First, it might still be too vague about what counts as mental harms since these are subjective judgments. However, in general, what counts as physical harms or bad consequences should not be too difficult to judge. For this definition is not a value-relativity view as I discuss above, and we must consider biological abnormality first and then go from that abnormality to make a further evaluation of those physical harms or bad consequences. That is, we have some common grounds first so that people can evaluate objectively. Therefore, it is plausible to resolve disagreements on this vague issue.

A second concern: Is this new definition necessary and sufficient to resolve all problems of defining disease?¹³⁹ I wouldn’t make such a claim but it at least provides the necessary connection between disease and fair equal opportunity for Buchanan et al.’s argument. Despite this, I would like to mention a not very good argument against Boorse. Frederik Kaufman argues that abnormality cannot be a necessary condition for disease. He instead proposes that harm be a necessary condition for disease.¹⁴⁰ If he were right, this new definition (and Boorse’s) would be undermined. For both do assume that abnormality

¹³⁷ Ibid., p. 505.

¹³⁸ See Mordacci p. 478 and Lennox p. 504.

¹³⁹ I assume that Lawrie Reznek would say that it is not sufficient since she says, “I have argued above that we cannot provide sufficient conditions for disease (1987, p. 162).” Since she proposes a very similar definition to mine, and she says that hers is not sufficient, then mine won’t be sufficient either.

¹⁴⁰ James Humber & Robert Almeder, eds., 1997, pp. 271-286.

is a necessary condition for disease. Kaufman argues that if conceptually normal function can be disease, then abnormal function cannot be a necessary condition for disease. Since there are some examples of conceptually normal function, abnormality cannot be a necessity for disease (p. 274). Kaufman argues that there are conceptually countless examples of normal functions that are diseases. However, he gives only two vague examples: the fever and nausea that come with old age, and the “self-destructing” mechanism built into species design. Kaufman proposes that if we don’t treat these “diseases,” they tend to cause death. If these “normal” functions are conceived as disease, then abnormality cannot be a necessary condition for disease.

I don’t think that Kaufman is right for four reasons. (1) It is very problematic to argue against Boorse’s thesis from a conceptual basis since abnormality is more than a conceptual construction. It rests on empirical facts. Even though abnormality or normality may not be a natural kind, it still has some objectivity and needs empirical investigations, not just conceptual constructions. (2) Kaufman’s two examples are too strange as being examples of disease. We don’t consider fever and nausea diseases but symptoms instead. Is self-destructing mechanism built into species design a normal functioning? I am afraid not. “Self-destructing” mechanism cannot be the primary biological or evolutionary norm in every species. If it were, every species would have died out already (or eventually). Therefore, it is wrong to think that “self-destructing” mechanism is a “normal” functioning built into species design. Even if it were true, Kaufman would have to explain about how and why it does not happen so often in nature and why we and so many other species still exist. (3) Not all harms are diseases. Suppose that someone uses a knife to cut and harm you. It is nonsense to call that harm disease. Therefore, harm might not be a necessary condition for disease. (4) Most philosophers accept abnormality as a necessary condition

for disease. The principal debate about disease is whether it is value-free or value-laden rather than whether abnormality is a necessary condition or not.

However, although the cardinal debate is not about whether abnormality is a necessity, there is an interesting claim. Rogeer Hoedemaekers and Henk Ten Have argue that genetic “abnormality need not necessarily lead to disease.”¹⁴¹ For whether genetic abnormality will develop into disease depends on internal and external environments, for instance, some late-onset hereditary diseases, e.g., Huntington’s disease. In Huntington’s disease, it takes quite some time for the abnormal gene to express itself clinically. If there are no other diseases, the individual with Huntington’s disease usually can live a normal life until the abnormal gene expresses itself. Therefore, abnormality does not necessarily lead to disease.

In addition, this claim is interesting because we might think that abnormality need not be a necessary condition for disease, as Kaufman argues. This is a mistake. Although this claim is true, it does not mean that abnormality is not a necessary condition for disease. For without the abnormal gene, there won’t be Huntington’s disease. The abnormal gene has to be there and just needs time to develop into Huntington’s disease. Therefore, it is a mistake to think that genetic abnormality that will cause disease is not a necessary condition for disease.

Since Buchanan et al. focus on genetic intervention, Rogeer Hoedemaekers and Henk Ten Have raise another important and interesting topic, i.e., the genetic whole-part issue. They write,

Third, a temptation is to see an abnormality in isolation, separated from the context, the organism of which it forms a part. A term like disease locus is suggestive of this tendency

¹⁴¹ Ibid., p. 541.

to locate a disease in a specific abnormality. However, a functional or structural abnormality forms part of a larger organic system and may be compensated for by other mechanisms or processes in the organism or body, so that the total organism may function quiet normally.¹⁴²

Based on the citation, there are two issues related to Buchanan et al.'s approach. First, it also shows that genetic abnormality need not necessarily cause disease, e.g., Huntington's disease. If so, genetic abnormality may not necessarily affect one's fair equal opportunity. So there may not be a necessary connection between genetic abnormality and fair equal opportunity. Second, if we follow Buchanan et al.'s suggestion to do genetic intervention, we may delete genes just for genetic abnormality or disease without considering the whole picture. This may be dangerous for present and future generations. For we could delete the genes that may benefit them but not us (e.g., sickle cell gene), or the genes where we may not know any benefits yet. Suppose that we don't know that sickle cell gene has the selective advantage to protect us from malaria. Then, we may easily erase it forever because we don't think that it has any potential benefits.¹⁴³ David Suzuki & Peter Knudtson point out this worry too (p. 202). Edward Berger and Bernard Gert also mention Rifkin's concern: "A second major concern is that 'eliminating so-called 'bad genes' will lead to a dangerous narrowing of diversity in the gene pool' and attempts to 'cleanse the germline over tens or hundreds of years will lose traits that we later realize are important' (Rifkin, 1983)."¹⁴⁴

¹⁴² Hoedemaekers and Have 1999, p. 540.

¹⁴³ David Weatherall may not agree with this. He says, "Clearly, it needs watching, but there is no evidence that a programme of avoidance of serious genetic disease will have a major effect on the size of the pool of our less attractive genes (p. 980)." There are two concerns with this response. First, Weatherall may be only thinking about those genes (around 4000 at that time) that cause diseases. Second, even so, it is still hard to say that those genes have no potential benefits. How can we be sure? It needs more empirical investigations.

¹⁴⁴ Edward Berger and Bernard Gert 1991, p. 671.

However, Berger and Gert think that we worry too much. If we think that it is too “risky” to eliminate these “bad” gene(s) such as sickle cell gene, this evolutionary argument is false for two reasons.¹⁴⁵ First, sickle cell gene can provide a benefit only in heterozygous condition, not in homozygous one and it is extremely rare. Second, more importantly, in gene therapy, it does not cause a loss of any allele variation. On the contrary, the opposite occurs. For instance, consider how germ-line transformation is done. They suggest that based on the “current” technology of gene therapy, we only add genes rather than delete them. They also suggest that even if we need to erase genes to cure certain genetic disorders or diseases and even if the technology is there, it is still very unlikely that we would delete genes from the human gene pool. For it would be too expensive for too many people to participate. For example, the cost of *in vitro* fertilization (IVF) is so high that it deters people from wanting or using it.

Berger and Gert’s objections fail for three reasons. First, I am not arguing whether it is too “risky” or not. I only raise a concern. Second, how can they be sure that it is extremely uncommon in nature? Medical scientists discover that more and more diseases are the results of genetic disorders or alleles. So this objection may not hold. Third, if it is true that we won’t delete any gene(s), no one will disagree with them. But is it true? I raise this concern because I am afraid that we will erase for good some “bad” genes that might have potential unknown benefits. They also agree that we may have to delete gene(s) to cure some genetic disorders or alleles. Their solution for this worry is that it will cost so much that people don’t want to do it or cannot afford to do it. This solution definitely fails. For it is quite likely that in the future the production will become economically feasible and new technologies will become cheaper and cheaper. Therefore, cost should not be a main

¹⁴⁵ Ibid., pp. 676-677.

concern eventually. Consider their IVF example. Isn't IVF quite common now in the US or even in some developing countries? In addition, Berger and Gert neglect a very important fact; i.e., we are talking about disease that may threaten human life. People in the developed countries care about their health (as well as beauty) more than money. If people are willing to pay for breast implants or other expensive cosmetic surgeries or issues (e.g., the injection of growth hormone to stay young), I believe that people will be willing to pay for health-related treatments even though these treatments may be very expensive. Therefore, their objections fail.

In addition to these advantages and shortfalls of this new definition, I would like to discuss briefly a contemporary definition of disease. Some philosophers distinguish disease from illness and sickness, for instance, George Agich, Bjorn Hofmann, and other philosophers.¹⁴⁶ How well does this new definition fit into Agich's and Hofmann's definition?

Generally speaking, Agich and Hofmann try to offer a more pragmatic perspective on disease, illness, and sickness, which focuses more on practical functions than on theoretical purposes. In a nutshell, *disease* is mainly related to physical problems and what doctors conceive, *illness* is a disease or what a person feels or experiences, and *sickness* is an illness or depends on social contexts.¹⁴⁷ These distinctions are not clear-cut, as Hofmann points out (p. 666).

This new definition is compatible with these distinctions. It could be called disease,

¹⁴⁶ George Agich in *What is Disease?* James Humber & Robert Almeder, eds., 1997, pp. 224-237. Hofmann 2002. Randolph Nesse also offers a similar Darwinian triad definition of disease. He says, "Still the example remains useful to remind us that whether a condition is considered a disease or not depends on whether the benefits are considered from the point of view of the gene, the individual, or the social group (p.43).

¹⁴⁷ Agich 1987, pp. 226-227, and Hofmann 2002, p. 657.

illness, or sickness depending on what the abnormality and (potential) physical or mental harms or bad consequences are. It may not be specific enough to fit into these distinctions, but I see no contradiction. How about Buchanan et al.'s definition? If they restrict theirs only to Agich's or Hofmann's definition of disease, their argument may be fine since in that sense, disease is mainly physical problems that will impact one's fair equal opportunity. However, unfortunately, this is not what they propose and argue. They also include illness or sickness, e.g., their examples of the Unhappy Husband and the Shy Bipolar, into their argument. Therefore, they cannot escape this underlying problem.

Finally, in this chapter, I analyze this Rawlsian underlying problem at length through its assumptions, some counterexamples, other philosophers' criticisms, and the problem of defining disease. At the end, I conclude that the Rawlsian approach cannot eschew this underlying problem. I suggest what Buchanan et al.'s definition of disease should look like to avoid this underlying problem. This is an interesting problem. However, this underlying problem is not the most important issue in my dissertation. I will discuss the most important issue of my dissertation next, which is the problem of the supposedly morally arbitrary distinction between genetic therapy and enhancement.

Chapter 3: The problem of the morally arbitrary distinction between genetic therapy and enhancement

In Chapter 2, I discussed a relatively important problem in Buchanan and his co-authors' arguments. One of its issues—how to define disease—is relevant here. In this chapter, I would like to examine the most important issue of my dissertation: the morally arbitrary distinction between genetic therapy and enhancement.¹⁴⁸ This issue is my principal concern throughout my dissertation.

In this chapter, I would like to argue that Buchanan et al.'s argument against a moral distinction between genetic therapy and enhancement is wrong. That is, we are able to draw a moral distinction between genetic therapy and enhancement after identifying six reasons why the “morally arbitrary” problem is so perplexing. First, let us see why this issue is genuinely interesting and important. Second, let us examine Buchanan et al.'s argument. Third, let us discuss other philosophers' views. Fourth, let us raise some questions and concerns. Finally, we identify six reasons why this problem is so tangled, introduce the Buddhist approach, and conclude this chapter.

I. Why this issue is interesting and important

Before proceeding, I would like to explore why this issue is genuinely interesting and important. David B. Resnik points out, “The therapy-enhancement distinction occupies a central place in contemporary discussions of human genetics and has been the subject of

¹⁴⁸ Buchanan et al.'s position seems to be: there is a moral distinction but it is only arbitrary and useful. However, sometimes they say there is no moral distinction; for instance, they offer a reason against this distinction, which implies there should not be such a distinction. Also, see their discussion in p. 119. Overall, the first interpretation is most likely to be their position.

much debate.”¹⁴⁹ In my opinion, there are three reasons for this: (1) medical purposes, (2) ethical purposes, and (3) social or political purposes.¹⁵⁰ These are very similar to categories arising in defining disease in Chapter 2 except from different perspectives. (1) For medical purposes: as Buchanan and his co-authors point out that even though the moral distinction is arbitrary, it is still useful to avoid moral hazard, i.e., to maintain a fair game so that people won’t abuse the terms “therapy” and “enhancement” (and thus abuse medical resources and services). Theirs is a “better-than-nothing” argument, which means that we are better off to have the distinction than not to have it. W. French Anderson proposes a similar reason.¹⁵¹ He says, “Legitimate concerns about the potential for misuse of gene transfer technology justify drawing a moral line that includes corrective germline therapy but excludes enhancement interventions in both somatic and germline contexts.”¹⁵² Sheldon Krimsky also writes, “Human genetic modification has begun without a clear consensus on where the moral boundary lines should be placed to insure that technology of human genetic engineering is not abused.”¹⁵³ Therefore, we do need a distinction to avoid abusing medical resources and services. (2) For ethical purposes: if there is a moral distinction, then the medical community will have a guideline to know what they should do.

¹⁴⁹ Resnik 2000, p. 365.

¹⁵⁰ Jackie Leach Scully suggests another motivation but does not give too much detail about it, which is not quite right. She says, “It is indisputable that technical and intentional distinctions can be made between the interventions, but it is not obvious why these should be the ones that determine the moral distinction too. I suggest that one motivation for this is the fatal attraction of (over) simplicity. Why draw two lines when you can get away with one? (p. 196).” Scully is wrong. For there is only one moral line we are trying to draw. The other line is a technical classification on which we might draw the moral line. We are not trying to draw two moral lines. The main concern is about morality rather than simplicity.

¹⁵¹ However, unlike Buchanan et al., Anderson argues that we should and can draw a line. See III below.

¹⁵² Anderson 1989, p. 681.

¹⁵³ Krimsky 1990, p. 171.

In general, if it is genetic therapy, then it is all right to proceed. If it is genetic enhancement, we may reconsider whether we ought to do it. For instance, Maurice Wachter suggests that to prevent the slippery slope from genetic therapy to genetic enhancement, the medical community needs to have a clear distinction between them, and this is what French Anderson proposes too.¹⁵⁴ Basically, the main issue of the moral distinction still remains an ethical one. LeRoy Walter points out that the technical classification of genetic therapy and enhancement is much clearer than the moral one. It is the ethical distinction that is vague. Krinsky agrees with Walter.¹⁵⁵ But I will argue that the technical classification may not be as clear as they think. There are lots of debates about whether there is a morally clear distinction between genetic therapy and enhancement. (3) For social or political purposes: this is Buchanan et al.'s main focus since they argue from the social or political perspective. Since genetic therapy and enhancement may revolutionize the nature of human beings, therapy and enhancement will have very profound social and biological impacts on people at present and in the future. What will count as a human being may be redefined. French Anderson points this out: "At the core of society's concern about beginning the human application of genetic engineering may be our sense that we are developing a capability to change who and what we are."¹⁵⁶ And what social justice should say about this new technology is also important to stabilize human society. Therefore, what medical insurance should cover justifiably, and what and how government should regulate this issue are all important to maintain and advance to a flourish and prosperous society. Eric Juengst suggests a similar idea. He says, "For policymakers faced with the prospect of using

¹⁵⁴ Also see Juan Manuel Torres 1997, p. 43.

¹⁵⁵ Ibid., p. 171.

¹⁵⁶ Ibid., p. 682.

enhancement as a regulatory concept, it will be important to have a clear map of these uses and interpretations, and that is what this essay attempts to provide.”¹⁵⁷

In addition, Buchanan et al. emphasize the difficulty and importance of this issue. They say, “One area of lingering tension concerns the usefulness of the treatment/enhancement distinction and the broader issue about the scope of the demands of equal opportunity.”¹⁵⁸ There are many other philosophers also pointing out the difficulty and importance of the moral distinction, for instance, Sheldon Krinsky, Bernard Hoose, Nicholas Agar, Jackie Leach Scully, and Edward Berger and Bernard Gert.¹⁵⁹

Although David Resnik thinks that the moral distinction is an important and interesting issue, he proposes a very different view regarding how we should approach this problem. Since he doesn’t think that we can draw a morally solid line between genetic therapy and enhancement, we should stop using this line and instead ask whether the genetic intervention has good or bad consequences; for instance, whether it is just or unjust, whether it has significant risks or benefits, and whether it violates or promotes human dignity.¹⁶⁰ Resnik also suggests that the moral line may be significant and useful for one purpose only, that is, to address our fears about bias and injustice, and to address our hopes

¹⁵⁷ Eric Parens, ed., 1998, p. 29.

¹⁵⁸ Ibid., p. 149.

¹⁵⁹ Krinsky (1990: p. 171), Hoose (1990, pp. 305-306), Agar (1995: p. 1), Scully (2001: p. 189), Berger and Gert (1991: p. 670).

¹⁶⁰ Resnik 2000, p. 374. Also, according to William Gardner, John Fletcher offers a similar suggestion. Gardner says, “Fletcher argued that because we have this leverage, we should not ban gene therapies out of fear of an inevitable progression to unrestricted human genetic engineering. Instead, we should make choices about specific gene therapies based on a rational evaluation of each therapy’s costs, benefits, and ethical problems (p. 67).”

to improve human health.¹⁶¹

I cannot agree with Resnik for several reasons. First, if he were right, it would not make much sense to focus on this issue at all. Second, even though there might not be a sharp boundary between genetic therapy and enhancement, the inquiry about the moral line is more fundamental than these questions he proposes. For we could not have any truly meaningful answers for these questions unless we have some ideas about the moral line first even if it might not be clear and clean. For instance, how could we tell whether genetic intervention is just or unjust before knowing that it is therapy or enhancement? Also, how could we evaluate the risks or benefits before knowing that genetic intervention is therapy or enhancement? Besides, Resnik's argument will pose a great challenge for the Buddhist and my approach, when he argues that some forms of genetic therapy are immoral and thus unacceptable. Buchanan and his co-authors also argue similarly (p. 153), and Edward Berger and Bernard Gert raise the same question but do not argue for it (p. 675). I will explain this issue later.

II. Buchanan et al.'s argument

Buchanan and his co-authors argue against the moral problem in a sporadic way. Let me try to summarize and organize their argument. Table 6 shows their views.

¹⁶¹ Ibid, p. 374. Also see below for what the slippery slope argument is.

Table 6	Genetic Therapy	Genetic Enhancement
Obligatory/Nonobligatory	Not necessarily obligatory	Not necessarily obligatory
Permissible/Impermissible	Not necessarily permissible	Not necessarily permissible
Is there a moral distinction?	Buchanan et al.: the distinction is arbitrary (p. 115, p. 116, and p. 118). Even if there is such a distinction, it is only useful and we shouldn't expect too much of it (p. 119 and 152).	

Buchanan et al. argue that the moral distinction between genetic therapy and enhancement is arbitrary.¹⁶² They write,

These cases make the distinction seem arbitrary for several reasons...Before responding to these questions, we would like to deepen the sense that there may be something morally arbitrary about the use to which the treatment/enhancement distinction is put, and perhaps even about the distinction itself (pp. 115-116).

The hard cases thus pose the question: What justifies us treating the normal but 'bad' or

¹⁶² There may be a concern that Buchanan et al. may not argue that the distinction is arbitrary. There are three reasons to relieve this concern. First, they do say that the distinction is arbitrary in p. 115, p. 116, and p. 118 when they start using their first hard case, Johnny and Billy. In addition, they set up their argument by assuming that there is a clear distinction, and then pointing out what problems it may have, including those two objections in p. 118. If Buchanan et al. do not say whose objections they are, it is reasonable to assume they have the same objections. Besides, they do use Johnny and Billy again to fit into the second objection. So it is hard to say that those objections are not Buchanan et al.'s. Second, they have to argue the distinction is arbitrary to be consistent with Daniels's theory. One of Daniels's problems is that he holds the moral distinction is arbitrary, which I mention some in Chapter 2 and will discuss more in this chapter. Since Buchanan et al. develop their argument from Daniels's, this will be their problem too. To be consistent, they have to argue the distinction is arbitrary. Third, there is no contradiction to say Buchanan et al.'s position is that the distinction is arbitrary while saying it is useful and we shouldn't expect too much of it. Contrarily, the arbitrariness problem is one of the reasons why Buchanan et al. argue that we should not expect too much of it.

disadvantageous genes differently from genes that lead to growth hormone deficiency or to receptor insensitivity to growth hormone (or to learning disabilities)?... we might think it is quite arbitrary to maintain the treatment/enhancement distinction (p. 118).

There are three main reasons why Buchanan et al. argue that the moral line seems arbitrary. First, they suggest that there may not be any good bases for this distinction (p. 118). Second, it doesn't coincide with insurances' obligatory/nonobligatory and permissible/impermissible boundaries for two reasons: the limitation of resources and it makes an unqualified claim that there is a distinction. Third, this distinction cannot explain their hard cases, such as the examples of Johnny and Billy, the Shy Bipolar and Shy Normal, and Unhappy Husband.

First, they claim that there may not be any good moral bases for the moral distinction, and if there is, it will cause a circular problem. One possible reason for the arbitrariness problem is how we define disease. We seem to define disease by our norms and values, not by biological statistical abnormality, to include or exclude someone for treatment or enhancement.¹⁶³ Since the moral distinction is arbitrary, it is only useful to prevent people from abusing the terms "therapy" and "enhancement" and thus we shouldn't expect too much of it. Buchanan et al. write,

We have argued that the treatment/enhancement distinction is a useful one provided that we do not expect too much of it. Specifically, we should not expect that it coincides exactly with boundary between the health care services we are obliged to provide people given all our obligations, and those that are nonobligatory. Still, it is a reasonable distinction for use within our primary rationale for including services in a health care benefit package. It remains reasonable even in light of expended ability we may develop to enhance some otherwise normal traits. Dropping it in favor of more expansive views of our medical obligations has distinct disadvantage from a public policy perspective and no compelling arguments for it from a moral perspective.¹⁶⁴

¹⁶³ See their p. 119 citation in Chapter 2 and my discussion below.

¹⁶⁴ Ibid., p. 152. Also see p. 119.

Buchanan and his associates do not give more details about how it will cause a problem of circularity (p. 118). I am not quite sure what the circularity problem is. There may be two interpretations. (1) We beg the question, which, of course, is a circularity problem. But this is not what they have in mind. Therefore, the second one should be what they mean. (2) The moral bases we use will cause a circularity problem. But how? All they say is that we use an approach of value-relativity and normativeness as our basis.¹⁶⁵ They do not explain in detail how it will cause a circularity problem. They say that we use our norms and values as bases to draw the moral line, which is arbitrary. Buchanan and his associates write,

This objection echoes a worry we expressed in commenting on the positive/negative eugenics distinction: Judgments eugenicists make about “defects” reflected value judgments about what counted as normal or superior traits. Aimed at the treatment/enhancement distinction more generally, the objection is that we are being offered an apparently “natural” baseline between disease (and impairment) and the biologically normal, when there really is none. The effect is that, disingenuously or not, we disguise hidden moral judgments that actually form the basis of the moral boundary that we purport to derive.¹⁶⁶

For instance, consider their example of Johnny and Billy. Buchanan et al. argue that it is our prejudice of heightism that excludes Billy from treatment. If we are willing to reconstruct “disease,” then we can also include Billy’s condition for “treatment” rather than for “enhancement.”¹⁶⁷ If prejudices were the bases we use, then Buchanan et al. would be right. However, I don’t think that we really use prejudices as our bases to solve the moral problem. If we did, we could resolve the moral problem easily. For everyone would agree with Buchanan et al. and then there should not be so many debates about the moral distinction. Therefore, what basis we (should) use is still very much in question. I offer

¹⁶⁵ See Chapter 2.

¹⁶⁶ Ibid., p. 119. Also see p. 119 and pp. 118-119.

¹⁶⁷ Ibid., pp. 118-119.

some discussion below. Besides, a more interesting question for Buchanan and his co-authors is this: Can their basis—justice as fair equal opportunity—resolve the morally arbitrary problem? I will argue later that it cannot.

Second, the moral distinction does not coincide with the medical and non-medical insurance context (p. 108 and p. 120). That is, it does not match the boundaries between obligatory and nonobligatory services, and between permissible and impermissible services.¹⁶⁸ For instance, consider their example of unwanted pregnancy.¹⁶⁹ David Resnik also proposes similarly that genetic therapy is not necessarily permissible and enhancement is not necessarily impermissible. Resnik writes, “Is genetic enhancement inherently unethical? Is genetic therapy inherently ethical? I will argue that the distinction does not mark a firm boundary between moral and immoral genetic interventions, and that genetic enhancement is not inherently immoral.”¹⁷⁰ Resnik offers five ways to see how significant the moral distinction is, which will be discussed later. Edward Berger and Bernard Gert raise the same concern but they do not argue for it.¹⁷¹ I can agree only in part with Buchanan et al. and David Resnik. I agree that not all forms of enhancement are impermissible, but I will argue against their claim that not all treatments are permissible.

According to Buchanan et al., there are two reasons why the moral distinction does not map onto those boundaries: (1) due to the limitation of resources and (2) it makes such an unqualified claim that it could provide a moral distinction between the obligatory and the nonobligatory within the insurance context.

Before we proceed to discuss these two reasons, it is necessary to know what the

¹⁶⁸ See p. 153.

¹⁶⁹ See p. 108 and p. 120.

¹⁷⁰ Resnik 2000, p. 365.

¹⁷¹ Ibid., p. 675.

logical relations are between obligatory (or nonobligatory) and permissible (or impermissible). Let me rephrase their statements.¹⁷² An obligatory service or action has to be permissible. If not, it is a moral contradiction. By contraposition, an impermissible service or action is nonobligatory. A nonobligatory service or action is either permissible or impermissible. A permissible service or action is either obligatory or nonobligatory. And a permissible action does not have much stronger moral claim than an obligatory one. These relations are intuitively true. However, a more interesting question is this: Are all medical or insurance covered services obligatory or only permissible? Buchanan et al. assume that they are all obligatory and justified by some ethical principles or values. Otherwise, why are they covered? This assumption seems intuitively persuasive. For if they are not obligatory in the insurance context, it is hard to see why we are obliged or pushed to provide assistance. Buchanan et al. argue that the moral line cannot fit with the obligatory/nonobligatory boundaries of both medical and non-medical services. However, their argument is vague as to why it cannot. Buchanan and his associates simply imply that if the moral line doesn't fit with the non-medical context, then it won't fit with the medical context either. For instance, they use the example of unwanted pregnancy to demonstrate why the moral line doesn't map onto the obligatory/nonobligatory boundaries of non-medical services. And then they conclude that the moral line won't fit with the obligatory/nonobligatory boundaries of medical and non-medical services (p. 120). I will argue against this in (2) below.

(1) Let us turn to the first reason why the moral distinction won't map onto those obligatory/nonobligatory boundaries. Buchanan et al. say that it is because of resource limitations. Justice only requires us to treat those who need therapy most (p. 120). This

¹⁷² See p. 108.

argument is wrong for three reasons. First, Nils Holtug argues that we still have the moral obligation to treat those non-urgent or non-important needs. They are just not on the top of our priority list for treatments because of resource limitations.¹⁷³ Therefore, it is wrong to say that we are only obliged to provide services to those most important or urgent needs. Second, this argument is a utilitarian one, which usually lacks the consideration of justice and thus is not consistent with Buchanan et al.'s central idea—justice as fair equal opportunity. Third, a resource related “cannot” by itself is not clear and adequate to support their argument against the moral distinction. There are two other kinds of “can” or “cannot”: epistemological or moral, and technical one. I will discuss this in detail later. Therefore, Buchanan et al. are wrong to say, “Being a treatment is thus not a sufficient condition for our being obliged to provide a service to people [because of resource limitations].”¹⁷⁴ This objection is an important argument to support the Buddhist approach. For Buddhists will argue that all treatments are obligatory and thus permissible. In other words, being a treatment is a sufficient condition requiring us to provide medical services to people.

(2) Can the moral distinction provide a boundary between the obligatory and the nonobligatory in the insurance context? Buchanan et al. argue that since there is no such a boundary, it is false to claim that there is a moral distinction (p. 120). They offer the example of unwanted pregnancy (or nontherapeutic abortion), which is questionable. This argument is not right for three reasons. First, we don't know who makes such a claim. For instance, consider French Anderson's argument. All French Anderson tries to offer is that treatment is obligatory and enhancement (maybe without any therapeutic purposes) is

¹⁷³ Holtug 1993. See his argument below.

¹⁷⁴ Ibid., p. 120.

impermissible. Anderson's argument may be vague since his moral line could be applied to both medical and non-medical context. However, we don't see that Anderson makes such a claim relevant to the non-medical context. I would assume that most philosophers who argue that we can draw a moral line may tend to have the medical context in mind first rather than the non-medical context. For instance, Eric Juengst proposes that the moral line is for the medical context, but he doesn't say anything about whether it is also for the non-medical context.¹⁷⁵ If so, we should first see whether the moral line can fit into the medical domain and then to see whether it can be also applied to the insurance (or non-medical) context. This is a more logical and effective way to analyze the arbitrariness problem. Buchanan et al. argue the other way around and this leads to the third problem.

Second, if Buchanan et al. want to argue in this way, then they have to provide more details about the relation between medical and non-medical contexts. They cannot just offer some cross-line statements between a medical and non-medical context (p. 108), offer the example of unwanted pregnancy, and then imply that the moral line won't map onto the obligatory/nonobligatory boundaries for both contexts. This is too simple. Besides, even if we agree with their example of unwanted pregnancy, it still does not show how the moral line between therapy and enhancement is arbitrary. For non-disease such as an unwanted pregnancy has nothing to do with any form of genetic intervention. So they need to tell us more about how this example can support their argument against the moral line.

Third, Buchanan et al. imply that if the moral line does not map onto the boundaries of insurance (or a non-medical) context, then it won't fit onto the obligatory/nonobligatory boundaries of medical context either. There are two concerns. (1) As I mention in the discussion of the first reason, medical ethicists may not expect that the moral line can be

¹⁷⁵ See Erik Parens ed., 1998, p. 44.

fully applied to the non-medical context, e.g., insurance schemes. So we should not expect too much of it in the non-medical context. If this is true, Buchanan et al. expect too much of the moral line that we try to draw. The moral line can play only a number of limited roles in the non-medical context. One of the limited roles is its usefulness to prevent abuse, which is suggested by Buchanan et al. But are the non-medical services really our main concern about the moral distinction? Maybe not. For the moral line may be inappropriate to be used in the insurance context because insurance services may have different ethical considerations. For instance, insurance companies or services could be mainly concerned about cost-benefit concerns or medical effectiveness rather than moral obligation. We can notice this difference between an individual and insurance company's considerations from Buchanan et al.'s own statements (p. 108). The ethical considerations of the medical community may not be the same as those of insurance companies. Even though Buchanan et al. offer their argument from the perspectives of society and government, these two perspectives should be associated with the medical context rather than the insurance one. The domain of insurance ethics should belong to business ethics rather than medical ethics since the main purpose of insurance companies or services is to make profits, unlike the medical communities that are supposed to be non-profit oriented. Although there may not be a theoretically significant difference between medical and business ethics, each still belongs to a different domain and has different ethical standards. Therefore, Buchanan et al.'s argument is wrong. (2) Buchanan et al. give only the example of unwanted pregnancy (or non-therapeutic abortion) to support their argument. Buchanan et al. indicate that sometimes both physicians and the medical insurance need to treat or cover non-disease, e.g. the unwanted pregnancy, as well as disease or impairment (for the same moral reason?). The reason why we ought to treat and cover insurance for unwanted pregnancy is because

of normal functioning and of respecting the equality of women (p. 120). Therefore, they argue that the moral distinction between treatment and enhancement is arbitrary.

In my opinion, this example does not support their argument very well. It is questionable that our justification for treating or covering unwanted pregnancy is the equality of women rather than a disease or impairment. There are three concerns. (1) If an unwanted pregnancy is normal functioning (and thus Buchanan et al. are right that it is not a disease or impairment), then what justification do we use to treat it? Buchanan et al. say that it is because of the equality of women. But what kind of equality do they have in mind? As I mention in Chapter 1, their statement is incomplete. They indicate that it is women's equality of opportunity. Buchanan and his co-authors write,

If we are right that nontherapeutic abortion services should be included in standard benefit packages because of concerns about the equality of women, then treatment of disease and impairment does not capture the class of services society is obliged to provide once we consider all of our obligations. As we shall see in what follows, sometimes concerns about equal opportunity, whether construed more narrowly, as in this chapter, or more expansively, as in the brute luck view described in Chapter 3, may oblige us to provide some genetic interventions even when they are not treatment of disease.¹⁷⁶

But how can this example of unwanted pregnancy support their main argument? That is, what is the connection between normal functioning and fair equal opportunity? Buchanan et al. use only two bases, justice as fair equal opportunity and social productivity, to argue for genetic intervention. They say almost nothing about normal functioning related to fair equal opportunity except this unsupported and unclear example of unwanted pregnancy. In addition, as I argue strongly in Chapter 2, there may not be a necessary connection between abnormal functioning and fair equal opportunity. If so, it is more difficult to see the connection between normal functioning and fair equal opportunity. This example is vague

¹⁷⁶ Ibid., pp. 120-121.

and inadequate to support their central idea—justice as fair equal opportunity. For what do they mean by “respect the equality of women”? It is not easy to clarify what it means. Gale Baker suggests similarly, “Certainly, no feminist would deny that we all seek the absence of discrimination, the problem as it traditionally has been conceived lies in the attainment of a clear and concise consensus as to what equality entails, and the means by which to achieve it.”¹⁷⁷ Marjorie Weinzweig expands the concept of equality to four kinds of equality with regard to pregnancy leave and comparable worth. They are equality as “accommodation,” “incorporation,” “participation,” and “acceptance.” Since these are not my main focus, I will not go further. The point I try to make is that Buchanan et al.’s statement is vague or incomplete and is also inadequate to support their argument. For even if they mean the equal opportunity of women, it is inadequate to prove that their argument is right. They argue that even if an unwanted pregnancy is neither a disease nor an impairment, it will still have an impact on women’s fair equal opportunity, which is my second type of interpretation in Chapter 2.

There are two problems with this proposition. First, they need to explain why and how it will impact women’s fair equal opportunity. Gale Baker raises a similar concern, “Is the equality really the basis on which we think that pregnant women should not loss her job?”¹⁷⁸ It is hard to see the necessary connection between unwanted pregnancy and fair equal opportunity. For carrying a pregnancy will limit only certain job opportunities and only during the time of carrying pregnancy, e.g., heavy labor jobs during the period of pregnancy. Julien Murphy points this out: “Pregnancy might make a woman ineligible for

¹⁷⁷ Baker 1987, p. 63.

¹⁷⁸ Ibid., p. 64.

certain career opportunities, (e.g., athletics, dancing, modeling, acting).”¹⁷⁹ In general, being pregnant will not have a serious impact on jobs such as office assistants or managers. Even if it would, pregnant women could have pregnant leaves during their pregnancy. It is only a tentative impact. Therefore, what kind of impact on fair equal opportunity do Buchanan et al. have in mind? Unless they give more explanations, we don’t know. In addition, if Buchanan et al. say that an unwanted pregnancy is not a disease or impairment, how can it affect women’s fair equal opportunity? Since there may not be a necessary connection between disease or impairment and fair equal opportunity as I argue in Chapter 2, it is more difficult to see the necessary connection between unwanted pregnancy and fair equal opportunity. Second, what basis can we use? Since it doesn’t make sense to say that an unwanted pregnancy will impact women’s fair equal opportunity, justice as fair equal opportunity should not be the basis. Then what can we use to justify it? It cannot be justice as efficiency either since it has nothing to do with leveling women’s capabilities. It cannot be social productivity either. For how can social productivity be related to unwanted pregnancy? That is, does an abortion (either therapeutic or non-therapeutic) have anything to do with social productivity? It is hard to see the connection. Even if one may argue that there is, it is still difficult to see how abortion can be related to social productivity and thus to genetic intervention. There is nothing that Buchanan et al.’s justifications can offer. Therefore, they cannot conclude without further arguments or details that we are obliged to treat unwanted pregnancy because of fair equal opportunity. In addition, I have checked around 140 references and only five articles, Gale Baker (1987), Marjorie Weinzweig (1987), Julien Murphy (1989), Lise Vogel (1990), and Carson Strong and Garland Anderson (1994), discuss the concept of women’s equality with regard to pregnancy. Even

¹⁷⁹ Murphy 1989, p. 70. Also see Baker 1987, p. 63.

among these five, I don't see anything directly related to Buchanan et al.'s argument. So I really don't know what this example is supposed to do for Buchanan and his co-authors.

There is a common reason why we should provide health care for unwanted pregnancy and it has nothing to do with the equality of women at least *prima facie*. It is said that we should provide health care for unwanted pregnancy is because of respect for women's autonomy. For instance, Carson Strong and Garland Anderson point out three principles for considering abortion: the principle of autonomy, the principle of beneficence, and the principle of avoiding killing.¹⁸⁰ The principle of justice is not included and discussed.

According to Courtney Williams, there are three conditions that we should respect (in connection with women's autonomy) of unwanted pregnancy and thus consider when we provide medical care or insurance services: the pregnancy will threaten the life or health of the pregnant woman, the pregnancy is a result of rape or incest, and the pregnancy is a result of the failure of contraception due to women's incapability of protecting their interests.¹⁸¹ Virtually most bioethicists accept the first two conditions that have nothing to do with fair equal opportunity of women. (Note: the first condition here is about the sanctity of life, not fair equal opportunity.) Regarding the third condition, it has no strong relation to fair equal opportunity but we might use fair equal opportunity to argue for it. Even so, the third condition is questionable and is wrong. Since this is not my main concern, I offer a brief explanation. Williams' third reason is very slippery and she also forgets an important issue: consequence and responsibility. What counts as one's interests? Since this is not a very exact conception, it could lead to some slippery arguments. For instance, if the

¹⁸⁰ See their article "An Ethical Framework for Issues during Pregnancy" in *Principles of Health Care Ethics*, Raanan Gillon ed., 1994. Also see Williams (1992: p. 42) and Murphy (1989: p. 68).

¹⁸¹ See Williams 1992, p. 49.

pregnancy is not intended and if it does cause a woman some physical “disabilities,” it would be in her best interests (due to fair equal opportunity?) to have an abortion. But this is not right. For we cannot accept this simple and irresponsible justification. How can we blame the failure of contraception for causing her pregnancy, and thus allow abortion and furthermore cover its medical services? If we want to enjoy sex by using contraception, we should be aware that not all contraception is 100% guaranteed and thus if it fails, shouldn't we be responsible for our own actions? Williams ignores this important issue and focuses only on women's “unusual inability” to protect their interests. This is an irresponsible proposal. Therefore, even if we can argue using the third reason with fair equal opportunity, Buchanan et al.'s argument is still not proper.

(2) The second concern about their example of unwanted pregnancy is as follows. I argue that craving has no truly moral status. Since “unwantedness” is a craving too, an unwanted pregnancy by itself has no truly moral status. Suppose that in an advanced society, women can choose not to carry through the pregnancy by using the technology of so-called ectogenesis or *in vitro* gestation, which means to create an artificial womb so that embryos can be “incubated” as we incubate chicken eggs.¹⁸² So there is no need for women to carry through the pregnancy if they simply don't want to. Therefore, there is no ethical dilemma in this scenario; i.e., an unwanted pregnancy is morally neutral. However, an ethical dilemma arises when we have to consider the potentiality of an embryo to become a human being due to the principle of sanctity of life. So if a woman is pregnant and still wants “abortion,” then providing for this unwanted pregnancy has to be justified.¹⁸³ But

¹⁸² This technology has been discussed since the 1980s. According to *Time* magazine, some scientists predict that it will become plausible within next 20 years.

¹⁸³ “Abortion” here means that women don't want society to “incubate” their embryo either and simply want

what is the justification for such an unwanted pregnancy? It seems that the justification doesn't have anything to do with the equality (or fair equal opportunity) of women. For why do women still insist on wanting such an abortion if the embryo can be "incubated"? It is not right if our judgment is simply based on the justification of respecting women's choices and grant their *desire* to abort the fetus. Pro-life (i.e., respect for the sanctity of life) views make more moral demands than pro-choice (i.e., respect for one's autonomy) here. Therefore, if there is an ethical justification and if it does not come from justice as fair equal opportunity, it must come from elsewhere. But where? Hence, this example of unwanted pregnancy does not show that we are obliged to provide assistance.

(3) Buchanan et al. ignore that abortion is still a very controversial issue and that its primary concern is about whether we should use a pro-choice or pro-life approach rather than the equality of women. In addition, although it may seem absurd nowadays to argue that pregnancy is an abnormal functioning (and thus a "disease"), it is possible that we might define it as a "disease" in the future when ectogenesis is plausible. If so, what is our justification to cover unwanted pregnancy and how would Buchanan et al. respond to this scenario? In my opinion, they could argue that if we define pregnancy as a "disease," then we make a mistake since we use an approach of value-relativity and normativeness, which means that we define something as a disease based on our norms or values. I agree with them only when ectogenesis is still implausible. But when it is, we may have legitimate reasons to define pregnancy as a "disease." For we may consider it an abnormal functioning since carrying the pregnancy has no biological purpose. Therefore, I don't know how this example could help them argue against a moral line.

In spite of these concerns and problems, why do Buchanan et al. emphasize insurance

to abort the embryo for good.

schemes only? I wonder if this is the main reason why we ought to develop the moral distinction. If their cardinal focus is to set up a guideline or policy for the insurance companies or government, this is not a good approach. For most medical ethicists, the purpose of discerning the moral distinction between treatment and enhancement is to use it in the medical context first rather than in the non-medical one. For the ethical practices of insurance companies are, to some (large) extent, very different from those of the medical communities. Medical communities are for the most part supposedly non-profit oriented while non-medical communities are profit oriented, e.g., cost-benefit and medical effectiveness oriented. Michael Makover, a medical doctor, strongly criticizes that the non-medical communities are cost-driven (p. 95). He raises seven problems and six out of the seven problems are directly or indirectly related to cost.¹⁸⁴ Different goals will certainly require different ethical considerations. Therefore, business ethics rather than medical ethics is more appropriate for the non-medical context. Buchanan et al.'s approach may not be right.

A better and more logical way is to analyze this issue from the medical context first and then to see if it fits into the non-medical one. It shouldn't be the other way around, which is what Buchanan et al. argue. For the main reason why we draw the moral line is for medical ethics rather than business ethics. If the line works out well in the medical context, then we should (or can) apply it to the non-medical one. To some extent, Buchanan et al.'s reasoning is right since they do argue from the perspective of society or government. However, society and government should primarily side with medical communities rather than non-medical ones. Therefore, they take it in the wrong direction. They should not agree to current medical practices without any reservations and it is questionable to argue

¹⁸⁴ Makover 1998, pp. 154-155. Also see my concern below.

against the moral line based on current medical practices.

I discuss and refute their example of unwanted pregnancy at length because since it is the only example that Buchanan et al. use to argue that not all forms of genetic therapy are permissible (p. 153), it will be a threat to the Buddhist and my claim that all forms of genetic therapy are obligatory and thus permissible. However, this claim does not mean that we are able to cover (or treat) all forms of genetic therapy due to limited resources. It is a resource related “cannot,” not a moral or technological one, which I will explicate later.

Finally, according to Buchanan and his co-authors, the third reason why the moral distinction is arbitrary is that it cannot explain their hard cases. Recall their three reasons why we need to treat Johnny and Billy: both suffer the same disadvantage, it is beyond their control, and it is because of our prejudice of heightism that we exclude Billy for treatment. Buchanan et al. do not say much about why the moral line is arbitrary in their hard cases. I assume that it has something to do mainly with the third reason—our prejudices.¹⁸⁵ They indicate that we use our norms and values as our bases to draw the moral line. Since our norms and values are arbitrary (and maybe prejudicial), the moral line is arbitrary. I would agree with Buchanan et al. if this were the case. There are two reasons for my disagreement: (1) not every case is due to our prejudices and (2) there are other moral bases we can use to draw the moral line, e.g., the two bases I propose below.

First, Buchanan et al. assume that we use value-relativity and normativeness, e.g., our prejudice of heightism, as our basis to exclude Billy for treatment. Thus, the moral distinction is arbitrary. This argument is questionable since not all excluded treatments are simply due to our prejudices. For instance, consider their examples of Unhappy Husband, and the Shy Bipolar and Shy Normal. The degree of their illness, not our prejudice, seems

¹⁸⁵ See p. 118-119.

to be the principal reason for making the moral line arbitrary. For we are concerned about how serious these mental illnesses have to be for us to decide that they are diseases or impairments. This kind of judgment is subjective and thus is arbitrary. Hence, sometimes the arbitrariness problem arises not because of our prejudicial biases but because of the degree of disease, impairment, or illness. Second, one of the reasons why Buchanan et al. argue that this line is arbitrary is that they consider only one basis—justice as fair equal opportunity. If there are other bases we can use, we should be able to dodge the arbitrariness problem. I propose a pair of bases below to demonstrate how it could avoid this problem. The question is: How good are those bases for us to draw the moral line? I will explore this question later.

Despite all of these objections, Buchanan and his associates may not be aware of a problem. That is, even if their argument for genetic intervention is right, they still have to face the arbitrariness problem. For their (and Daniels's) definition of disease is arbitrary.¹⁸⁶ Since the definition of disease plays an important role to discern genetic therapy from enhancement, their approach cannot avoid the arbitrariness problem. Buchanan and his co-authors do not recognize that their approach has the same problem. Therefore, I wonder how effective or sound Buchanan et al.'s argument for genetic intervention is.

III. Other philosophers' views

There are three positions regarding whether there is a moral distinction between genetic therapy and enhancement: (1) there is no moral (or discernible) difference between them, which is suggested by Jeremy Rifkin and by the editorialist of the *New York Times*, (2) there is a moral difference but it is arbitrary, which is argued by Buchanan et al. and Nils

¹⁸⁶ See Eric Juengst in Erik Parens, ed., 1998, David Resnik 2000, Nils Holtug 1993, Lesley Jacobs 1996, and Kenneth Cust 1993. I discuss some of them in Chapter 2 and will mention the rest below.

Holtug, etc., and (3) there is a morally clear difference, which is proposed by French Anderson and Patricia Baird, etc.

In general, most philosophers support (2). I identify six reasons why they argue wrongly for (2). For instance, they haven't asked the right question and also haven't found sound moral bases. Also, sometimes it is difficult to know (or define) what counts as genetic therapy and enhancement, for instance, Moseley's example.¹⁸⁷ I will elucidate these issues in detail later. Because these issues tangle with one another, it is no surprise that most philosophers argue for (2). Buddhists and I will argue for (3), but our claim will be significantly different from Anderson's. Anderson's position is too strong. For he claims that we can and should draw a clear line between them and that no genetic enhancement should be allowed. Our position is not that strong: there is a clear line but some forms of genetic enhancement are permissible.¹⁸⁸

(1) According to Nils Holtug, Jeremy Rifkin argues that there is no moral line between genetic therapy (e.g., curing cancer) and enhancement (e.g., enhancing or changing one's skin color) because once we start with genetic intervention, there is no logical place to stop. Also, according to Holtug, the editorialist of the *New York Times* suggests that we cannot draw a clear line between curing genetic defects and improving the species.

Basically, those who argue there is no moral distinction between genetic therapy and enhancement use the slippery slope argument: when we consider whether we should allow acts A (e.g., genetic therapy) and B (e.g., genetic enhancement), it is argued that if we allow A, B will inevitably or probably follow A. Since B is undesirable or morally wrong, we

¹⁸⁷ See Chapter 1.

¹⁸⁸ One might feel a tension in this claim. How can we claim that there is a clear line between genetic therapy and enhancement while allowing some forms of genetic enhancement? Is there an inconsistency? I believe not. I will explain this concern later in Chapter 5.

ought not to allow A. Therefore, if we allow A--genetic therapy, there is no logical place for us not to allow B--genetic enhancement. Edward Berger and Bernard Gert suggest similarly. They say, "This is an example of what is known as a 'slippery slope' argument. The argument involves denying that a non-arbitrary line can be drawn between negative and positive eugenics, and therefore to protect against positive eugenics, we should not even start with negative eugenics."¹⁸⁹ Berger and Gert don't think that this argument is valid. For we should be able to stop it since we shall have much "stricter standards for the use of germ-line gene therapy."¹⁹⁰

(2) There is a moral line but it is arbitrary. Some philosophers agree with Buchanan et al. For instance, According to Eric Juengst, Tristram Engelhardt proposes that since medicine has no basic domain of practice, there is no such a coherent distinction between medical [therapy] and non-medical [enhancement] services at the first place.¹⁹¹ William Gardner suggests that because of psychological and economic reasons, it is impossible to draw and hold the moral difference between therapy and enhancement in practice. Anita Silvers argues that even though there is a distinction between therapy and enhancement, it is wrong to privilege treatment over enhancement just because of the traditional values of medicine.¹⁹² Jackie Leach Scully suggests that it is not easy to discern a clear distinction between different forms of intervention (p. 195).¹⁹³

LeRoy Walters and Julie Palmer say that the technical distinction is "significant" but the moral distinction is less clear and clean (p. xvii). Simply, the technical classification

¹⁸⁹ Ibid., p. 674.

¹⁹⁰ Ibid., p. 678.

¹⁹¹ Juengst 1997.

¹⁹² Juengst 1997, p. 124.

¹⁹³ Also see Nolan (1991: p. 613) and Wachter (1993: p. 175).

will become vague when we discuss morality for genetic intervention, for instance, Ray Moseley's example. Juan Manuel Torres offers another example— multidrug resistance (MDR) (p. 45).¹⁹⁴ It is a case of somatic gene enhancement within the purpose (or intention) of somatic gene therapy. Since cancer patients' normal cells will also be damaged by chemotherapy, why don't we enhance their bone marrow cells to resist the non-intended effects of chemotherapy? That is, why should we not enhance the natural resistance of hematopoietic stem cells to anti-cancer drugs specifically? Torres argues that we should because it is the human life rather than the natural trait that we value and because it is within a therapeutic purpose (p. 47). Without these two reasons, we won't have a good justification for genetic enhancement. Based on these two reasons, Torres draws a guideline for genetic enhancement: genetic enhancement is morally acceptable only if it is a necessary condition for curing or preventing disease or illness (p. 48).¹⁹⁵ What is Torres's point here? He shows that when we consider the moral status of genetic enhancement, the purpose of genetic enhancement will affect its moral legitimacy. Therefore, even though the technical classification between genetic therapy and enhancement is still intact, the moral status of genetic enhancement will depend on whether it has some therapeutic purposes (p. 48). There may be a concern with Torres's argument. Since he focuses only on somatic gene therapy and enhancement, can his guideline be applied to germ-line gene therapy and enhancement too? Based on his argument or guideline above, we don't see why it cannot. For his primary consideration is whether genetic intervention has some therapeutic purposes or not.

Eric T. Juengst offers another argument that includes both somatic and germ-line

¹⁹⁴ For Moseley's example, see Chapter 1. Torres 1997.

¹⁹⁵ Ibid.

genes.¹⁹⁶ He uses a model based on Daniels's idea of normal functioning. Juengst suggests without much explanation that Daniels's idea can help us draw a clear distinction between treatment and enhancement.¹⁹⁷ There is a concern about his suggestion. Juengst focuses only on the moral distinction between genetic prevention and enhancement rather than between genetic therapy and enhancement. There is a nuance of difference between these two. Genetic prevention is intended to serve some therapeutic purposes and thus is "narrower" than genetic therapy. Therefore, if Juengst can draw a line between genetic prevention and enhancement, it does not mean that the same line will necessarily exist between genetic therapy and enhancement. If his argument is valid, we shouldn't have a problem to expand it to genetic therapy. For the purpose of prevention is either to cure or to prevent genetic disease even though we may have to use enhancement to achieve that prevention purpose. (I also discuss this in Anderson's argument below.) However, if Juengst is wrong, then there is no point in discussing this concern further. We are afraid that this is the case. Since Daniels's theory couldn't support the moral distinction, Juengst's argument is not valid.

Even so, however, Juengst identifies a crucial epistemic question: How can we know when we cross the moral line? He writes, "This epistemic point about the need to be able to know when one has crossed a line is important to keep in mind in thinking about what separates genetic prevention from genetic enhancement, because in that context it applies equally forcefully to the Normal Function account as well."¹⁹⁸ In this regard, Juengst does

¹⁹⁶ Juengst 1997.

¹⁹⁷ I wonder if he knows that Daniels would not support his argument since Daniels and Buchanan later argue that the moral distinction between genetic therapy and enhancement is arbitrary. Juengst may say that he is arguing for prevention rather than therapy. However, this is his intention.

¹⁹⁸ Juengst 1997, p. 131.

offer a crucial criterion for seeing if any arguments could be valid in making a moral distinction between genetic therapy and enhancement. I will discuss later how the Buddhist approach could answer this question.

David Resnik challenges us to find a moral distinction between genetic therapy and enhancement. He writes, “Two decades ago, James Rachels challenged the moral significance of the active-passive euthanasia distinction in a widely anthologized essay. This paper has attempted to perform a similar debunking of the therapy-enhancement distinction in human genetics.”¹⁹⁹ Resnik as well as Buchanan et al. thinks that the moral line does not affirm a solid boundary between moral and immoral intervention and that some forms of enhancement are permissible (p. 365). He also points out that the technical classification of genetic intervention may not be as clear (or significant) as we think it is. For some forms of enhancement (e.g., circumcision to prevent urinary infections) could have therapeutic goals and some forms of therapy (e.g., a heart transplantation) could have enhancement effects. Therefore, the technical demarcation seems vague. Resnik writes,

Some forms of enhancement, such as a circumcision, can have therapeutic aims as well, e.g., preventing urinary tract infections. Some forms of therapy, such as heart transplantation, could have enhancement effects, e.g., a person could acquire an above average heart. Some interventions, such as preventative medicine, could straddle the line between enhancement and therapy.²⁰⁰

Resnik offers five ways to see how significant the moral distinction is. Among them, however, only the first and the second one are relevant. The rest only show that genetic enhancement is not inherently immoral. Resnik thinks that if genetic enhancement by itself is not inherently immoral and if some forms of genetic therapy are impermissible, we cannot draw a moral line between them. For since some forms of genetic therapy, e.g.,

¹⁹⁹ Resnik 2000, p. 374.

²⁰⁰ Ibid., p. 375.

heart transplantation, may be morally unacceptable and some forms of enhancement, e.g., preventative medicine, are morally acceptable, how can we draw a line between them? This argument is also suggested by Buchanan et al. However, this line of thought is incorrect for three reasons. First, this argument may not be valid against Anderson's moral line. I will explain this issue later. Second, Berger and Gert point out that there may be only very few borderline cases; so they are not significant enough to undermine the moral distinction. Third, even if there are significant borderline cases, it still does not follow that we cannot draw a moral line. For we may approach the distinction problem from wrong or unclear views. I identify six reasons why the moral arbitrariness problem is so complicated in my conclusion.

The first one that Resnik offers to see whether the moral distinction is significant is through the concepts of health and disease. Genetic therapy is to treat disease while genetic enhancement is to "improve" the human body or capabilities (p. 366). Resnik argues that this approach won't work because we assume that we have a clear and uncontroversial account of health or disease, and that the goal of treating diseases is morally legitimate, while other goals are not.

Second, **we use** the goals of medicine. Some authors discern the moral difference between genetic therapy and enhancement based on the goals of medicine. Genetic therapy is acceptable because it promotes the moral goals of medicine but enhancement is not because it does not offer such legitimate goals (p. 368). Resnik thinks that this approach won't work for two reasons. First, some goals of enhancement, e.g., to enhance human immune system to fight cancer, are morally acceptable. Therefore, some forms of enhancement may have medically legitimate goals too. Second, what counts as the goals of medicine is questionable. Even if we know that the goals of medicine are to treat and

prevent disease, this response still won't work for two reasons. (1) We assume that we agree on what the goals of medicine are and that we have an uncontroversial definition of health or disease. (2) Even if (1) is true, why would it be wrong or immoral to use genetic intervention for non-medical purposes? For instance, there is nothing wrong in using mastectomy developed with some therapeutic purposes for reducing breast surgery in men who have overdeveloped breasts? Sometimes the use of medical technology for genetic intervention is wrong because of consideration of other medical principles, e.g., justice or nonmaleficence. For instance, consider capital punishment. The American Medical Association holds that to assist state in executions is unethical for physician inside the medical context. However, this policy won't hold against capital punishment outside the medical context, since it involves social justice. Therefore, the goals of medicine cannot draw a sharp moral line between genetic therapy and enhancement. Hence, this approach won't work. I agree with Resnik's (1) but not with his (2). For as I argue, our primary concern about the application of the moral distinction should be in the medical context first. Besides, his mastectomy (or heart transplantation) example is irrelevant to our topic—genetic intervention.

Third, we are concerned about our humanness. Some philosophers argue that genetic enhancement is inherently immoral because it changes our humanness (p. 369). Resnik does not accept this argument for two reasons. First, it is vague and difficult to define what counts as humanness.²⁰¹ Second, it is not morally wrong to change those traits or abilities that make us human. There are two reasons for this. (1) Most moral theories, except the natural law approach, imply that there is nothing inherently wrong with changing human

²⁰¹ Resnik's definition of humanness is this: "humanness is best understood as a cluster concept in that it can be equated with a list of characteristics but not with a set of necessary and sufficient conditions." (p. 369)

traits or abilities. For instance, Kantians would reject any attempts to alter our traits or abilities only if they will violate human dignity and autonomy. However, not all genetic intervention will cause such violations; for example, using somatic gene therapy to promote hair growth poses no such violation. (2) Even the natural law approach doesn't show that it is inherently wrong to change our humanness. There are two views of the natural law approach: from the perspective of natural design and of God's purpose in creation. Resnik suggests that as long as we can perform genetic intervention carefully with our wisdom to make our humanness better (e.g., to promote justice or happiness), there is nothing inherently wrong from both perspectives (p. 371). Hence, it is wrong to argue that genetic enhancement is inherently immoral.

Fourth, we are worried about the rights of the unborn. According to Resnik, one could argue that some forms of genetic enhancement are inherently unacceptable because germ-line genetic intervention violates the rights of the unborn (p. 371).²⁰² Resnik argues that this is wrong because it appeals to the controversial assumption that the unborn children have rights. Even if unborn children have rights, it doesn't follow that germ-line genetic intervention violates their rights for three reasons. (1) If germ-line genetic intervention is in the best interests of the unborn children, it makes sense to use proxy consent. (2) It is more important for most children to be born with healthy genes that will predispose them to a wide range of opportunities than to be born with genes that won't. (3) Some forms of germ-line genetic intervention will augment the unborn children's rights to an open future; for instance, we can use germ-line gene enhancement to enhance their immune system to fight disease, which, otherwise, could limit their opportunities. Resnik concludes that genetic enhancement is not inherently wrong. Some types of genetic

²⁰² See Chapter 1 for four kinds of genetic intervention.

enhancement may be inherently wrong but not all of them (p. 373).

Fifth, we are concerned about eugenics. Some people attack germ-line genetic intervention because it constitutes a form of eugenics that attempts to control the human gene pool. Resnik argues that eugenics is not inherently wrong for two reasons. (1) From the perspective of parental eugenics, as long as we are willing to allow parents to make some choices that will affect the composition of the human gene pool, there is nothing inherently wrong. (2) From the perspective of governmental eugenics, even though some of those state-sponsored programs are wrong, e.g., involuntary sterilization of the mentally disabled, it does not prove that all eugenics programs are inherently wrong. Resnik concludes that this argument based on our fear of eugenics does not prove that genetic enhancement is inherently immoral. Some forms of eugenics are wrong but not all of them (p. 374).

I agree with most of Resnik's arguments. However, he points out only some problems rather than providing a solution for the distinction issue. His third, fourth, and fifth argument focus more on the moral acceptance of genetic intervention than on the distinction itself. The correlation between these arguments and the morally arbitrary distinction is not very strong. I agree with his argument about enhancement but not with his argument about therapy. Resnik fails to identify the moral distinction problem well. Even if not all forms of genetic enhancement are inherently immoral, it does not follow that we cannot draw a moral line between genetic therapy and enhancement. Also, Resnik does not offer any good examples against the claim that all forms of genetic therapy are permissible. He mentions the example of heart transplantation to refute it, which is not a strong case. For it does not make much sense that we want to have heart transplantation merely for the purpose of acquiring an above average heart. Even if one has an above average heart after

transplantation, it does not mean that one has an enhanced capability. Other physiological conditions will likely make that enhancement purpose fail. Therefore, unless there is also a therapeutic purpose, it makes no sense to acquire an above average heart.

In addition, there are several concerns about Resnik's suggestions. First, like Buchanan and other Western philosophers, Resnik is interested in justifying why we ought to do genetic therapy and enhancement. He writes, "The question I would like to explore in more depth concerns the wrongness of changing those traits that make us humans. Would it be inherently wrong to alter the human form?.. Since we have good reasons to believe that we can change our humanness, we can now ask whether we should do so."²⁰³ Resnik is not trying to answer this question: Why do we want to do genetic intervention? There is a significant difference between these two questions: one will lead us to draw a moral line between genetic therapy and enhancement but the other won't. I will explain this later.

Second, Resnik argues that some forms of genetic therapy are unacceptable since their risks will exceed their benefits; e.g., the current procedure of using somatic gene therapy to fight cancer is too risky. Resnik writes,

We can also view some forms of genetic therapy as unacceptable (at present) because they pose unjustifiable risks to patients or future generations. For example, all forms of GLGT [germ-line genetic therapy] and some types of SGT [somatic genetic therapy], such as a procedure for fighting cancer at the genetic level, are too risky, given our current scientific and technical limitations.²⁰⁴

If Resnik is right that all forms of germ-line gene therapy and some types of somatic gene therapy are immoral and thus unacceptable, this will pose a big challenge for the medical community and the Buddhist approach. However, there are four problems with Resnik's argument. (1) Most bioethicists have rejected this argument and now accept (somatic)

²⁰³ Ibid., p. 370.

²⁰⁴ Ibid., p. 374.

genetic therapy. The primary debate of genetic intervention at present is about genetic enhancement. Medicine always involves risks and benefits. If we don't try therapy with good intentions and purposes, medicine will not progress. Consider Resnik's cancer example. Even if the treatment is too risky, this will not prevent medical scientists from trying it. For it has great potential benefits for so many other cancer patients. In contrast, we cannot say the same thing for genetic enhancement, since we don't know for sure what the potential benefits will be. Therefore, in this regard, Resnik does not offer a good argument. (2) If he argues that we should not do some forms of genetic therapy due to risks exceeding benefits, what should we say about genetic enhancement? It seems that the majority of genetic enhancements should not be allowed at present. For genetic enhancement generally involves more risks than genetic therapy. Besides, we don't know what the risk-benefit ratio will be for enhancement. This is one of the main reasons why philosophers argue against genetic enhancement. (3) If Resnik argues that not all types of germ-line gene enhancement are inherently wrong, he cannot claim that all forms of germ-line gene therapy are unacceptable. For it does not make sense. Generally speaking, genetic enhancement is riskier and more controversial than genetic therapy. If not all types of germ-line gene enhancement are inherently wrong, it is difficult to see why all forms of germ-line gene therapy are inherently immoral. Resnik makes a mistake here. (4) If we follow Resnik's suggestion to stop using a moral line and if we don't know whether genetic intervention will have bad or good consequences, then what should we do? I don't think that we will just stop right there. No one can stop scientific enquiry, and it should never be stopped. We need a moral line more than just to address our fears and hopes. It also serves the purpose of being the ethical and medical guideline. If we cannot find a clear line, there may be something wrong with our thinking and reasoning, which I believe is the case. I

identify six reasons below to clarify this perplexing problem.

Nils Holtug rejects the idea that there is no discernible line between corrective and enhancement therapy. He argues that there are morally relevant differences between corrective and enhancement therapy because we are able to know whether they have any intrinsic value, such as well-being and fairness, not because corrective therapy is legitimate while enhancement is not.²⁰⁵ For instance, the intrinsic value of treating sickle cell anemia is to increase the well-being and life-length-expectancy of the patient. Holtug rejects Anderson's argument that there is a morally significant difference between corrective and enhancement engineering. According to Holtug, Anderson only shows that it is unsafe and unwise to attempt enhancement at present, and that some types of enhancement could be undesirable for some people. Holtug accepts that there are many moral distinctions that we can draw based on the intrinsic value of therapy or enhancement. He writes, "Maybe there is a grey zone where we are not sure whether or not gene therapy would be morally responsible, but then there would also be cases where we were sure that it was."²⁰⁶

Holtug's position is interesting. He suggests that there may be a grey area where we can use intrinsic value as the moral basis for drawing distinctions. Therefore, we can draw more than one line and they are arbitrary in this regard. It should not be arbitrary outside the grey zone. There are three concerns about this argument. First, we may not know precisely at which area those moral distinctions are located. It is possible that they do not concentrate in one particular area but in one dispersed zone. If so, it is difficult to decide the grey area. If we cannot decide the grey area, Holtug's suggestion is meaningless. Second, what does it mean to draw many distinctions between genetic therapy and enhancement

²⁰⁵ Holtug 1993, p. 409.

²⁰⁶ Ibid. p. 410.

based on intrinsic value? Do those lines all have the same “quality” or “nature”? If they do, in a sense, there is only one “qualitative” line. They are different only case by case; i.e., there are many moral distinctions with only a quantitative difference. But is this plausible or does this make sense at all? Besides, if those lines do not have the same “quality” or “nature,” what does it mean to have different “qualitative” lines? Third, what if there is a moral conflict of intrinsic value? For instance, recall Moseley’s example. It suggests that there is a moral conflict of intrinsic value. The requested genetic therapy is beneficial to the patient but it will be devastating to the patient’s future offspring. Hence, it is difficult to see what Holtug’s position is on the moral demarcation problem.

In addition, Holtug focuses only on therapeutic enhancement rather than pure enhancement. However, his description indicates the latter. Holtug writes, “The editorialist was worried that we would have a problem arguing against certain applications of gene therapy, e.g. adding genes to give people better brains...Of course, gene therapy designed to enhance intelligence could be given to all children equally (although I doubt whether this could be done).”²⁰⁷ Holtug is either confused about these two terms or he argues this way intentionally. For some types of enhancement do have some therapeutic or preventive purposes, for instance, Torres’s MDR example. Therefore, it makes sense to expect Holtug’s argument as being “therapeutic enhancement.” But this does not seem to be his intention. So I don’t know what to say about his position.

LeRoy Walters, and Nelson A. Wivel and LeRoy Walters have the same view as Buchanan et al.²⁰⁸ They also use a growth hormone scenario, similar to Buchanan et al.’s example of Johnny and Billy, to show that it is difficult to see the distinction between

²⁰⁷ Ibid., pp. 411-412.

²⁰⁸ Walter 1997, Wivel and Walter 1993.

genetic therapy and enhancement (p. 537).²⁰⁹ LeRoy Walters and Julie Gage Palmer draw a moral distinction between health-related and non-health-related types of genetic enhancement, which also indicates that genetic enhancement is not inherently wrong. Since they discuss the distinction between two different types of genetic enhancement, rather than the distinction between genetic therapy and enhancement, there are not any major problems with their approach. Their approach is also compatible with the Buddhist claim that genetic enhancement is morally neutral.

(3) Some philosophers argue that there is a moral line between genetic therapy and enhancement. Among them, French Anderson stands out. Anderson argues that we can and should draw a moral line between them. Anderson writes,

Can “lines” be drawn or will any application of genetic engineering in humans put us on an irreversible slippery slope that leads to undesirable consequences? If lines can be drawn, where and how should be drawn?..I will argue that a line can and should be drawn between somatic cell gene therapy and somatic cell enhancement engineering.

In summary, our society is comfortable with the use of genetic engineering to treat individuals with serious disease. Once we step over the line that delineates treatment from enhancement, a Pandora’s box would open. On medical and ethical grounds a line should be drawn excluding any form of enhancement engineering.²¹⁰

Here are Anderson’s reasons. A line can be drawn because we are able to do that when necessary (p. 684). For example, the Belmont Report (National Commission, 1978) is used to illustrate how guidelines were formulated to distinguish between ethical and unethical clinical research, and between clinical practice and research. Also, the Human Gene Therapy Subcommittee of the NIH’s Recombinant DNA Advisory Committee (1986) has stated a *de facto* proposal that germ-line alternation will not be considered. Jackie Leach Scully suggests a similar idea that we have been able to set up the moral limits for different

²⁰⁹ Ibid.

²¹⁰ Anderson 1989, p. 683-684 and p. 689.

ethical dilemmas. She writes, “Bioethics traditionally focuses on establishing moral limits between different types of acts.”²¹¹ A line should be drawn because the aim of somatic gene therapy is to treat severe disease, which can be supported by the fundamental moral principle of beneficence. To relieve human suffering and to maintain human dignity are Anderson’s two main reasons for genetic therapy.

On the contrary, somatic gene enhancement would threaten human values in two ways. First, it could cause a medically hazardous problem; i.e., the risks could exceed the potential benefits or the potential benefits are less clear (p. 687). Thus it could cause harms. Second, he suggests that “enhancement engineering would be morally precarious” because of three problems (pp. 687-690). (1) How can we decide what gene should be offered? Since it may be difficult to distinguish a serious disease (or suffering) from a “minor” or cultural one, we may not know what to do or how to provide genetic enhancement. For instance, consider Buchanan et al.’s example of Shy Bipolar and Shy Normal. Is Shy Bipolar’s shyness a “disease” or is it just the result of a social prejudice? (2) How can we decide who should get genetic enhancement? Traditionally, medical communities decide who gets the liver, heart, and kidney transplants based on medical needs. But on what bases would we decide who receives genetic enhancement? By lottery or by one’s ability to pay? Anderson proposes that we still need to use medical needs to decide since there is no significant consensus. (3) How can we do it justly? What if a person refuses, can society force an individual to have genetic enhancement, e.g., enhancing memory or math skill, if society thinks that it is good for both society and individuals? Also, since resources are limited, how can society distribute genetic enhancement justly? In addition, once we start genetic enhancement, we have to face eugenics sooner or later. Although eugenics may not

²¹¹ Ibid., p. 189.

be a bad thing, we may abuse it. Therefore, Anderson concludes that we can and should draw a moral line between genetic therapy and enhancement.

Although I agree with Anderson to a large extent, his argument is not that clear and may be incoherent. Anderson argues that we can and should draw a moral line between genetic therapy and enhancement because genetic therapy is to cure disease but putative genetic improvement is not (p. 689). If this is true, Anderson should agree that, as long as the goal of genetic intervention is to treat disease or relieve suffering, it is permissible no matter whether it is genetic therapy or enhancement. (This is the position I take.) However, based on these three problems of genetic enhancement, Anderson insists that no genetic enhancement should be allowed, which, I think, is too strong. Hence, Anderson's argument is not clear and there are some tensions in his argument. For we can apply the same three problems—(1), (2), and at least part of (3)—to genetic therapy even though they might be less problematic. If so, it is not coherent for Anderson to argue that genetic therapy is permissible while genetic enhancement is not.²¹² Even so, however, Anderson does offer a central goal necessary to guide genetic therapy: to relieve human suffering and maintain human dignity. At the same time, he still misses the important moral basis behind that central idea, which I will discuss later.

There may be another concern. Since, like Juengst above, Anderson argues for drawing the line only between somatic gene therapy and enhancement, can his argument be applied to germ-line gene therapy and enhancement? I believe that it can for two reasons. First, if we appeal to the same fundamental moral principle of beneficence, it does not matter whether we sanction somatic or germ-line gene therapy and enhancement. The purpose of

²¹² David Resnik points out the similar problem discussed below.

therapy is to relieve suffering but that of enhancement is not.²¹³ This is Anderson's suggestion too. Anderson writes,

The initial "line" should be those diseases that produce significant suffering and premature death. As experience is gained, the line should be moved to include a wider range of diseases and, possibly, germline gene therapy for specific diseases (depending on the efficacy and safety data that become available). Gene transfer should not be used for enhancement engineering.²¹⁴

Second, I don't see any reasons why Anderson's moral line cannot, or should not, be applied to germ-line gene therapy and enhancement. If the technical classification between genetic therapy and enhancement is well established, there is no reason why we cannot apply the moral line to both. Even if the technical line may not be that clear, Anderson's line can be still applied to both kinds of genetic therapy and enhancement. For we still use the same principle of beneficence for both kinds of genetic therapy and enhancement. Therefore, we don't need to worry about this concern.

Some philosophers criticize Anderson's argument. Nils Holtug suggests that Anderson does not establish a clear moral line between genetic therapy and enhancement. Anderson's argument only shows us that it would be unsafe and unwise now to attempt genetic enhancement and that some types of genetic enhancement may not be desirable for some people (p. 408).²¹⁵ David Resnik also criticizes Anderson and points out that there are two questionable assumptions in Anderson's argument. Resnik writes. "However, this [Anderson's] way of thinking of medical genetics makes at least two questionable assumptions: (1) that we have a clear and uncontroversial account of health or disease, and

²¹³ This will be similar to the Buddhist and my approach but not to Buchanan et al.'s. For Buchanan et al. use a different principle, justice as fair equal opportunity, to justify for both genetic therapy and enhancement. And this is one of the reasons why their moral line is arbitrary. See my concern below.

²¹⁴ Ibid., p. 690.

²¹⁵ Holtug 1993.

(2) that the goal of treating diseases is morally legitimate, while other goals are not.”²¹⁶ To a large extent, Resnik is right. First, Anderson’s distinction is inevitably related to the account of health or disease, and this account is indeed very controversial, unlike Buchanan et al. who assume that it isn’t.²¹⁷ However, I will argue that this questionable assumption should not deter us from drawing a moral line. Second, since some forms of genetic enhancement, e.g., Torres’s MDR example, are morally acceptable, it is wrong to assume or argue that all types of genetic enhancement are inherently impermissible. Anderson’s argument for the moral line is too simple and too strong. It is too simple because this problem does involve a very controversial idea of disease or health. It is too strong because he claims that all forms of genetic enhancement are impermissible, which is false. One of the reasons for these criticisms is that Anderson does not explicate his argument clearly enough, as I suggest above.

While agreeing with Anderson, Bernard Hoose also criticizes him and proposes that even though we can draw a moral line, this line should be constantly adjusted to our ability and knowledge. Hoose writes, “The line is, needless to say, a temporary one, but the present level of ignorance on the part of researchers regarding both the possible side effects and what is likely to constitute a mistake makes it likely that the line in question will need to stay where it is long into the future.”²¹⁸ Hoose thinks that “can” implies “ought to,” which may not be right. (See my conclusion below.) He argues that as long as we know genetic therapy or enhancement is safe or causes no harm, we should do genetic intervention, including enhancement. Since those empirical facts depend on the advance of

²¹⁶ Resnik 2000, p. 366.

²¹⁷ See Chapter 2.

²¹⁸ Hoose 1990, p. 302.

technology and knowledge, Hoose concludes that we should constantly adjust how we draw the moral line. Hoose's argument is not right. For even if we can know that genetic intervention is safe or causes no harm, e.g., height enhancement, it does not mean that we ought to do it. We should not do genetic intervention simply because we can. Without moral or appropriate justification, it is wrong to make such a claim. Besides, how can we be sure genetic enhancement is safe or causes no harm? Hoose simply begs the question. In contrast, this is not what Anderson argues. Anderson suggests that we should move the moral line because we increase our capabilities to treat serious diseases, not because we simply can (p. 688).²¹⁹

William Gardner grants Anderson's argument. However, he poses a question: Can we prohibit genetic enhancement? Gardner answers this question negatively. He offers his argument based solely on competition, which is very narrow and may not be right. Gardner argues that once genetic enhancement is plausible, parents will feel pressure to do genetic enhancement due to severe competition. By the same reasoning, every country will compete to do the same thing. No parents want their children to be left behind and nor does any country (p. 72-78).

There is one concern about Gardner's argument. Gardner's argument is too narrow because he focuses only on competition. Without the consideration of other factors (e.g., justice or well-being), his argument is too narrow to be effective. First competition is not everything. Competition alone cannot suffice for his argument. Second, if Gardner is right, will genetic enhancement based on competition make people happy or make human beings flourish? We are afraid not. What makes human beings flourish has involved a long debate between competition and cooperation. Take nuclear weapons for example. Suppose that

²¹⁹ Anderson 1989. Also see p. 690.

the nuclear technology is available for every country that wants it. According to Gardner's thinking, every country should and will definitely compete to build nuclear weapons. For it is the best security (and maybe benefit) for every country to have nuclear weapons. Then, what consequence will come with this kind of competition in case of war? Even if we don't know for sure, most people will be worried a lot about its consequence—the end of the world. In addition, human beings will not flourish under this kind of dangerous competition. Therefore, even though we cannot stop the advance of genetic enhancement, Gardner's argument is questionable.

Although discussing this issue in a different way from Anderson, Patricia Baird agrees with him. She identifies three categories to discern the difference between genetic therapy and enhancement based on intentions or purposes: (1) genetic engineering of somatic cells to treat disease (i.e., gene therapy), (2) genetic engineering of germ cells (gonads) for prevention, and (3) genetic engineering for enhancement (p. 567). Baird's argument is not as strong as Anderson's. Unlike Anderson, she identifies and accepts (2) because it has a prevention purpose. This allows her to accept Torres's MDR example and other forms of preventive enhancement. Although Baird agrees with Anderson that we should use medical needs to decide who should receive genetic therapy, she does not think that we are able to do the same with genetic enhancement (p. 547). On the contrary, Anderson thinks that we can do the same with enhancement.

Deepak R. Kaura argues strongly for this distinction. He argues that all kinds of germ-line alternations should not be allowed since they violate various moral principles, such as autonomy and beneficence, and since they potentially lead to more abuse and danger to society (pp. 928-929). Kaura does not understand this perplexing problem thoroughly. He argues in a perfunctory way. For instance, the line we are debating about is

between genetic therapy and enhancement rather than between somatic gene and germ-line gene therapy. As mentioned, bioethicists no longer worry about genetic therapy.

Edward Berger and Bernard Gert also propose that we can draw a moral line between negative and positive eugenics. However, to do that, we need to know what “malady” is. Berger and Gert define “malady” as follows: “A person has a malady if and only if he has a condition, other than his rational beliefs and desires, such that he is suffering, or at increased risk of suffering, an evil (death, pain, disability, loss of freedom or opportunity or loss of pleasure) in the absence of distinct sustaining cause.”²²⁰ Based on this definition of malady, Berger and Gert offer a solution to resolve the debate between natural and normative definition of disease.²²¹ Therefore, they think that using the concept of malady could provide an objective criterion to demarcate the moral distinction between genetic therapy (negative eugenics) and enhancement (positive eugenics) (p. 674).

Berger and Gert’s argument for the moral distinction is invalid for two reasons. First, how we define disease or malady is only one dimension of the arbitrariness problem. For instance, David Resnik offers five ways to clarify this perplexing problem. Juengst points out two other factors, and I identify some more in my conclusion, for instance, the vague technical classification of genetic intervention, what our intentions are, and the relation between “ought to” and “can.” Although we all agree that how to define disease is very important to distinguish the moral line, it alone is not sufficient to resolve the distinction problem. Second, Eric Juengst argues that Berger and Gert’s “malady” cannot be an objective criterion for the moral line because it still cannot resolve the arbitrariness

²²⁰ Ibid., p. 674.

²²¹ See Chapter 2.

problem (p. 33).²²² For instance, we can “treat” people with an inherited high risk of heart disease by increasing the number of low density lipoprotein receptors in their blood cells, which, then, can enhance their ability to reduce high levels of cholesterol that cause heart disease. Thus, we can also use it to “treat” people with a moderate risk of heart disease. If so, it is arbitrary to draw a distinction between treatment and enhancement. Therefore, even if we use the definition “malady,” it still cannot provide a solution for the arbitrary distinction problem. In addition, if Berger and Gert solved the distinction problem, why wouldn’t we see lots of authors using their “solution”? Since the distinction problem is very important and interesting, there should be more discussions of their “solution.”

However, if Berger and Gert’s definition of malady is suitable for the distinction problem, it demonstrates two important issues. First, it shows that the loss of opportunity is only one of the possibilities that disease or malady could cause. That is, the loss of opportunity is not a necessary result that disease or malady may cause. In other words, there is no necessary connection between disease or malady and fair equal opportunity. This is what I argue strongly in Chapter 2. Second, according to their definition, malady cannot be based on desire (or craving), which is very helpful for Buddhists to demarcate the moral distinction between genetic therapy and enhancement.

In addition, Berger and Gert offer an interesting solution for those borderline cases, e.g., Moseley’s and Torres’s example. They think that there definitely will be some borderline cases but not many. According to their definition of malady, those borderline cases should not be serious enough to alarm us (pp. 674-675). They may be right but this argument needs further empirical investigations.

Some other philosophers agree with Anderson. For instance, David Suzuki and Peter

²²² Erik Parens, ed., 1998

Knudtson propose a genethic principle: “While genetic manipulation of human somatic cells may lie in the realm of personal choice, tinkering with human germ cells does not. Germ-cell therapy, without the consent of all members of society, ought to be explicitly forbidden.”²²³ This principle is too strong and is implausible. For how can we get the consent of all members of society? Also, it forbids too much because not all forms of genetic enhancement, e.g., Torres’s MDR example, are impermissible.

Jean Porter proposes that we can and should draw the moral distinction for genetic engineering based on the same considerations that we use to evaluate any other medical dilemmas (pp. 420-422). Thus, Porter says that we may accept Anderson’s conclusion that genetic therapy is to cure disease and thus acceptable, and that enhancement is to improve the desired traits and thus should not be allowed. However, Porter suggests that the primary criterion to draw the line is the principle of risks and benefits, which is questionable. For this approach does not work very well to discern the moral line, as shown.

I don’t quite know what Porter’s position is for two reasons: (1) she uses a vague term “genetic engineering” throughout her argument; (2) her main purpose is to support genetic engineering based on unnaturalness (p. 420). With respect to (1), Porter does not specifically say what “genetic engineering” means. As I explain in Chapter 1, it could mean genetic therapy, genetic enhancement, or both. Given this vagueness, we don’t know what moral line(s) Porter wants to distinguish. It could mean the moral line between genetic therapy and enhancement or the moral line among different forms of genetic enhancement. With regard to (2), Porter’s main aim is to reject those arguments against unnaturalness and to argue that not all forms of genetic enhancement are impermissible. For instance, she uses the concept of unnaturalness, e.g., “creating a Frankenstein” and

²²³ Suzuki and Peter 1989, p. 163.

“playing God.” So the lines she tries to draw could be among different forms of genetic enhancement rather than between genetic therapy and enhancement. If so, I agree with Porter. However, how can we draw some moral lines among different kinds of genetic enhancement? Porter merely suggests that we simply use the principle of risks and benefits as our criterion. This leads to another concern: we can not use the principle of risks and benefits to draw the lines, since it cannot cover all of the main problematic issues of genetic enhancement (or genetic therapy) very well. For instance, recall Torres’s MDR example and Moseley’s. The principle of risks and benefits plays no role in our consideration for these two cases. In contrast, the principle of justice as fair equal opportunity can offer a partial solution for these two examples and it has more explanatory power than the principle of risks and benefits. This is why I choose it as my moral basis for genetic enhancement.

In addition, Porter criticizes Anderson by saying that the principle of risks and benefits itself still carries an incalculable risk. Therefore, Porter says that it is problematic to use this principle. (If this is true, why does she use only this principle to discern the moral line?) Is her criticism right? It depends. If this principle is Anderson’s only criterion for the moral distinction, then she is right. But we don’t know if it is the case. So we don’t know whether her criticism is right or not. But I know that her criticism is wrong for the Buddhist and my approach since neither uses this principle as the main criterion. Finally, it is unclear whether Porter supports a moral line between genetic therapy and enhancement. Since I don’t know what Porter’s position is, I may be wrong to put her on Anderson’s side.

Arno G. Motulsky agrees with Anderson in a sense. He says that germ-line gene engineering will certainly cause a qualitative difference from that of somatic gene therapy because it will affect future generations. Thus, Motulsky suggests that we need extensive

safeguards and public discussion before we use it (pp. 139-140). Motulsky draws a line based on technical progress, which is inadequate for the perplexing problem as shown in my critique of Resnik.

Unlike some other philosophers, LeRoy Walter indicates that the technical distinction is much clearer than the moral distinction between genetic therapy and enhancement. In a comparative sense, he is right. However, it may be still one of the reasons why we cannot morally distinguish the difference between genetic therapy and enhancement. There are two reasons for this. First, in some cases, the technical distinction itself could be vague. For instance, recall Ray Moseley's example: a patient seeks genetic therapy that has positive effect on somatic cells and yet it has devastating consequences on all of the patient's future offspring. So this SGT (somatic gene therapy) tends to have the effect of GGT (germ-line gene therapy). David Resnik also points this out (p. 366).²²⁴ So what should we say about this case? According to the principle of double effect, we have to sanction the patient's wish. Also, recall Torres's MDR example. It is a genetic enhancement with a purpose of therapeutic prevention, i.e., SGE (somatic gene enhancement) tends to have the effect or purpose of SGT (somatic gene therapy). Therefore, the technical classification may not be so clear and this vagueness may cause arbitrary moral judgments. Second, the technical classification has a moral ambiguity between GGT (germ-line gene therapy) and SGE (somatic gene enhancement). Some philosophers, e.g., Allen R. Dyer, think that GGT is a kind of "enhancement" too.²²⁵ In short, this technical classification between genetic therapy and enhancement may become vague when we discuss morality. If we think deeper,

²²⁴ Resnik 2000.

²²⁵ Dyer thinks that only SGT is genetic therapy and the rest, GGT, SGE, and GGE, are genetic "engineering."

this problem is also related to how we define disease as well as what our intentions are. I will expound this later.

IV. Some questions and concerns

Before we raise five concerns, let us recall the three main reasons that Buchanan and his co-authors argue against the moral line: (1) there may not be good moral bases for the moral distinction, (2) the moral distinction does not map onto the medical and nonmedical boundaries of obligation/nonobligation, and (3) it cannot explain their hard cases well. I believe that these three objections are not enough to challenge the moral distinction. I discuss (2) and (3) at length above. Let us focus on (1) first in this section.

First, the arbitrary distinction problem exists before and after Buchanan et al.'s argument. It exists before their argument since it is inherent in Daniels's theory of health care, as shown in Chapter 2. (Also, see the second concern below.) After providing a basis, justice as fair equal opportunity, Buchanan and his associates still cannot resolve the arbitrariness problem since they still use Daniels's theory. There is another reason for this.

From their scenarios and arguments in Chapter 1, Buchanan and his co-authors try to answer this question: Why ought we to do genetic intervention? The justification they find is justice as fair equal opportunity. This is also pointed out by Francoise Baylis & Jason Scott Robert. They say that Buchanan et al.'s motivation is "to meet the demands of justice (p. 2)." Let me again present Table 1 for the question that Buchanan et al. try to answer.

Table 1	Why ought we to do genetic intervention?	
	Genetic Therapy	Genetic Enhancement
Buchanan et al.'s answers	Because of justice	Because of justice

If these are the justifications they use, then it is not surprising that Buchanan et al. argue that the moral distinction is arbitrary. For if the ethical principle to justify both genetic therapy and enhancement is the same, there is no need to make a moral distinction. That is, if we can use the same ethical basis to justify two actions or categories for moral purposes, it means that there is no moral distinction or the moral distinction is arbitrary. For example, consider the moral principle for two different categories: abortion and euthanasia. If we use the same ethical principle, “Don’t kill due to the sanctity of life,” then the moral distinction between abortion and euthanasia fades away, other things being equal. For there is no moral difference between killing a fetus (or embryo) and killing an adult, other things being equal. Nils Holtug uses the same argument for a different purpose—a slippery slope argument. He writes, “E.g. if A is abortion, and B is killing innocent adults, and *ex hypothesi*, there are no relevant differences between A and B, we should presumably not allow A because we would then be logically forced to allow B.”²²⁶ Therefore, even though there is no moral difference between killing a fetus and killing an adult based on the same principle, “Don’t kill due to the sanctity of life,” it is a mistake to think that there is no moral distinction between abortion and euthanasia, if there are other moral principles to use and consider. So Buchanan et al. still have to face the moral arbitrariness problem.

Even after Buchanan et al. criticize the morally arbitrary distinction between genetic therapy and enhancement, they cannot still resolve the arbitrariness problem. Why haven’t they said anything about it? Maybe they think that they don’t need to say anything since they assume that there is no controversy about Daniels’s theory or that they cannot say anything since it is inherent in Daniels’s theory. Hence, there is no point for them to argue for a distinction either way. Besides, if they argue that we have to use justice to justify both

²²⁶ Holtug 1993, p. 404.

genetic therapy and enhancement, there is also no point to demarcate a moral distinction between them, as the example of abortion and euthanasia shows. It will be meaningless for the sake of their argument. Even if there is a distinction, it will be useless to argue that their moral distinction is not arbitrary. It may be useful to avoid moral hazard for medical purposes, as they suggest, but not for the purpose of this distinction problem. For instance, consider their example of Johnny and Billy. If we grant everything they argue and if we also assume that there is a moral distinction, where does their moral distinction play its role and where is the moral hazard in their example of Johnny and Bill? There seems to be none. So they don't need to worry about the moral distinction. This problem is inherent in their argument. Hence, they still face the problem of drawing a moral distinction between genetic therapy and enhancement, which they haven't considered and realized.

There is an intriguing position shift in Allen Buchanan and Norman Daniels. Before publishing their book, Buchanan and Daniels argued that there was a moral distinction between genetic therapy and enhancement.²²⁷ Why did they change their position? One more interesting thing is that they changed their argument with similar materials and examples, for instance, the same example of Johnny and Billy, and the Shy Normal and Shy Bipolar. According to Nils Holtug, Daniels and Buchanan argued that there was a moral distinction between genetic therapy and enhancement and that we were not obliged to do genetic enhancement. Consider their example of Johnny and Billy. According to Parens, Daniels agreed that Billy did not deserve treatment since his shortness was not a disease, and Daniels acknowledged that Billy's case was a difficult one for his theory.²²⁸

What an intriguing change this is! There is nothing wrong with changing one's mind or

²²⁷ Buchanan 1995, Daniels 1994, and Buchanan et al. 2000.

²²⁸ Parens (1998: pp. 4-10) and Holtug (1999: pp. 139-140).

argument. However, if one can use the same materials and examples to argue for contrary positions, something may be wrong. But what is wrong? The problem could be either that Daniels argues for different purposes or he uses a different basis to support his argument. Since Daniels's cardinal purpose is to see how his theory of a right to health care can resolve some ethical issues, it is hard to see any substantive difference. On the other hand, according to Parens, it is more likely that Daniels uses a different basis to support his argument. Daniels didn't use justice as fair equal opportunity to justify both genetic therapy and enhancement before their book. He left the matter to medical convention and then he was criticized for the arbitrariness issue. Daniels then responded to the criticism by appealing to justice as fair equal opportunity. Although Daniels tried to solve the criticism, the arbitrariness problem remained unresolved. Without using two different bases, it is hard to see why the moral line between genetic therapy and enhancement is not arbitrary. And, as I will later argue, we can find two bases to resolve the arbitrariness problem.

The second concern: Buchanan and his co-authors suggest that one of the reasons why the distinction is arbitrary is that we (have to) use the term "disease."²²⁹ However, they assume that there is no controversy about their definition of disease. So they ignore this issue. But this is not true as shown in Chapter 2. The definition of disease not only is very controversial but also plays an important role in the morally arbitrary problem. Many philosophers point out that to discuss (or to solve) the arbitrariness problem, an account of health or disease is necessary. For instance, Eric Juengst, Glenn McGee, Nils Holtug, Erik Parens, Anita Silvers, David Resnik, and Jackie Leach Scully.²³⁰ Since it is not easy to

²²⁹ See p. 119.

²³⁰ Juengst (1997: pp 127-129), McGee (2000: pp. 116-117), Holtug (1993: p. 410), Parens (1998: p. ix), Silvers in Parens (1998: p. 7), Resnik (2000: p. 367), and Scully (2001: p. 197).

define a clear account of disease or health, the vagueness of disease or health makes it difficult to distinguish the moral difference between genetic therapy and enhancement. However, I will argue that this difficulty should not deter us from drawing a moral line.

As shown in Chapter 2, the definition of disease that Buchanan et al. reject is based on value-relativity normativeness rather than biological normativeness. Also, we have seen that there are many problems with their definition of disease. However, for the sake of argument, let us put aside those problems and grant everything they argue. Then, we can ask Buchanan et al.: If we follow your definition of disease, the moral distinction won't be arbitrary, will it? What would Buchanan et al. respond to this question? Since they propose that we should reconstruct the definition of disease to include Billy's condition (p. 118-119), I assume that they would wish to say yes. But they cannot. Even if their definition were value-free, it would be still very difficult to see how and why the moral distinction is not arbitrary, since this problem is inherent in their definition. Some philosophers point this out. For instance, Erik Parens says, "A second, widely discussed problem with Daniels's account of the treatment/enhancement distinction is that it can appear to be arbitrary."²³¹ David Resnik, Lesley Jacobs, Kenneth Cust, and Eric Juengst also point out the same problem with regard to Daniels's theory.²³² Since they all suggest the same problem, let us consider Juengst's. Juengst contends that Boorse's and Daniels's account of disease still cannot adequately distinguish the moral difference between genetic prevention and enhancement. According to Juengst, Boorse and Daniels may have to admit that they cannot avoid this problem. In addition, Juengst argues that Daniels's account

²³¹ Parens 1998, p. 5.

²³² Resnik (2000: p. 367) and Juengst (1997: pp. 135-136). Also, see Lesley Jacobs's and Kenneth F. T. Cust's discussion in Chapter 2.

cannot answer this epistemic question: Can we know when we cross the line between genetic prevention and illegitimate enhancement? For instance, we cannot tell when the use of normal (genetic) immunization to against infectious diseases crosses the line to become enhancement.²³³ Juengst concludes that Daniels's theory cannot answer this question because it is blind to the difference between enhancing the body to resist disease and enhancing the body to gain other traits or advantages. Therefore, even if we use Daniels's definition of disease, the moral line is still arbitrary. In short, the arbitrariness problem is inherent in Daniels's theory.

The third concern. As I argue in Chapter 2, Buchanan and his co-authors' argument, based on justice as fair equal opportunity to treat both Johnny and Billy, works only if there is a necessary connection between disease and fair equal opportunity. If there is no necessary connection, Johnny's tumor will be left without treatment. For Johnny's height is normal and thus won't suffer any disadvantage to compete. Buchanan and most other philosophers do not recognize that their argument could leave out Johnny's tumor for treatment. They think exclusively that only Billy will be left out of treatment for his shortness.²³⁴ As shown above, the moral line is still arbitrary even if Buchanan and his associates' argument otherwise works. This demonstrates that their argument is problematic and that we need to use a different basis to justify Johnny's treatment. That is, we need two different bases to justify genetic intervention. This is my claim.

So what can Buchanan et al. do? They cannot go back to Daniels's account since his account cannot provide a clear moral line either. They could respond by saying that since the distinction problem is not their principal focus or concern, they don't need to worry

²³³ Ibid., pp. 133-134.

²³⁴ Ibid., p. 118-119.

about it. We are afraid that this is not a good response. For whether we can draw a moral line is an important issue and a lot is at stake in arguing over the moral distinction. (Although Resnik suggests that we should give up the moral distinction because we cannot draw a clear moral line, we may give up too much.)

To avoid the possibility that we may have to leave out Johnny's tumor for treatment, the best way is to abandon justice as fair equal opportunity to justify genetic treatment and instead to use Bodhisattva's compassion as a moral basis to justify it. That is, we use Bodhisattva's compassion to justify genetic therapy (e.g., treating Johnny's tumor) and justice as fair equal opportunity to justify enhancement (e.g., enhancing Billy's height). This is my approach. French Anderson argues similarly. He writes, "In this type of situation, the purpose of the intervention would be the prevention of disease, not simply the personal desire of an individual for an altered characteristic."²³⁵ However, as I will explain, Anderson doesn't go further to specify and develop an argument for it.

In addition, Buchanan et al. are right in saying that we should not use norms or values to draw a distinction between genetic therapy and enhancement. So what could we use? Not too many philosophers touch or discuss this issue. For instance, consider Anderson's distinction: the aim of therapy is to cure or prevent disease but the aim of enhancement is not. What, then, is the therapeutic basis requiring us to cure or prevent disease? Most philosophers ignore this issue and take for granted that curing or preventing disease is simply a goal of medicine. They seldom question the moral basis behind it. As an analogy, consider Nils Holtug's proposition against Daniels's theory. Holtug states that Daniels's argument for the moral distinction is based on intuition and thus may be baseless, like

²³⁵ Anderson 1985, p. 288.

many other moral views we firmly hold.²³⁶ Why is medicine obliged to treat or cure disease? Anderson suggests that it is because we need (or want) to relieve suffering from people or to maintain human dignity. But why? From the Buddhist perspective, there is a deeper reason why we are obliged to relieve people's suffering. That is, it is because of our compassion. By contrast, most Western philosophers argue conventionally that it is because of the purposes or goals of medicine, for instance, Resnik's second analysis above. Even if some philosophers relate the compassion basis to the goals of medicine, the Western account of compassion is still too narrow and perfunctory to support the moral line. This will be one of my focuses in Chapter 4.

Fourth, there is a concern about the relation between obligatory (or permissible) and nonobligatory (or impermissible). Buchanan and his co-authors suggest that one of the reasons why the distinction does not coincide with those obligatory/nonobligatory boundaries of the insurance schemes is resource limitations. This is not a good argument to support the claim that the moral distinction is arbitrary for three reasons. (1) The limitation of resources is a practical matter. It does not show what we ought or ought not to do. Therefore, the limitation of resources *by itself* has nothing to do with our moral obligation. As I mention Rosenberg's argument in Chapter 1 and in my critique of Hoose above, there is no one-way relation between "can" and "ought to." It is a two-way relation. This two-way relation could cause some confusion but it should not cause the moral arbitrariness problem. I will elucidate this issue later.

(2) Buchanan et al. may be wrong to say that the moral line does not match those obligatory/nonobligatory boundaries of medical and nonmedical context. For even if justice requires us to treat only the most important and urgent needs given limited

²³⁶ Holtug 1999, p. 140.

resources, it does not follow that the moral line is arbitrary. Holtug suggests the same thing but claims that there are still morally relevant differences between genetic therapy and enhancement. Holtug proposes that we can still discern the morally relevant differences between them and that enhancement has a low priority on the list of health care needs.²³⁷ Holtug concludes that even if the enhancement of intelligence itself is not morally wrong, when all public health care needs are considered, it is morally wrong to take scarce resources away from those who need them most and use them for enhancements that are really urgent needs. For the enhancement of intelligence is not one of the intrinsic values that he suggests. However, this does not mean that the enhancement of intelligence is morally wrong and we are not obliged to do it. It simply means that it is not on the top of our moral priority list. Holtug's argument also supports my sixth reason identified below: "cannot" does not necessarily mean "ought not," which means that we cannot do enhancement due to prioritized reason but this does not mean that enhancement itself is morally wrong and we are not obliged to it. Hence, Buchanan and his co-authors' argument may be wrong.

(3) Buchanan et al. seem to agree with medical insurance and physicians, and offer their argument based on current medical practices. For instance, they say that the unwanted pregnancy is covered by medical insurance due to the equality of women, while this results from normal functioning, not from disease or impairment. This claim is questionable for three reasons. First, if their claim is right, why does Daniels's theory of rights to just health care not work in the US today? As I argue in Chapter 1, there are still many Americans who do not have any health insurance. Also, although Gert Jan Van Der Wilt agrees with Daniels, he wonders why we still debate over public funding of health care services. Hence,

²³⁷ Holtug 1993, p. 413.

current medical practices do not seem to be just. Second, the Western medical ethics tends to be teleological (i.e., goal-oriented or end-oriented), which means that it focuses more on the results of one's actions than the actor's intentions. Good ends may not result from good intentions because the agent could be simply unlucky. Good intentions may not lead to good ends because things may not happen as intended. Even if things may happen as intended, they could come with some bad consequences, for instance, Moseley's example of double effect. In my opinion, medical ethics based on intentions is a much better approach than that based on ends or goals. For at least, we have to ask two prior questions before setting the goals for an action X: What are the bases of our intentions for doing X and why do we want to do X? For instance, like Anderson, Nicholas Agar does not ask these two questions. Only these words, "aim" and "goal," rather than "intention," appear in his statements. Agar writes,

Most people want to draw a sharp dividing line between the two categories of genetic intervention. Genetic engineering which many would consider to be under some circumstances morally acceptable is called therapeutic. Roughly, this kind of engineering aims to remedy defects not present in normal humans. In the other category comes eugenic engineering. The goal of this kind of genetic manipulation is to produce individuals whose capacities go beyond the normal.²³⁸

Also, David Resnik points out that we cannot resolve the distinction problem by appealing to the goals of medicine for two reasons: first, there is no clear definition of health or disease, and second, the goal-directed approach does not work well outside the medical context (pp. 368-369). Eric Juengst also suggests a similar idea.²³⁹ Then, on what moral bases do we define aims or goals? Most Western philosophers ignore this question. They just take whatever the bases are for granted, if there are any. Consider, for instance,

²³⁸ Agar 1995, p. 2.

²³⁹ Eric Parens, ed., 1998, p. 29.

Anderson's first reason above—to relieve suffering. Most people think that we want to cure disease because it can relieve suffering. But why are we obliged to relieve suffering? The most accepted answer is that eliminating suffering promotes health and happiness or that it is required by justice as fair equal opportunity. But why do these goals make us obligated? There is no strong moral basis for answering this question in Western thinking.

Despite this, one could argue that it is a duty to relieve suffering. If so, what is the moral basis of this duty? Jeffrey Kahn offers an answer without a strong moral basis. Nicholas Agar says, "Jeffrey Kahn argues that some genetic conditions can be seen as 'on-balance harmful', bringing with them a duty of treatment [due to the principle of nonmaleficence]." ²⁴⁰ The Western arguments of this sort only assume that it is our duty to do so. But why is it our duty? Like Kahn, one may answer because of the principle of nonmaleficence. But why does this principle make it a duty for us? Most philosophers don't consider this question a problem. For example, consider Beauchamp and Child's book, *Principles of Biomedical Ethics*. There is no discussion of this enquiry. Even worse, they devote their entire book mostly to four moral principles: autonomy, nonmaleficence, beneficence, and justice. They mention virtue, including compassion, in their last chapter for only 41 pages out of 526 pages. Principle vs. virtue— which is more important, fundamental, or effective? This is a very complicated issue because it depends on many factors. Principles are effective in guiding people but not in the result. Virtues are good and have strong motivations, but they are vague and not effective in guiding people. In my opinion, virtues should be the foundations of these principles. However, today's trends ignore this and we instead focus mostly on principles. Allen Dyer points out that justice rather than beneficence or nonmaleficence is the primary principle for guiding medical

²⁴⁰ Ibid., pp. 7-8.

ethics. In my opinion, this is even worse because beneficence and nonmaleficence are much closer to virtues than justice. So this may not be a good thing for the biomedical community; for instance, it is not good for the doctor-patient relationship that some bioethicists and medical doctors (e.g., Michael Makover) discuss.

A third problem with regard to Buchanan and his associates' argument based on current medical practices is as follows. We don't think that current medical practices are all wrong and unethical, nor do we think that they are all right and ethical, especially when their primary considerations are cost-effectiveness, medical effectiveness, and profits. These are based on a utilitarian (and teleological) approach. A common and serious problem with utilitarianism is that it does not take justice into consideration. Since Buchanan et al. offer their argument based on justice as fair equal opportunity, they should not agree fully with current medical practices without any reservation. For instance, they should not agree about the following case. Michael Makover offers a real case (p. 155). A dermatologist requested approval from a patient's HMO to remove some benign-looking scalp lesions. And as a precaution, the dermatologist also wanted to send them to a pathologist for review and for detection of any signs of cancer. However, the HMO approved only the surgery but not the pathology review because it would cost more money. Was the HMO's decision ethical or right? Most people wouldn't think that it was if the review was necessary.

In addition, several authors strongly criticize current managed health care as primarily concerned with costs and profits. For instance, Eric Cassell, Charles Dougherty and Ruth Purtilo, David M. Frankford, and Michael Makover.²⁴¹ Makover even predicts that managed health care will disappear. Therefore, it is very questionable that current medical

²⁴¹ Cassell (2000: p. 19), Dougherty and Purtilo (1995: p. 432), Frankford in Erik Parens (1998: pp. 70-94), and Makover (1998: pp. 19-21).

practices are ethically justified. However, this is not what Buchanan et al. think. They suggest that if a practice is covered by medical insurance, it is ethical, as in the case of unwanted pregnancy. Since the unwanted pregnancy is covered, it must have an ethical justification. According to Buchanan et al., the ethical justification is the equality of women resulting from normal functioning rather than disease or impairment.²⁴² Is this right? I don't think so for the reasons presented.

Fifth and finally, the reason why the distinction is arbitrary is that Buchanan and his associates respond to the wrong question: Why ought we to do genetic therapy and enhancement? As I mention in Chapter 1, if they ask a prior and more fundamental question, "Why do we want to do genetic therapy and enhancement?" they should realize that we are able to provide two different bases for genetic therapy and enhancement. Bodhisattva's compassion and justice as fair equal opportunity are two possible bases. There are other bases that we can use. But as I will argue, these two are the best.

V. Conclusion

In this lengthy and the most important chapter, I argue that Buchanan's and other philosophers' arguments against a moral distinction between genetic therapy and enhancement are wrong. I will identify six reasons why the moral arbitrariness problem is so complicated. I believe that after examining these six reasons, we will have a better idea about its complexity and should be able to clarify this issue. Then, we can draw a moral line based on two different bases. If I succeed, I believe that it will have some ethical influence on how we should act or think about genetic intervention.

There a moral distinction between genetic therapy and enhancement and we can draw a moral line between them. However, this does not mean that there are no moral problems

²⁴² Ibid., p. 120.

with regard to genetic intervention. If I am right, the moral problems will mostly occur with respect to enhancement. Buddhists and I will argue that genetic therapy is obligatory and thus permissible, but genetic enhancement is morally neutral and thus could be either permissible or impermissible. Buddhists base the former claim on two reasons: first and most importantly Bodhisattva's compassion, and second, we have not seen good arguments or examples against genetic therapy. Therefore, the moral problems will mostly be on the side of genetic enhancement. To some extent, other philosophers have argued for the same point. For instance, Nicholas Agar and Nils Holtug argue that some forms of enhancement are permissible. Most philosophers generally don't think that genetic therapy will raise any new ethical concerns. For instance, Edward Berger and Bernard Gert write, "It is generally agreed that gene therapy for recognized genetic disorders, involving gene transfer into somatic cells, poses no new ethical problems. One important reason for this is that it simply an extension of commonly used medical procedures."²⁴³

To see how our claim is possible, we need to ask this question: Why do we want to do genetic intervention? And then we ask: Why ought we to do genetic intervention or how can we justify it? Most philosophers approach the moral distinction problem without asking the first question and go directly to the second one.²⁴⁴ The first question is very important because it centers on the moral difference between genetic therapy and

²⁴³ Ibid., pp. 669-670. However, they say that this won't be the case for germ-line transformation that could be therapy or enhancement.

²⁴⁴ Jackie Leach Scully approaches this problem by asking a different question that is similar to mine but it is still not the right one. She asks, "How on earth did we get here?" and proposes a "reverse ethics" that "would avoid, at the outset, taking any evaluative stance on the rights or wrongs of either boundary, but would note its existence and then pay serious attention to the factors that put it there (p. 201)." She suggests that we shouldn't approach this problem by asking this question, "How far can we go?" This question supports my point. For it seeks to justify why we ought to do genetic intervention and how far we can go.

enhancement. Virtually, all philosophers and bioethicists agree that the goal of genetic therapy is to cure or prevent disease (even though there are big debates about what counts as disease) or to relieve suffering, and thus we can use Bodhisattva's compassion as a moral basis to justify genetic therapy. In contrast, genetic enhancement without the intentions or purposes of curing or preventing disease is merely to improve or enhance our healthy traits or capabilities, and thus it is our pure craving (or desire) for wanting genetic enhancement. Anderson and Gardner also touch this point.²⁴⁵ Unfortunately, they do not go further and develop an argument for the moral distinction by using desire or craving as the basis for genetic enhancement.

There might be two concerns about the Buddhist moral distinction. First, as stated above, what counts as disease is still very controversial. How can the Buddhist moral line accommodate this problem? There are two solutions. (1) Recall Berger and Gert's idea of "malady." They suggest that we use "malady" to replace the concept of "disease." "Malady" cannot be based on craving or desire, according to its definition. If so, therapy defined by "malady" cannot be based on craving or desire either. Thus, therapy is distinguished from enhancement that is based on craving. What about the moral distinction? The answer is easy. Since Buddhists use compassion to justify therapy, all therapy is obligatory and thus permissible. But enhancement based on craving is morally neutral. Therefore, the Buddhist moral line is a clear one in this case. (2) Given that Berger and Gert's "malady" is not widely accepted, the first solution may lose its legitimacy. The second solution will be similar to the first but without adopting the concept of "malady." In other words, I will later argue that the Buddhist moral line can "dodge" the problem of defining disease. Second, in a sense, therapy and enhancement are things we desire. So

²⁴⁵ Anderson (1985: p. 288) and Gardner (1995: p. 66).

what is the difference? The important difference is this: therapy has a morally strong justification (e.g., Bodhisattva's compassion) but enhancement may not have any. For our desire or craving has no truly moral status. Thus, genetic enhancement based on solely desire or craving is morally neutral, which means that it could be permissible or impermissible depending on whether there is justification or not. When David M. Frankford summarizes Eric Juengst's article, he also suggests the similar idea that enhancement could be permissible or impermissible. Frankford writes, "In the first sphere, we use the treatment/enhancement distinction to delimit the nature of professional obligation. 'Treatments' are interventions that professionals are obligated to perform; 'enhancements' are activities that are not required but either permissible or forbidden."²⁴⁶

Therefore, the moral line we draw is compatible with most philosophers, such as Nils Holtug, David Resnik, and Buchanan et al. who argue that some forms of genetic enhancement are not inherently immoral. We may use the principle of justice as fair equal opportunity to justify genetic enhancement. Or we can use other intrinsic values, e.g., Holtug's suggestion of risks and benefits or well-being, as bases to justify enhancement. Or one can reject genetic enhancement. According to Nicholas Agar, Patricia Greenspan argues that genetic enhancement of our character traits will undermine Aristotelian values of how human traits should become. That is, human traits should be, to a large extent, "the results of rational evaluation and training by the agent." For instance, if we allow the enhancement of our traits, then we would value them like being thin, which can be controlled by shrinking the stomach (p. 9). I will give more details when I discuss the Buddhist and my approach. I present Table 3 and 4 to summarize Buchanan et al.'s, the Buddhist, and my proposal respectively.

²⁴⁶ Erik Parens 1998, pp 71.

Table 3	Genetic Therapy		Genetic Enhancement	
	Buchanan et al.	Bodhisattva	Buchanan et al.	Bodhisattva
Obligatory/Nonobligatory	Not necessarily obligatory	Obligatory	Not necessarily obligatory	Not necessarily obligatory
Permissible/Impermissible	Not necessarily permissible	Permissible	Not necessarily permissible	Not necessarily permissible
Is there a moral distinction?	Bodhisattva: Yes, there is a moral distinction. Buchanan et al.: Not really. The distinction is arbitrary. Even if there is such a distinction, it is only useful and we shouldn't expect too much of it (p. 152).			

Table 4	Genetic Therapy	Genetic Enhancement
What justification do we use?	Use Bodhisattva's compassion	Use Buchanan et al.'s justice
Obligatory/Nonobligatory	Obligatory	Not necessarily obligatory
Permissible/Impermissible	Permissible	Not necessarily permissible

Why is this issue so complicated? Eric Juengst identifies three accounts: the account of disease, the account of medical goals, and the account of normal functioning (p. 32).²⁴⁷

Although Juengst offers three accounts, actually, he just circles around one central idea: the definition of disease. First, the account of disease. Juengst argues that this approach won't

²⁴⁷ Erik Parens, ed., 1998.

be able to resolve the arbitrary distinction problem for two reasons. (1) It is hard to distinguish treatment from enhancement, especially when an intention (or purpose) of prevention is involved.²⁴⁸ (2) If (1) is true, then it leads to another problem—abuse. Since there is no clear distinction between treatment and enhancement, the medical profession has the power to decide. And this could easily lead to abuse (p. 34). Hence, this approach is problematic.

In my opinion, Juengst's (2) may be a minor problem for two reasons. First, the concern about abuse could be applied to all kinds of medical and social issues, e.g., nuclear weapons or other slippery slope arguments. But we somehow can manage or prevent this kind of problem from happening or being worse. Besides, Berger and Gert suggest that there may be only few cases (e.g., Torres's MDR and Moseley's example) in which it is hard to discern whether they are treatment or enhancement. Second, Juengst's argument focuses on genetic enhancement rather than the distinction between therapy and enhancement. Therefore, this is a minor concern.²⁴⁹

Juengst's second reason for the complexity of the moral distinction is to take (2) to heart and extrapolate from it. He argues that if (2) is true, there is no appropriate distinction at all. The medical profession and patients are free to decide what counts as disease or what genetic intervention counts as treatment or enhancement (p. 34). Juengst rejects this argument because it is useless for policy purposes and thus it is a very weak argument. No philosopher, even including Buchanan et al., will object to his criticism. For what Juengst argues against is value-relativity about normativeness that all rational people won't accept.

²⁴⁸ Ibid., p. 33 and see his example of heart disease.

²⁴⁹ If so, Buchanan et al.'s argument, which says that the moral line is only useful to prevent abusing medical resources, may not be so important and significant at all.

As stated, since (2) is only a minor concern, we don't know why Juengst makes it into such a big deal and discusses it twice.

Juengst's third reason is based on Sabin and Daniels's account of normal functioning. Sabin and Daniels argue that we can draw an appropriate line if we think from the point of how to provide medical services justly to people. They think that this is possible because their definition of "species-typical functioning" not only is a statistical notion but also implies a theoretical account of the design of the organism. Therefore, Sabin and Daniels conclude that any genetic intervention to expand an individual's capacities beyond "species-typical functioning" would count as medically unnecessary enhancement (p. 35). Juengst refutes their approach because of their two weak assumptions: first, there is a theoretical account of the design of the organism, one that is clear and robust enough to explain "species-typical functioning" in these enhancements of morality, intelligence, and social grace, and second, there is a fixed genetic base-line that will constrain one's normal opportunity range. Juengst rejects both assumptions. First, except for the design of reproductive fitness, there is not much consensus on what counts as functional design of organism by modern biology. For instance, we will never feel enough of our moral, intelligent, and spiritual experiences. Therefore, it is wrong to assume that there is a theoretical account of optimum design of an organism. Second, Sabin and Daniels cannot say that there is a genetic fixed base-line for us to distribute genetic enhancement, which then leads to an injustice problem. For instance, if we follow a statistical norm to distribute genetic enhancement, those above the norm will be denied access. If we set the ceiling at those who are well-off, then those less fortunate will have disproportionate resources. We will have a problem of injustice either way. Therefore, Juengst concludes that Sabin and Daniels's approach is wrong.

Although Juengst's argument may have persuaded Daniels to give up his claim that his theory can morally distinguish treatment from enhancement, Juengst actually only touches one important aspect of this complicated problem, namely, how to define "disease" or "species-typical functioning." Juengst's second account is extrapolated from his first, and his third one focuses mostly on a justice issue rather than the distinction problem. So he points out only one central problem—the issue of defining disease. In comparison, David Resnik above offers one more: the goals of medicine, which is related to my (4) below.

To understand this very perplexing distinction problem more thoroughly, I identify six reasons and only the second is similar to Juengst's. The six reasons are: (1) there is a wrong assumption, (2) how we define disease, (3) we ask the wrong question, (4) the factor of our intentions or the purposes or goals of medicine, and (5) the complication of the technical classification between genetic therapy and enhancement, and (6) the confused relation between "can" (or "cannot") and "ought to" (or "ought not to").

First, most philosophers who argue that there is a moral distinction hold a strong but mistaken assumption: all forms of genetic therapy are permissible (let's call this proposition A) and all types of genetic enhancement are impermissible (let's call this proposition B). David Resnik argues that this is one of Anderson's two questionable assumptions. Juengst also points out this wrong assumption.²⁵⁰

To see Anderson's and other philosophers' arguments for or against the moral distinction in the logical terms, let's call this proposition—there is a (clear) moral distinction—C. Therefore, what Anderson assumes and argues is this: if (A & B), then C (in logical symbols: $(A \ \& \ B) \supset C$). But there is another material implication for those who argue against the moral distinction. That is, if there is a (clear) moral line between genetic

²⁵⁰ Erik Parens, ed., 1998, pp. 31-32.

therapy and enhancement (proposition C), then genetic therapy is permissible and genetic enhancement is impermissible (proposition A & B); i.e., if C, then (A & B) (in logical symbols: $C \supset (A \& B)$). Combining these two material implications, we have: (A & B) if and only if C (in logical symbols: $(A \& B) \equiv C$). Unless “ $C \supset (A \& B)$ ” also holds, one cannot just negate (A & B) to get not C (in logical symbols: $\sim C$). For if only “ $(A \& B) \supset C$ ” holds and if we negate (A & B), this does not lead to $\sim C$. This is so-called the fallacy of denying the antecedent.

We can now examine Buchanan and others’ arguments against the moral distinction. Buchanan et al.’s and Resnik’s argument are this: if not all forms of genetic therapy are permissible and not all types of enhancement are impermissible, then a clear moral line cannot be held (in logical symbols: $(\sim A \& \sim B) \supset \sim C$). Their argument is equivalent to “ $\sim(A \vee B) \supset \sim C$ ” in logical symbols. So their argument is not valid against Anderson’s. For the sake of argument, suppose that “ $\sim C \supset (\sim A \& \sim B)$ ” also holds. Then, what they argue against is this: (A $\vee$ B) if and only if C (in logical symbols: $(A \vee B) \equiv C$). Recall Anderson’s argument: $(A \& B) \equiv C$, if “ $C \supset (A \& B)$ ” also holds. So they argue against a much “weaker” moral line than Anderson’s. In other words, it is much easier for them to argue against “ $(A \vee B) \equiv C$ ” than “ $(A \& B) \equiv C$ ” because “(A & B)” is a much stronger claim than “(A $\vee$ B).” Hence, Buchanan’s and Resnik’s argument is invalid against Anderson’s. In spite of this, if they don’t agree with this logical analysis, then they have to explain to us what assumption they try to refute and then how they can get their consequence. That is, how can $(\sim A \& \sim B)$ lead to $\sim C$? The burden is on Buchanan et al. and Resnik.

Holtug argues that enhancement isn’t inherently wrong and thus, the moral distinction cannot be defended. Also, Juengst proposes that some types of enhancement are

permissible, and therefore, it is arbitrary to demarcate the distinction between treatment and enhancement. Although I agree with them, their argument does not show that the moral line between genetic therapy and enhancement is arbitrary. For all they have shown is that enhancement is not inherently wrong. This approach has two problems. First, this proposition ($\sim B$) alone is not sufficient to conclude the claim that the moral line is arbitrary. Holtug's and Juengst's arguments are even weaker than Buchanan et al.'s and Resnik's. Second, what assumption do they try to deny? If it is Anderson's, their proposition should be " $(\sim A \vee \sim B) \supset \sim C$." However, there are two problems with this approach. (1) Holtug and Juengst must hold " $C \supset (A \& B)$," which is equivalent to " $(\sim A \vee \sim B) \supset \sim C$." (2) They need to prove that some forms of treatment are immoral ($\sim A$) and the disjunction of $\sim A \vee \sim B$. Otherwise, they cannot claim that the moral distinction is arbitrary. Hence, Holtug's and Juengst's arguments are weaker and more problematic than Buchanan et al.'s and Resnik's.

Anderson's assumption is not right because it is too simple and too strong as shown above. Buddhists and I agree with Anderson that treatment is permissible but we don't accept his assumption about enhancement because enhancement is morally neutral. Based on Western ideas, in general, there is no middle ground for both genetic therapy and enhancement, which means that none of them can be morally neutral. Juengst's term may come very close to this idea that enhancement is morally neutral. He suggests that enhancement is "morally suspicious" since it depends on the goals and values of our activity.²⁵¹ His term "moral suspicious" could mean "moral neutral." But why is it "morally suspicious"? Juengst does not offer any explanation. In contrast, the Buddhist approach could offer a basis, human craving, to show why genetic enhancement is morally neutral. For human craving has no truly moral status, and if it is the basis of genetic

²⁵¹ Eric Parens, ed., 1998, p. 31.

enhancement, then genetic enhancement has no truly moral status and thus is morally neutral. Therefore, Anderson's assumption is false since genetic enhancement is morally neutral.

Now a more interesting question is, "Can Buchanan et al.'s and Resnik's argument undermine the Buddhist and my claim?" I believe not for two reasons. First, our assumption is different from Anderson's. Our assumption is A&N where N is the proposition: genetic enhancement is morally neutral. Their objections do not apply to our argument. Besides, their argument is invalid against Anderson's. Second, we don't think that they offer any good examples against proposition A, which is the only proposition relevant to our argument. Hence, it is difficult to see how their argument can undermine our claim.

Second, I have discussed my reasons (2) and (3) already, (4) a little, and will discuss (5) here. Some forms of genetic therapy involve the intention or purpose of enhancement and some types of genetic enhancement involve the intention or purpose of therapy. Recall Ray Moseley's example. It is a form of genetic therapy with the intention of enhancing future offspring. And Torres's MDR example is a form of genetic enhancement with the purpose of preventing disease. Therefore, we cannot consider it merely a technical distinction when we identify genetic intervention. We need to consider why we want to do genetic intervention (i.e., our intentions) and what its purposes are. Torres emphasizes the latter and I point out the former.²⁵² This is how (4) and (5) complicate the moral problem.

²⁵² Whether intentions and purposes are the same depends on whether they are good or bad. For instance, consider eugenics. Under some circumstances, the intentions and purposes of eugenics may be the same. But Nazi tended to have bad intentions to do it and thus it resulted in a terrible consequence, the Holocaust. If we are motivated by the true welfare of human beings, the intentions and purposes of our actions may be the same and their results may not be bad at all. Thus, eugenics should not be condemned so much if we intend to

Finally, regarding (6), it is an interesting issue, which I mention above and also in Chapter 1 and 2. But there is still more to discuss. This will be important for the Buddhist and my approach. To me, Rosenberg's principle "ought implies can" discussed in Chapter 1 is an epistemological or moral "can" rather than a practical or resource related one. In my opinion, there are three kinds of "can" or "cannot": (a) epistemological or moral, (b) technological, (c) practical or resource related.

An epistemological or moral "can" means that we recognize or perceive that an action X is morally required but we may or may not have the technology or resource to actualize X. For instance, society ought to provide equal access to health care for everyone. But because of resource limitations, society is not able to perform such a moral requirement. Another example: doctors believe that finding a cure for cancer is one of their moral obligations. However, they may not be able to fulfill such an obligation because the right cure may not have been found, the right technology has not been developed, or there are not enough resources.

A technological "can" means that X is technologically possible. A practical or resource related "can" means that X is practically or in light of resources doable. (a) is the most confused and problematic one. Some philosophers, e.g., Rosenberg, think that it has a necessary connection to (c) or (b). That is, if an action X is a moral "can," it means that X is doable practically or technologically. Otherwise, we cannot call it a moral "can." This is what Rosenberg proposes in "ought implies can," which seems not right. Both (a) and (b) are constrained by (c), which means that both (a) and (b) cannot be implemented in reality or in practice without the doability of (c). By the same token, (a) may be constrained by (b). As shown above, since there are many counterexamples against Rosenberg's principle due

do good.

to resource limitations, Rosenberg's "can" cannot mean the resource related one. Now the question is: Which "can" does he have in mind? He does not say anything about this. I would say that it is (a) since (a) is what "ought" intuitively implies. Charles Dougherty and Ruth Purtilo also point out this idea but they call it a "psychological can." They write, "As a rule, a moral 'ought to' entails a psychological 'can.' If some physicians simply cannot be compassionate, what can it mean to expect that they ought to be?"²⁵³ Besides, even if Rosenberg has the technological "can" in mind, this still does not support his proposition. For (b) is still constrained by (c). Therefore, Rosenberg's claim is questionable.

Now let us come back to our topic. Buchanan and his co-authors argue that the moral line does not match the medical and non-medical boundaries of obligation/nonobligation and permissibility/impermissibility because justice as fair equal opportunity only requires us to treat those most urgent cases due to resource limitations, which is not right according to Holtug. There is another way to see why their argument is wrong. They appeal to only the practical (or resourceful) "cannot" (or "can") rather than the moral or technical one. The resource related "cannot" is valid only when being used to constrain (a) and (b). The resource related "cannot," by itself, is not a valid reason to support or object to any ethical arguments. In other words, the resource related "cannot," by itself, should not be used to define morality. For instance, consider Buchanan et al.'s argument. It is not right to say that we don't have any moral obligation to treat those less urgent needs simply because of resource limitations. This is not a humane and moral claim. Therefore, a resource related "can" or "cannot" by itself, should not cause the moral distinction problem. Buchanan et al.'s argument against the moral distinction is wrong in this regard.

We can now draw a moral distinction. We can use Bodhisattva's compassion as the

²⁵³ Dougherty and Purtilo 1995, p. 430.

basis for genetic therapy and human craving for genetic enhancement. Based on these two grounds, Buddhists can draw a moral line for genetic intervention as a whole: as long as X, a genetic intervention, has the ingredient of therapeutic intention or purpose, we ought to consider X no matter whether X is therapy or enhancement. There are two significant points with the Buddhist moral line. First, it is significantly different from Anderson's. The aim of the Buddhist line is to distinguish a moral distinction for genetic intervention as a whole, not merely to draw a strictly moral distinction between genetic therapy and enhancement. For based on the Buddhist moral line, all types of therapeutic enhancement are also permissible, e.g., Torres's example. Second, the moral basis for genetic therapy must be Bodhisattva-like compassion, which is unconditional, and deeper and broader than the Western account of compassion. If not, a moral line cannot be held. This will be one of my principal focuses in the next chapter.

So what can the Buddhist moral line say about Moseley's and Torres's example, and Buchanan et al.'s hard cases? We ought to accept both Moseley's and Torres's examples since they are either to cure or to prevent disease. However, this won't be the case for Buchanan et al.'s example of Johnny and Billy. Since Billy has nothing therapeutically wrong (and thus it is Billy's desire or craving to get taller), we have no obligation to enhance his height unless we can (or want to) use different moral bases to justify Billy's craving for height. However, we do have the obligation to treat Johnny since he has a tumor that would threaten his life. By the same token, we are not obliged to treat the Unhappy Husband and the Shy Bipolar unless we can identify that they have therapeutic needs. How to identify those therapeutic needs could be problematic but the burden should not be on the Buddhist line. Instead, the medical and biological profession should bear the burden.

Then, how can the Buddhist line respond to Buchanan et al.'s first and second reason

against the moral line? First, are Bodhisattva's compassion and human craving good bases for the moral distinction? I think so to some extent. For virtually these two bases are aspects of human nature and thus are universal values. Charles Dougherty and Ruth Purtilo suggest that compassion is universal. They say, "More to the point is the observation that the ability to be compassionate, unlike warmth or humor, is not a personality trait that some have and some do not. Rather it is a human aptitude that virtually all persons have."²⁵⁴ Regarding craving, we obviously have many kinds of craving all the time.²⁵⁵ Therefore, these two bases are universal and should not have a value-relativity problem. Even if these two bases might have this problem, it should be less serious and problematic. The question, then, is, "Are these two bases good enough to resolve the moral arbitrariness problem?" I believe so as shown above.

However, there might be a concern about the use of craving as a basis. Since craving has no truly moral status, the Buddhist approach may be weak or vague in justifying genetic enhancement. Therefore, I propose that we use Buchanan et al.'s justice as fair equal opportunity as the basis to justify genetic enhancement for three reasons. (1) Justice as fair equal opportunity does have a stronger moral status than craving. (2) As Allen Dyer points out, justice has become the primary principle in guiding ethical issues (although I don't quite agree with this trend). (3) Justice is more appropriate to justify genetic enhancement than other values or norms, e.g., human well-being and dignity, or the principle of risks and benefits. However, there might be a concern about my approach. Is it

²⁵⁴ Ibid., p. 431.

²⁵⁵ We may argue that justice as fair equal opportunity is a universal value too. I have no objection to this. But justice does not seem to be a characteristic of human nature. We need to nurture and develop that conception more than compassion and craving. For instance, a social justice system is not that common in the third world and in some poor countries yet. But we can observe compassion and craving throughout the whole world.

consistent or systematic? Although it may not be systematic, I don't see any inconsistency. I will explain this in Chapter 5.

Second, does the Buddhist distinction map onto the obligatory/nonobligatory boundaries of medical and non-medical services? I believe that it maps onto the boundaries of a medical context but I am not sure about the non-medical one. Buchanan et al.'s second objection seems unfair. For I argue that the purpose of the moral distinction is supposed to resolve moral issues in the medical context first. Besides, the moral issues in the non-medical context should belong to a different domain—business ethics. Even so, I believe that the Buddhist distinction is applicable to both contexts with some reservation. Consider Buchanan and his co-authors' two reasons against the moral line: the resource limitations and an unqualified claim. As shown above, the first could be easily countered. The second is more challenging. Buddhists do claim that we can provide a moral distinction for the medical context. But does it also fit with the boundaries of non-medical one? Since I don't think that Buchanan et al.'s example of unwanted pregnancy is adequate to support their argument, and since I have not seen other good examples against genetic therapy, there may not be any serious problems for the Buddhist moral line. But I could be wrong.

Although the Buddhist distinction can resolve most issues of moral arbitrariness, there is still a concern about the impact of the definition of disease on the Buddhist and my approach. If we accept that the goal of genetic therapy is to cure or prevent disease, then the problem of defining disease is inherent in the distinction problem. For how can we discuss the moral distinction between genetic therapy and enhancement without assuming that there is a (clear) definition of disease, if the aim of genetic therapy is to treat disease? This is one of Anderson's problems that David Resnik points out. However, if I am right, this

issue should not undermine the moral line that Buddhists draw. First, it is impossible to define disease clearly as discussed in Chapter 2. If we have to use the definition of disease, the Buddhist approach can supplement its inadequacies. For if the definition of disease is not clear enough for us to draw the line, we can use Bodhisattva's compassion as the second criterion or defense to help us draw the line. If this second criterion is still not clear enough, we can appeal to the third criterion—craving. We ask whether genetic intervention is purely our craving or it does have a therapeutic intention or purpose. We should be able to decide on the moral line through this process. As far as I can see, if we use Bodhisattva's compassion and craving as our bases for the moral line, it does not matter whether genetic intervention is a disease or not. I will explain more how this is possible. Second, in the Buddhist approach, to a large extent, the burden of defining "disease" will be on medical doctors and biologists. And defining disease should not be morally related, which means that it should be conducted based on scientific and statistic methods. The moral problems arise only when we try to incorporate it into the discussion of genetic intervention. Therefore, the problem of defining disease (or therapy) should not undermine the Buddhist approach. Again, to a large extent, it is up to biologists and medical scientists to define disease as long as they don't define it by using a value-relativity approach, which defines disease based on our norms, values, and cultures. But by no means does this mean that the definition of disease is not important. All that I have been trying to say is that how one defines disease should not undermine the moral line that Buddhists draw. If so, the Buddhist approach can avoid Anderson's two problems: assuming that there is a clear definition of disease and that genetic enhancement is inherently immoral. First, in the Buddhist approach, it does not matter whether we have a clear definition of disease or not, and second, the Buddhist approach does not argue that genetic enhancement is inherently

wrong.

Third, contrarily, the Buddhist approach could offer a different perspective. David Resnik points out that if we use the goals of medicine to solve the distinction problem, it won't work. Eric Juengst also suggests a similar idea (p. 29).²⁵⁶ Juengst also notes that the most common way to approach the distinction problem is from the perspective of disease.²⁵⁷ However, he argues that this approach will also fail since any definition of disease is controversial. For instance, according to Eric Juengst, Sabin and Daniels suggest that it may be fruitless to draw a line by using the concept of disease (p. 35).²⁵⁸ Therefore, we need to approach the arbitrariness problem from a different perspective. The Buddhist approach can offer such a different perspective: we should look at this problem on the basis of treatment rather than the goal of therapy or the definition of disease. That is, we use Bodhisattva's compassion as the basis to justify why we are obligated to offer treatments. This approach is better for two reasons: (1) it avoids assuming a clear definition of disease, and (2) thus, it doesn't matter whether genetic intervention is a disease or not as long as Bodhisattva-like compassion makes us feel that we ought to provide assistance for that genetic intervention. However, this "ought to" does not mean that we can. It is an epistemological or moral "can" rather than a resourceful "can." So giving a clear definition of disease should not be a requirement on the Buddhist approach.²⁵⁹

²⁵⁶ Erik Parens, ed., 1998.

²⁵⁷ Ibid., p. 34.

²⁵⁸ Ibid.

²⁵⁹ Westerners might ask, "What is the difference between the Western and the Buddhist approach?" For westerners can argue that it is the goal of therapy to relieve suffering and that we can also use the Western idea of "compassion" as its basis. So what is the difference? The difference is that Bodhisattva's compassion is broader and deeper than the Western one. Therefore, it makes a big difference to resolve the distinction problem. I will give more details in Chapter 4.

Let us consider another situation to which the Buddhist approach can offer a solution. Some philosophers argue that genetic enhancement will be eventually like cosmetic surgeries that are accepted by most people. What can the Buddhist distinction say about this? The answer is easy. All pure cosmetic surgeries are our desire. They have no truly moral status. They can be permissible or impermissible. Eric Juengst suggests the same answer: “Using this tool, enhancement interventions like cosmetic surgery can still be permissible to perform as physicians, but also permissible to deny.”²⁶⁰ A more complicated situation is the case when someone claims that he or she will suffer a disadvantage without cosmetic surgeries. For instance, a woman claims that she needs a breast implant to feel confident so that she can compete equally with others. In this scenario, whether she needs the breast implant and whether she will suffer a disadvantage will depend on some psychological diagnoses. It could be simply her desire to get the breast implant. So we are not obliged to assist her since there is no therapeutic purpose or intention. The Buddhist bases for drawing the moral line are clear: Bodhisattva’s compassion and desire. All forms of genetic therapy are allowed due to Bodhisattva’s compassion and all types of desired enhancement without any therapeutic intentions or purposes are morally neutral and thus have no truly moral status.

In addition, can the Buddhist distinction pass Juengst’s epistemic criterion? I believe so. It is not so difficult to distinguish a genetic intervention based on our compassion from the one based on our desire. If so, then we should be able to know when we cross the moral line. If genetic intervention comes from our desire, then we need to find a different justification (e.g., justice) for it. If there is none, we are not obliged to it and it may not be allowed. I will discuss the Buddhist approach more fully in Chapter 4. Also, can the Buddhist and my

²⁶⁰ Erik Parens, ed., 1998, p. 44.

moral distinction pass those four usefulness tests that Buchanan et al. suggest? I will discuss this question in Chapter 5.

There may be a serious worry if Buchanan et al. and David Resnik are right in saying that not all forms of genetic therapy are morally acceptable. Edward Berger and Bernard Gert also raise the same claim but do not argue for it (p. 675). The Buddhist (and my) approach indicates that all forms of genetic therapy are morally required and thus permissible. Therefore, if these philosophers were right, it would undermine the Buddhist (and my) approach in this respect. However, their argument will not succeed for three reasons. First, as I argue, Buchanan and Resnik ask the wrong question to argue against the moral line. If so, it is wrong to say that not all forms of genetic therapy are permissible. Second, we don't really know whose (or what) moral line they oppose. If it is Anderson's, then their claim is logically disregarded. For Anderson's assumption is false. Berger and Gert only raise the concern but do not argue for it. So we don't know what they have in mind against genetic therapy. Third, they don't offer any good reasons and examples to support their claim. Therefore, their argument is invalid to undermine the Buddhist approach.

Although the Buddhist approach seems so good, there is a minor concern: it does not fit the trend of using ethical principles to guide our moral dilemmas. Justice is the dominant principle today. One of the reasons why we tend to emphasize the use of a justice principle is that justice has a greater influence than virtue (e.g., Bodhisattva's compassion). In a sense, justice is from the perspective of society and virtue is from the individual perspective. Since society can make rules and policies collectively to regulate people's moral obligations (but not vice versa), justice has a much stronger influence than virtue. For instance, if we can claim a right to something X and if society couldn't provide enough

or adequate means or opportunities for us to get X, it is unjust that we should not have X. But we cannot say the same thing about any virtue. This is its advantage and this is why I choose justice as fair equal opportunity as the basis to justify genetic enhancement. However, this advantage may come with a risk of possible abuse. It seems very easy to claim a “right” for most things, e.g., the rights of an unborn child and the rights to have free air and space, etc. Besides this abuse problem, there is another big concern: if society couldn’t provide enough or adequate means or opportunities, how can we justify why society couldn’t do it? For instance, consider Daniels’s theory of a right to health care. If his theory is correct and applicable, how can we explain that the USA still couldn’t provide an equal (or at least decent minimum) access to health care? Appealing to the limitation of resources is not a satisfactory answer. Therefore, a justice approach will definitely have its own problems.

There may be a serious concern about how Buddhists (and I) can claim that all forms of genetic therapy are obligatory and thus permissible. (Note: again, this does not mean that we are able to provide all forms of genetic therapy.) Based on the Western philosophy, it is difficult to understand how. Buddhists can make such a claim because of two essential ideas: (1) life is intrinsic suffering and (2) Bodhisattva’s compassion that is broader and deeper than the Western one. I will discuss this issue in the next chapter.

Finally, I have analyzed the Western approach for genetic intervention so far. I believe that I have offered some insights into the relevant problems and concerns about genetic intervention. In the next chapter, I would like to offer the Buddhist approach that provides a different understanding of genetic intervention.

Chapter 4: The Buddhist approach

After discussing the Western approach to genetic intervention and raising two important problems, especially the problem of the morally arbitrary distinction in Chapter 3, I would like to offer a different perspective: the Buddhist aspect. To a large extent, the Buddhist approach will undermine the foundation of the Western idea of justice since westerners do not accept that everyone deserves that with which he or she is born. **In the Buddhist** view, we deserve what we have and what we are in this life. Because of the law of karma, we are the karmic consequences of what we did in our past life (or lives). If we are born normally and in a rich family, it is because we did lots of good deeds in our past life (or lives). If, unfortunately, we are born in a poor family and have some disabilities or diseases, it means that we did lots of bad deeds in our past life (or lives). We are the ones responsible for all our social and natural inequalities. If so, we shouldn't complain and claim any rights to natural and social unequal opportunities. Society doesn't really have any obligations to equalize those inequalities. It is not unjust if government wouldn't (or cannot) do anything about them. At best, society is only to help us in whatever and whenever it can. So the Buddhist approach reduces the concern that government is getting bigger and bigger. Since this is not my main focus, I will not go further.

Therefore, there may be some incompatibility between the Rawlsian and the Buddhist approach. For instance, Tim Mulgan argues that John Rawls's theory of justice is inconsistent with the Hindu and Buddhist doctrine of rebirth (p. 3). However, Mulgan's argument is not quite right since his conception of rebirth is strange and quite different from Mahayana Buddhism on which I will focus.²⁶¹ Mulgan assumes that there is a soul or self and that all souls or selves continue their existence forever (p. 6). If so, this is not true

²⁶¹ His idea is close to Tibetan Buddhism. See some discussion below.

for Mahayana Buddhists. Mahayana Buddhists believe in “no-self,” which will be discussed later. Except for Mulgan’s argument, I haven’t seen any Western literature discussing this matter. Mulgan also points this out: “I have been unable to locate any such discussion. The silence suggests that the problems plaguing present-day Western theories of intergenerational justice do not arise in a system founded on the Rebirth View.”²⁶² Since his view of rebirth is not Mahayana Buddhism, Mulgan’s argument may not undermine my approach, which will be discussed in next chapter.

In this chapter, first, since there are some differences between the Western idea of justice and the Buddhist approach, I will explore the notion of “desert.” Second, I will introduce four doctrines of Buddhism and explain Bodhisattva Practice. Third, I will elucidate how Bodhisattva Practice can be applied to genetic intervention and will raise some concerns.

I. The notion of “desert” for genetic (or social) endowments

Before discussing the Buddhist approach, it is necessary to mention an important and intriguing difference between the Western and the Buddhist view regarding whether we deserve that with which we are born.

In Western societies, justice is necessary because people do not believe that they deserve social and natural inequalities. One of the reasons is that Western people do not believe in karma (and/or rebirth). Rene Querido also suggests so. She writes,

Most philosophies and religions in the West strongly oppose the idea of karma and rebirth; the ingrained materialism of our society denies spiritual values altogether, including ideas of re-embodiment. Moreover, fundamentalist Christian groups reject the notion of reincarnation, mainly on the grounds that it is not mentioned in the Bible. Some people are vaguely familiar with reincarnation and karma in a general way, but do not understand how

²⁶² Mulgan 2002, p. 8.

re-embodiment works or what karma means.²⁶³

This is a morally significant difference between East (or Buddhism) and West. Basically, Buddhists believe that we deserve that with which we are born given the law of karma (LK). For instance, Bruce Reichenbach writes, “The doctrine of karma was introduced to provide a resolution of the problem of the unequal and apparently random distribution of human pain and pleasure, fortune and misfortune.”²⁶⁴ Damien Keown also says so.²⁶⁵ In short, an individual is ultimately responsible for his or her social and natural inequalities given the law of karma.

However, this is not what westerners believe. For example, Christopher Ake thinks of justice merely from the perspective of society. He writes, “Our typical use of the concept of justice is in the evaluation of a society’s institutions, principally its legal, political, and economic institutions. It is these societal institutions from which we chiefly derive, and to which we usually apply, our actual working notions of justice.”²⁶⁶ Based on Western philosophy, it is difficult to see why we deserve that with which we are born, especially when society has the capabilities to intervene about natural assets (or social inequalities). Most Western philosophers think that natural assets are unequal or arbitrary and thus a just society should do something about them. For instance, Eric Juengst writes, “Sabin and Daniels assume that people’s ‘talents and skills’ (read: psychosocial capacities) are inborn, largely immutable, and most often unequal.”²⁶⁷ Norman E. Bowie also points out that it is morally arbitrary to distinguish environmental or social inequalities from natural

²⁶³ Querido ed. 1997, p. ix.

²⁶⁴ Reichenbach 1990, p. 7.

²⁶⁵ Keown 1995, pp. 24-25.

²⁶⁶ Ake 1975, p. 69.

²⁶⁷ Erik Parens, ed., 1998, p. 36.

inequalities in a democratic and just society (p.4). Nile Holtug suggests that since people do not deserve bad genes, society should compensate them by all possible means.²⁶⁸ Holtug also summarizes this point based on three Western ideas: egalitarians, prioritarians, and utilitarians. For instance, the egalitarians believe that we ought to remove inequalities when we do not deserve them (p. 138).

Western philosophers, such as John Rawls, assume that social and natural inequalities are morally arbitrary and focus on how society should provide the means to remove or reduce these inequalities. This kind of argument puts a lot of pressure on society. **Brian Barry** tries to take some burdens off society and argues that natural inequalities may not involve justice as fair equal opportunity.²⁶⁹ However, Barry still assumes that natural endowments are morally arbitrary.²⁷⁰ His argument is as follows. First, if we can accept that people identify their social inequalities as their genuine choices, then there are no fairness issues (p. 41). For instance, consider the fact that there are not many females in the areas of science and engineering. This could be a result of socialization rather than gender discrimination. If so, it is fair that if women genuinely choose not to be in the areas of science and engineering. Second, in the same manner, we can say the same thing about natural inequalities (p. 43). Barry concludes that if people accept their social and natural inequalities as their genuine choices, then they are not being treated unjustly. In a nutshell, Barry argues that people should bear some unequal results that are their genuine choices.

Barry's argument is not a good one for the following reasons. First, even if people identify themselves with some social and natural inequalities (i.e., their genuine choices),

²⁶⁸ Holtug 1999, p. 137.

²⁶⁹ Norman Bowie, ed., 1988, p. 34 and p. 42.

²⁷⁰ Ibid., pp. 40-41.

this does not mean their genuine choices are fair. For (1) they might not know what other options they could choose otherwise. Barry assumes that people know all the possible choices they could make, which is impossible. Besides, this leads to the problem of vicious circle. For instance, people who live in a closed culture or community, e.g., the Amish community, will never know what other options they could have and thus they and their offspring will never get out of the vicious circle. I think that this is what happens to some African-Americans about their choice of education. (2) Even if (1) is not true, there will be another serious problem that even Barry acknowledges: we cannot tell which genuine choice of social or natural endowments is morally relevant and which is morally arbitrary. Barry writes, “These remarks are, I should emphasize, intended to be no more than suggestive. I do not claim that I yet have a general way of sorting out which characteristics should count as ‘morally arbitrary’ and which should be regarded as morally relevant.”²⁷¹ It is problematic, then, to argue that people’s genuine choices are fair.

Second, Barry’s argument fails given that we have the technological capabilities to do genetic intervention. His argument only makes sense for most social inequalities that we know of and that we may have been doing something about. But that isn’t true of natural inequalities, given that we do not know their potential risks and given that genetic technology and ethics have not been fully developed. But suppose that we have the capabilities. What could we say to those who previously identified themselves with their natural inequalities? It is absurd to say that their old choices are fair but they are not now.

Third, even if Barry were right, his proposal would merely ease rather than solve the burden problem. Society still bears the responsibilities to resolve social and natural inequalities in most cases. So his argument does not mean much practically. By contrast, a

²⁷¹ Ibid., p. 41.

Buddhist society has no such obligations. At best, a Buddhist society will do whatever it can to help an individual's social and natural inequalities. But people cannot claim that they are entitled to some compensation for social and natural inequalities in a Buddhist society.

Therefore, any suggestion that individuals deserve only partial social and natural inequalities will fail. We deserve all social and natural inequalities or we do not deserve them at all. Virtually, Western philosophers adopt the latter and Buddhists accept the former. Which one is true? There won't be any hard scientific proofs either way. As long as each approach is consistent, all we can do is choose what we think may be better for the welfare of human beings. So which is better? This is an interesting question. But since it is not my primary concern, I will leave it here. My cardinal concern here is Buddhist ethics—mainly Bodhisattva Practice. To understand what Bodhisattva Practice is, to see how it can provide an answer for the moral arbitrariness problem, and to see how it can be applied to genetic intervention, we need to know four basic doctrines of Buddhism: (1) the Law of Dependent Origination (LDO) and Law of Karma (LK), (2) “no-self,” (3) rebirth, and (4) that life is inherently suffering. These four doctrines are necessary for Bodhisattva Practice.

II. The four doctrines of Buddhism and Bodhisattva Practice

1. The four doctrines

Since there are many doctrines in Buddhism, why do we consider these four doctrines only? There are two reasons. First, to a large extent, they are fundamental doctrines of Buddhism. Second, to see how Buddhism can apply to the ethics of genetic intervention or general ethics, these four are necessary. S. Tachibana points them out:

The ethic of Mahayana Buddhism is founded upon pantheistic doctrine among many other things, while that of Pali Buddhism is established upon or deduced from the doctrine of rebirth, sympathy, Karma, ‘non-self-ism’, &c...Any one who sets out to frame a system

of Buddhist ethics, whether Mahayanistic or Hinayanistic,...I venture to say, therefore, that an interpretation of the ethics of Pali Buddhism is an interpretation of Buddhism in general.²⁷²

There are two minor differences between the four doctrines I use and Tachibana's: that life is inherently suffering and sympathy, and Law of Dependent Origination and Law of Karma. First, "compassion" is a much better term than "sympathy" since the concept of sympathy does not really capture or express the Buddhist idea. Sympathy is a human feeling that lacks the motivation to alleviate suffering. This motivation is very important to Bodhisattva Practice. Thus, most Buddhists use "compassion" instead of "sympathy." In addition, the nature and importance of sympathy is really not a doctrine in Buddhism. There is a more profound question in Buddhism: What arouses sympathy or compassion? It is suffering that arouses our sympathy or compassion. Therefore, it is better to use the doctrine that life is inherently suffering instead of sympathy. Second, there are some differences between Law of Dependent Origination (LDO) and Law of Karma (LK). LK is a special case of LDO and is specifically used for moral or ethical purposes. LDO is used to explain all kinds of cause-effect relations in Buddhism. Since my topic is about ethics, I will focus more on LK than LDO. In addition, some Buddhists use "kamma" and some use "karma." Since "karma" in Sanskrit is more common, I will use "karma" from now on.

(a) The Law of Karma (LK)

Without this doctrine, Bodhisattva Practice would lose its moral status and meaning. Wendell C. Beane writes, "Karma, nonetheless, does play 'the most important role in Buddhist ethics' (Suzuki)."²⁷³ Bruce Reichenbach writes, "In short, because the doctrine of the law of karma stands as a central teaching in the various Hindu, Jaina and Buddhist

²⁷² Tachibana 1926, p. vi-vii.

²⁷³ Beane 1974, p. 448.

philosophical-religious systems, consideration of it provides a key to understanding their philosophical and religious beliefs.”²⁷⁴

Before we discuss LK, it is important to know a little about LDO since LK is a special case (or aspect) of LDO. Wendell Beane points out a similar idea: “Yet, granting the interesting question of positing the theoretical centrality of Karma as compared with ‘Dharma’ [LDO], it is the latter concept that appears to have the advantage of inclusiveness: ...”²⁷⁵ The Western notion of causality is also a special case of LDO since its temporal condition has to be at present for causation to obtain, whereas LDO does not require that. According to K. Sri Dhammananda, LDO means: “When this is, that is; this arising, that arises. When this is not, that is not; this ceasing, that ceases.”²⁷⁶ Bimalendra Kumar also offers the similar definition: “When this exists, that exists; on the arising of this, that arises. In the absence of this, that does not come into existence; on the cessation of this, that ceases to be.”²⁷⁷ According to Chi-chiang Huang, there are four kinds of Sinitic LDO: (1) the law of storehouse consciousness, (2) the law of suchness or thusness, (3) the law of universal causation, and (4) the law of karma. Since the first three are either too metaphysical or too epistemological, I won’t go further to explicate them. (His article is in Chinese.) In my opinion, Yu-wen Yang offers a much better classification than Chi-chiang Huang. Yang identifies two categories: (1) non-sentient or theoretical LDO, e.g., scientific causality, and (2) sentient or practical LDO, e.g., LK (pp. 9-10). It is said that LK is the moral aspect of LDO. Bruce R. Reichenbach writes, “Consequently, the law of karma is a special application of the law of universal causation [LDO], an application which uses the

²⁷⁴ Ibid., p. 3.

²⁷⁵ Ibid., p. 448.

²⁷⁶ Dhammananda 1993, p. 106.

²⁷⁷ Kumar 1993, p. 392.

metaphysics of causation both to explain a moral phenomenon and to vindicate the moral order by applying universal justice to human moral actions.”²⁷⁸

So what is LDO? The definitions and classifications presented above are too simple and vague to understand what it means and how it operates. This is where Nagarjuna plays his important and significant role in the Buddhist history.²⁷⁹ Nagarjuna offers a Madhyamika account of LDO, which means “Middle Way.” Basically, one of the aims of LDO is to explain why and how things happen to us. Since this goal is not a scientific inquiry, we should look for answers in metaphysics. So if we are Christians, we say that God is behind everything. It is God’s will or intention to make things happen. God is the answer behind everything even though we don’t know why He wills and how He makes things happen. This answer is satisfactory to many Christians. But what about the atheists? Is there an alternative for them? LDO may offer an answer. (Note: we don’t have to be a Buddhist to believe in LDO.) According to LDO, things happen to us because all the related conditions are right and actualized. So if things do not happen to us, then not all the related conditions are right yet and thus they could not be actualized. This explains how things happen. What about why things happen? LDO would say that we, not God, are responsible for everything that happens to us. This sounds like LK but remember that LK could not explain how those related conditions arise. I will expound more later. As an analogy, consider Edward Lorenz’s Chaos Theory, which states: “behavior that is not random looks random.” Following the same idea, we could interpret LDO as follows: conditions that look random (or unrelated) are not random (or unrelated). For instance, consider the following scenario. X, a person, was driving his car close to an intersection

²⁷⁸ Ibid., p. 2. Also, see Parsons 1959, p. 436.

²⁷⁹ See Beane 1974, pp. 441-442.

while a jaywalker was crossing. So X stopped and let the jaywalker pass. Then X drove on to the next traffic light. Since it was a green light, X did not stop. While X was almost passing the intersection, a drunk driver hit X. Unfortunately, X was killed in the accident. Was the jaywalker to blame for X's death? Most people wouldn't think so. However, there is a lingering question: What role did the jaywalker play in causing X's death? For if X had not stopped for the jaywalker, X would not have been killed. Therefore, X's stopping for the jaywalker was one of the conditions indirectly related to X's death. According to LDO, although the jaywalker was not the direct cause of X's death, he or she was an indirect source of a condition to actualize X's death. That is, although the appearance of the jaywalker seemed random (or unrelated) to X's death, it was not random (or unrelated) after all. So LDO is universal causality to explain why and how things happen to us. Since my focus is about ethics, I will focus more on LK than LDO from now. However, LDO will sometimes appear again because it will be difficult to explain Buddhist ideas without it.

What does LK do or mean? Let's consider X's case again. What role did LK play in this case? LK concerns about this question: Why was it the drunk driver, not the jaywalker, who killed X? According to LK, it is because X did some minor bad deeds to the Jaywalker and some major bad deeds to the drunk driver in X's past life (or lives). Thus, it was the drunk driver who killed X. In a sense, X "owes" more debt to the drunk driver than to the jaywalker. In addition, we can understand what it means from Reichenbach's explanation:

In sum, we might say that the law of karma describes or governs (depending on how one views the epistemological status or the law) how certain qualities of consequences, affecting the agent, arise from moral actions and how and to what degree they affect the agent in the current and subsequent lives. The qualities of the consequences are moral-resultant qualities, such as possessed merit and demerit, created dispositions or tendencies to desire, and character, as well as the pleasure and pain they eventually

produce.²⁸⁰

There are several points I would like to mention about LK. First, LK is the main moral force behind Bodhisattva Practice. Second, the moral consequence (i.e., karma), does not have to appear in one's present life. It could pass several lives before it applies to the agent. By the same reasoning, our current social and natural endowments could come from our past life or lives. Then, how do our moral actions and intentions operate under LK? The general rule is: good deeds (or intentions) produce good karma and bad deeds (or intentions) bad karma.²⁸¹ Since how LK operates is not my cardinal concern, I will not go further.²⁸² However, I would like to point out a mistake that Donald W. Mitchell makes. Mitchell writes, "A proper deed is a necessary condition for karmic reward but not a sufficient condition."²⁸³ Mitchell may be confused between LK and LDO. It would be more accurate to say that a proper deed that produces karmic reward is a necessary condition for LDO to materialize but not a sufficient condition. For any deed will definitely produce its own karmic reward and whether that karmic reward will be materialized depends on LDO. Finally, we may notice that there are some tensions among LK, "no-self," and rebirth. I will respond to those tensions later.

(b) The doctrine of "no-self"

Without this doctrine, Bodhisattva Practice is impossible. Kenneth K. Inada points this out and writes, "Without this doctrine, it would not be possible to develop Buddhist ethics."²⁸⁴ Corrado Pensa not only says the same thing but also suggests that compassion

²⁸⁰ Ibid., p. 2.

²⁸¹ Plamintr 1994, p. 120.

²⁸² Melford E. Spiro offers some detailed explications (pp. 114-120).

²⁸³ Mitchell 1975, p. 101.

²⁸⁴ Inada 2000, p. 255.

and “no-self” are compatible and that both are the Buddha Nature (pp. 45-46).

What do Buddhists mean by “no-self”? There are several interpretations. I will use this one: there is no permanent (or unchanging) self. According to Buddhism, it is a mistake to think that there is such an entity called “self.”²⁸⁵ Since there are some serious tensions between this doctrine and other doctrines (e.g., LK or rebirth), how can this doctrine accommodate others or vice versa? Winston King’s explanations will ease some worries about those tensions. According to King, there is no real self that transmigrates to another life but a residue of “karmic energy.” As an analogy, consider the transition of milk to cheese. Milk changes to curds and curds change to cheese. Although cheese is discerned from milk, it still possesses some “karmic energy” from milk. We cannot say that milk is different from cheese or the same as cheese.²⁸⁶ Therefore, based on King’s explications, rebirth and “no-self” are not incoherent. There is another way to see their compatibility through Nagarjuna’s theory of causality (or LDO), which states that there is no causal power in the cause itself. Consider the changes from milk to cheese again. It is salient that there is no causal power in milk. In other words, milk by itself does not cause the changes. Milk could just sit still and then get spoiled. It need not become curds or cheese. It is LDO that “conditions” the possible changes of milk.

King’s explanations and examples to ease those tensions are insightful. However, there is a minor concern: the term “karmic energy” may not be appropriate. In my opinion, the term “karmic consequence, reward, or result” is a little better.²⁸⁷ “Karmic energy” indicates that there is still something energetically living through the past, present, and future.

²⁸⁵ Dhammananda (1993: p. 117) and King (1994: p. 8).

²⁸⁶ Ibid., pp. 14-15.

²⁸⁷ For instance, Charles S. Terry and Richard L. Gage (1999) and Donald Mitchell (1975) use “karmic reward.”

Although this is what Buddhists intend to say, LK cannot provide and support this kind of state of affairs as I expound above. It is LDO that can do so. Besides, King misses an important question, “Does karmic consequence warrant rebirth?” Once we know the answer, we shall be able to dissolve the tension among LK, rebirth, and “no-self.” Without certain right conditions, karmic consequence does not warrant rebirth. LDO is the law that governs rebirth and its Twelve-Linked Chain is to expound how those right conditions arise and cease.²⁸⁸

Finally, some Buddhists put the “no-self” doctrine above LDO. I don’t think that this is quite right. For instance, Winston King says, “No anatta [no-self] doctrine, no Buddhism.”²⁸⁹ King’s proposition is an overstatement. For in Buddhism, it does not make sense to say that a certain doctrine is more important since most Buddhist doctrines are mutually connected and support one another. For instance, Kenneth Inada argues that the three Buddhist ideas (or doctrines), suffering, no-self, and impermanence, mutually support one another.²⁹⁰ However, if we do need to prioritize them, in my opinion, the “no-self” doctrine is the second most profound and puzzling one in Buddhism. LDO is more fundamental than “no-self” and others since it is the most basic law to explain other Buddhist doctrines. For instance, we still need LDO to explain the existence of a temporary self. So LDO is more basic than “no-self.” Yu-wen Yang points out the importance of LDO: “In Buddhism, LDO is the most significantly important.”²⁹¹ Wendell C. Beane also writes, “Moreover, Wayman asserts that pratyasamutpada [LDO] ‘is probably the most

²⁸⁸ See Chapter 3 for what Twelve-Linked Chain is in *Basic Buddhist Concepts*, translated by Charles S. Terry and Richard L. Gage, 1999.

²⁸⁹ King 1964, p. 13.

²⁹⁰ Inada 2000, p. 261.

²⁹¹ Yang 1996, p. 6.

characteristic doctrine of Buddhism.”²⁹² Even so, it is still not the right way to understand Buddhism to rank the importance of doctrines. Therefore, I wouldn’t say, “No LDO, no Buddhism” even though LDO is the most fundamental law in Buddhism.

(c) The doctrine of rebirth

Without this doctrine, Bodhisattva Practice loses one of its means for a reason to become a Buddha. Rebirth means that there are past, present and future lives for all living or sentient beings. However, Steve Hagen cautions us not to confuse rebirth with reincarnation. He proposes that “rebirth” should be the right and legitimate word for Buddhism. Reincarnation presupposes that there is some kind of self or entity persisting through past, present, and future, which is inconsistent with the Buddhist doctrine of impermanence or “no-self” (p. 46). I concur with Hagen. Most Buddhists also use “rebirth” although not many of them explain why.

How can we be sure that there is rebirth? In my opinion, this doctrine is the weakest among the four doctrines. (Some Buddhist scholars argue that this doctrine is not in the Buddha’s original teachings. The other three are.) Jay Garfield says similarly that rebirth is less important to (Mahayana) Buddhism (p. 520). Although his conception of rebirth is not Mahayana Buddhism, Tim Mulgan offers four ways to see how rebirth is possible (pp. 8-9). First, it can be defended on empirical grounds, for instance, the memory of past life (or lives), and the extraordinarily innate abilities of newborn children. Second, it can be proved by broadly religious or existential arguments, for instance, the Buddhist doctrine of karma (see Spiro’s arguments below), and “Kant’s own ‘demonstration’ of the practical necessity of belief in God and the after life.”²⁹³ Third, it can be argued by appealing to “the

²⁹² Ibid., p. 446. Also see p. 448.

²⁹³ Ibid., p. 8.

natural solution to various philosophical puzzles, notably potentially vicious regresses concerning free will and moral responsibility.”²⁹⁴ Finally, it can be defended by appealing to Hindu and Buddhist scriptural authorities, which I think is not a good approach. For sometimes those scriptural authorities are exaggerated and seem too incredible.

Although I have no serious objections to Mulgan’s suggestions, there are only two categories on which to defend rebirth: scientific (Mulgan’s first suggestion) and metaphysical (Mulgan’s second and third) proof. (Mulgan’s fourth could be either scientific or metaphysical.) I think that the scientific argument is a much better solution, if there is any. It is stronger than Mulgan’s empirical investigations. For those empirical investigations do not satisfy the criterion of universality. That is, if rebirth is true, why does it happen to only some particular people? Besides, among those particular people, how can we be sure that their memories or innate abilities are coming from their past lives or that they are not fraudulent? Since it is very difficult to seek scientific verification, we may have to seek the second best approach—metaphysical argument. Kenneth K. Inada offers one. Inada argues that because of our own deeds (karma), we have to have rebirth in order to cease suffering (pp. 265-266). This argument is questionable. I will explicate later.

Belford Spiro offers two arguments for rebirth and the first one is similar to Inada’s. First, Spiro argues that if the law of karma is true, then one of its logical consequences is that rebirth must be true (p. 43). Second, both rebirth and birth are the facts of existence for Buddhism. Since there is birth, there must be rebirth. Otherwise, it is inconsistent to say that rebirth and birth are the facts of existence (p. 41). Are Inada’s and Spiro’s arguments correct? No. Let’s consider Spiro’s second argument first. It is obvious that Spiro begs the question. So we can disregard his second argument. Spiro’s first argument similar to

²⁹⁴ Ibid., pp. 8-9.

Inada's is more challenging. This argument is not right. For LK does not warrant rebirth. Remember that LK is only a special case of LDO since LK focuses only on the moral aspect of LDO. Whether beings can (or cannot) come into existence depends on LDO. That is, certain right conditions must obtain for beings to be reborn even if there are some karmic consequences or rewards. If those right conditions never obtain for some unknown or mystical reasons, rebirth is unlikely to happen. For example, recall King's examples of how milk can become cheese and how a seed can become a plant or a flower. Suppose that a seed (i.e., karmic consequence) is planted under soil. Can it definitely become a plant, flower, or tree? The answer is uncertain. If it is not planted in the right soil (e.g., the soil may be too dry), if the temperature is too cold, and if the seed itself is too weak to break through, then it may be just "dormant" forever and waiting for the right conditions to become whatever it is supposed to be. Whether those right conditions will appear depends on LDO. Therefore, LK alone does not warrant rebirth.²⁹⁵ Let us entertain a hypothetical scenario. Suppose that X, a Buddhist, maintains Bodhisattva Practice diligently and will achieve Buddhahood in X's present life. Also suppose that X somehow knows that there will be no more suffering beings in the next life. In that case, if the sole purpose of rebirth is to save all suffering beings or to cease suffering, then there is no point to be reborn. Therefore, Spiro and Inada are incorrect, and rebirth is not a necessary condition for Bodhisattva Practice.

According to Jay Garfield, rGyal tshab, a Tibetan Buddhist, offers an argument to demonstrate rebirth. First, since we have many various kinds of compassion toward

²⁹⁵ If so, we might want to ask an interesting question, "What is the probability that those right conditions would not occur?" I think that Buddhists would tend to say that it is very unlikely. It is theoretically possible that they would not occur but it is practically impossible that they would not occur.

different species, we must have “experienced” their lives in the past. Otherwise, we won’t and shouldn’t have those various kinds of compassion. Second, if this is true, we will have a future life, since the present life will become the past. However, Garfield does not agree with rGyal tshab for two reasons. First, rGyal tshab’s argument is not consistent with Nagarjuna’s account of causality (i.e., LDO).²⁹⁶ Nagarjuna says that there is no causal power in the cause itself (i.e., there is in the relevant sense no causal connection between cause and effect), and that everything happens or exists because of LDO. Since rGyal tshab assumes that there is a causal connection between compassion and its effect, his argument is inconsistent with Nagarjuna’s LDO (p. 517). Second, rGyal tshab assumes that there is an “I” (i.e., a self), which is also inconsistent with the Buddhist “no-self” doctrine. Garfield concludes that there is no rebirth and it is not necessary to believe in rebirth to become a Buddha. Therefore, rGyal tshab is wrong.

Garfield is right on both counts. For among the countries where people practice Mahayana Buddhism, e.g., Tibet, China, Taiwan, and Japan, Tibet is the only country where people firmly believe in reincarnation rather than rebirth. For instance, the Tibetans’ firm belief in the reincarnation of the Dalai Lama and Panchen Lama is not found in China, Taiwan, and Japan. Recall Hagen’s caution. Reincarnation presupposes that there is an “I” and this “I” will continue to cause reincarnation, which is inconsistent with Nagarjuna’s LDO. Therefore, Garfield is right on both counts.

However, even if Garfield’s critique of rGyal tshab’s argument is right, it does not mean that rebirth is impossible since there are other arguments to demonstrate its

²⁹⁶ Nagarjuna, who lived actively approximately between A.D. 150 and 250, may be the most significant figure in Buddhist history to expound LDO, e.g., the “emptiness” of LDO. Many interpretations of LDO are derived from his theory.

possibility as shown above. I also think that one of Garfield's suggestions is radical and incorrect. Since Garfield concludes that there is no rebirth and thus we have only one chance (i.e., this current life of ours) to become a Bodhisattva, how could we become one, if the process is so stupendously difficult? Garfield suggests that we should just take advantage of others' accumulated karma and turn it into ours as Einstein took advantage of other scientists' works and developed his theory of relativity. Garfield calls his method a "transpersonal" model of attainment as opposed to the Buddhist "intrapersonal" model which means that one has to attain Buddhahood by oneself. Garfield considers his suggestion to be very plausible and attractive to those who cannot attain Buddhahood on their own (p. 519). Garfield's suggestion is totally false. If he were right, Buddhism would lose its meaning and purpose. For there is no point for Buddhists to pursue "self-perfection" and thus the whole architecture of Buddhism will just crash. No Buddhist in the more than 2500 years of Buddhist history suggests taking this direction. Besides, how can we take someone else's karma and turn it into ours? Karma is unlike knowledge that we can pass on to others or that others can pick it up from us. The only way to take advantage of others' karma is to kill them as in the fictional story that Highlanders can take other Highlanders' power and knowledge only after killing them. Garfield simply misses the true meaning and purpose of Buddhism.

Finally, some Western psychologists try to prove that we do have past and future lives, e.g., Raymond Moody and Helen Wambach. The former collects and describes 150 people's near-death experience and concludes that there is a continuous "soul" after death. The latter hypnotizes people and asks them to recall their past life experience. I don't think that both kinds of empirical investigation have the scientific objectivity that physics does since we can never verify their validity.

(d) The doctrine that life is inherently suffering

Without this doctrine, Bodhisattva Practice will certainly lack its depth and breadth. First, why is this doctrine important? Damien Keown indicates that the First Noble Truth (i.e., suffering) is the most basic problem that the Buddha sets out to solve.²⁹⁷ According to Buddhism, the Four Noble Truths are: (1) The Noble Truth of *Dukkha* (suffering), (2) The Noble Truth of the Cause of *Dukkha*, (3) The Noble Truth of the End of *Dukkha*, and (4) The Noble Truth of the path leading to the End of *Dukkha*. Since the Four Noble Truths are set up in a sequential step to achieve enlightenment, the First Noble Truth is the first basic problem that the Buddha determines to resolve. Melford Spiro also says, “Buddhism promises deliverance from suffering.”²⁹⁸

Second, what does this doctrine mean? According to Buddhism, human beings are born with cravings. Since craving is an innate, primordial, and intrinsic property of human beings, life is inherently suffering. This is the Second Noble Truth: there is a cause of our suffering. It would last through our whole life to satisfy all our cravings. Since it is impossible to satisfy all our cravings at any moment, we are constantly suffering. Therefore, the suffering that results from unsatisfied craving is the intrinsic and primordial condition of our existence. In short, life is inherently suffering. Jeremiah Conway points this out and writes, “According to Buddhism, suffering is not some ontic fact, which may or may befall us. Suffering is, instead, primordial. It is part of our ontological condition. It is a constituent part of our everyday existence.”²⁹⁹

There is another argument for the same conclusion. Since all infants embrace the world

²⁹⁷ Keown 1995, p. 1.

²⁹⁸ Spiro 1982, p. 36.

²⁹⁹ Conway 2001, p. 9.

with crying at birth—a sign of painful or suffering experience, we are born to suffer. Some people may oppose this. But ever since we were born, if this world would be a happy place to live, why didn't we embrace it with laughter—a sign of a happy experience? One may argue that it is because of the physiological reason that infants need oxygen. However, doesn't laughter also have the same physiological effect even though it might have less effect than crying? Bart Gruzalski argues similarly and writes, "Why does an innocent child suffer? Because the child was born and suffering is part of the human condition. Suffering follows upon birth."³⁰⁰ Furthermore, according to the Buddha's observation, we go through life stages with birth, aging, disease, and death. None of these stages is a happy and satisfactory transition.³⁰¹ Therefore, life is not only inherently but also externally suffering.³⁰²

Christians could oppose this doctrine as well as LK since the Bible does not say anything about it. Also, they could abhor and reject the suffering doctrine since it is so blunt and shocking. Jeremiah Conway points out one reason for this. He indicates that Western philosophers deny this doctrine because we don't want to face the fact (or truth) and this makes life easier.³⁰³ This seems to be the attitude that most people have toward this doctrine. I have heard only "Life is good" nowadays in the US. It is not very common that Western philosophers would propose that life is inherently suffering. Also, the doctrine seems so pessimistic. Moreover, if it is true, then life seems not worth living. This could

³⁰⁰ Gruzalski 2000, p. 12. Also, see Inada 2000, p. 261.

³⁰¹ Ibid., p. 11. Also, see Keown (1995: pp. 1-2), Dhammananda (1993: pp. 75-76), and Skilton (1994: p. 29).

³⁰² There are two kinds of suffering: intrinsic and extrinsic (or external) suffering. Humans suffer both kinds since we know what craving is and have to go through all externally impermanent stages, which are suffering too. Other non-rational sentient beings only suffer extrinsically since they don't know what craving is but still have to go through these impermanent stages.

³⁰³ Also, see Querido's citation above.

mean the end of the human race. But this kind of reasoning or worry is false. It is not what this doctrine for. The primary purpose of this doctrine is to enlighten us to truly realize the nature of our existence and then try to solve it to achieve the greatest happiness—nirvana. Medicine alone cannot help us find a permanent cure to achieve the ultimate happiness. Keown points out this important purpose,

Buddhism draws attention to the shortcomings of human existence not out of a morbid fascination with suffering but in order to encourage a realistic appraisal of the human condition. It is not until the condition has been accurately diagnosed that the search for a remedy can begin. Suffering is not something to be relished in a perverse or masochistic sort of way—quite the contrary...Its ultimate goal, however, is a permanent cure for life's afflictions, something which cannot be achieved through medicine alone.³⁰⁴

Also, even if the doctrine is true, it doesn't mean that we cannot live a happy life and that we should be pessimistic about our life. This is not the purpose of the doctrine as Keown shows. What we believe and how we live our life can be two different things. If we are enlightened and truly understand the purpose of this doctrine, it will be a very strong motivation to pursue our lives happily and compassionately. This is why Buddhists can live their lives joyfully, compassionately, and peacefully rather than painfully and pessimistically. Therefore, all of the worries are simply misunderstandings.

We have explored why this doctrine is important and what it means. Let us turn to our focus. Without this doctrine, Bodhisattva's compassion is pretty much empty or superficial. Without it, Bodhisattva's compassion will be just like the Western idea of compassion, which is superficial and narrow. Contrarily, with it, Bodhisattva's action of compassion becomes a natural, deeper, and unconditional obligation, rather than a supererogatory action as John Rawls suggests (p. 100). Patricia Walsh-Frank and Jeremiah Conway also criticize the Western idea of compassion as superficial and narrow.

³⁰⁴ Ibid., p. 2.

2. Bodhisattva Practice

What can Buddhist ethics offer for genetic intervention, especially for the problem of the morally arbitrary distinction between genetic therapy and enhancement? Since the conventional five Buddhist precepts won't help much with our problems here, we need to extract some new ethical guidance from Buddhism.³⁰⁵ As far as I know, no Buddhist has discussed genetic intervention. This is a new terrain and challenge for Buddhism. So the question for Buddhists is: Which idea of Buddhism can help? I would like to suggest Bodhisattva Practice since it is the foundation of (Mahayana) Buddhist ethics. Kenneth K. Inada points this out, "In a nutshell, the Bodhisattva Ideal expresses the foundation of Buddhist ethics."³⁰⁶

Bodhisattva Practice means that we think and act like Bodhisattva in our daily life. According to Buddhist scripts, "Bodhi" is the word for enlightenment and "Sattva" is for sentient or living being. So a Bodhisattva is an enlightened being who defers becoming a Buddha. Since people still suffer in this world, Bodhisattva's mission is to help others achieve enlightenment. There are two main ideas in Bodhisattva Practice: "sorrow" wisdom and compassion. Peter Slate writes, "On all Buddhist lists, two of the most important bodhisattvas are Manjusri and Avalokitesvara. They epitomize, respectively, Wisdom and Compassion."³⁰⁷ Most Western Buddhist scholars do not use the term "sorrow" wisdom, but some Chinese Buddhist scholars suggest that we should (some suggest "empty" wisdom). I think that "sorrow" wisdom is a little better because it captures the true characteristic of what Bodhisattva's wisdom ought to be. Bodhisattva's "sorrow"

³⁰⁵ The five precepts are: "Don't kill," "Don't steal," "Don't have wrong conduct in sexual desire," "Don't speak falsely and harshly," and "Don't drink alcohol."

³⁰⁶ Ibid., p. 258. Also, see Garfield 2001, pp. 513-514.

³⁰⁷ Leslie S. Kawamura, ed., 1981, p. 8. Also, see Inada (2000: p. 259) and Dhammananda (1993: p. 21).

wisdom is to truly recognize the suffering of all sentient beings and the true existence of all non-living things, and then one should apply his or her compassion to them. Patricia Walsh-Frank captures this description in part and writes, “When we speak of ‘wisdom’ we are not speaking of ordinary wisdom but that which transcends the mundane to a profound understanding of the true nature of Being as arising from the ground of universal primordial suffering.”³⁰⁸ Walsh-Frank captures only the realization part but not the part of applying compassion to all beings. The latter is important because without it there will be no actions in Bodhisattva Practice, which means that Bodhisattva Practice will be merely a realization or thought. Besides, there is another serious problem with her interpretation and argument: Walsh-Frank proposes that Bodhisattva’s compassion includes only human beings rather than all sentient beings including animals and insects.

Then what is Bodhisattva’s compassion? Compassion is *karuna* in Sanskrit. It means “a trembling or quivering of the heart in response to another being’s pain.”³⁰⁹ There are not too many explanations of Bodhisattva’s compassion in (both Eastern and Western) Buddhist literature. Although I don’t quite agree with Wendell C. Beane’s suggestion, he at least notices this problem. Beane writes,

Yet it is precisely the foregoing extra-Buddhist comparisons about *self-identity* and the intra-Buddhist differentiations about the scope of charity which have so effectively diverted much scholarship from a critical attention to the more decisive implications of factors distinctive of, and integral to, the Mahayana branch itself—in this case, the element of *compassion*.³¹⁰

Even if Buddhists try to explain it, their explanations are still very vague and unhelpful. For

³⁰⁸ I have printed out her article from the internet and it does not show exact pages. Therefore, I won’t be able to put down page numbers for the quotations of hers I use.

³⁰⁹ Conway 2001, p. 8.

³¹⁰ Ibid., p. 450.

example, Patricia Walsh-Frank writes, “Compassion is an emotion that is ‘other’ directed, it involves a concern for the well-being of others rather than our own.”³¹¹ Let me present a simpler explanation. Mr. Bing-Na Lee, a Chinese secular Buddhist devotee, says that Bodhisattva’s compassion is to relieve suffering and to give joy. This connects to Bodhisattva’s wisdom beautifully since it shows the necessity of physical actions to mitigate suffering. Besides, it points out concisely the content of Bodhisattva’s compassion (i.e., suffering and joy) and its purposes (i.e., to relieve suffering and to give joy). I think that Lee’s elucidation is one of the best interpretations.

To understand a little better Bodhisattva’s conception of compassion, it is helpful to know what its spheres of application are. I identify four possible spheres in Table 7.

Table 7	The application spheres of Bodhisattva’s compassion
(1)	Persons only
(2)	Human beings only
(3)	All sentient beings: human beings, animals, and insects, etc.
(4)	All sentient beings and all non-living things

First, I would like to explain the words I use. Since in general “being” refers to something alive, it is only meant for sentient or living things. Also, since I think that “sentient” and “living” denote the same thing, I will use them interchangeably. Second, I will mainly focus on (3) since (3) is enough for the sake of comparison and it is also what most Buddhists discuss. Third, we can see from Table 7 that the breadth of spheres increases as the number ascends. (1) is the narrowest realm and (4) is the broadest.³¹²

³¹¹ Also see Inada 2000, pp. 258-259.

³¹² For all “persons” are human beings but not all human beings are “persons,” and all human beings are

Damien Keown discusses (1) by looking into two Western definitions of “person,” which both emphasize the rational capacity. One is Locke’s definition: a person is a “thinking intelligent being that has reason and reflection and can consider itself as itself,” and the other is: “someone who is ‘rational, is capable of free choices, and is a coherent, continuing and autonomous centre of sensations, experiences, emotions, volitions, and actions.’”³¹³ Based on both definitions, it follows that although all “persons” are human beings, not all human beings are “persons.” Thus, these two accounts indicate that only persons, not all human beings or other forms of life, deserve the moral respect. Keown rejects this proposition from the Buddhist perspective. First, Buddhists reject the idea that a person is a moral being at a certain time but not at some other time. For if this argument is right, it follows that a person who deserved moral respect will not deserve it after he or she loses the rational capacity. Buddhists do not accept this. Second, this argument is inconsistent with the Buddhist doctrine of “no-self,” which states that there are no essences of self or “personhood” that can be identified. Since “personhood” indicates that there are some essences in persons (e.g., the rational capacity), it contradicts the Buddhist “no-self” doctrine. Third, this argument is too narrow for Buddhist ethics since Buddhist ethics considers all living beings, including animals. If so, Buddhists will have to repudiate (2) for the same reason. (1) and (2) are the realms that Western philosophers use.

As shown, (3) is the Buddhist conventional inclusion. For instance, Jay Garfield writes, “Think about the bodhisattva resolution in any of its standard formulations; I will attain enlightenment for the sake of all sentient beings; ...”³¹⁴ Shyh-Miin Lin, a Chinese

sentient beings but not vice versa.

³¹³ Keown 1995, p. 27.

³¹⁴ Garfield 2001, p. 515. Also see Gruzalski (2000: pp. 70-71) and Beane (1974: p. 450).

Buddhist, also uses this realm (p. 12). (4) is suggested by some Buddhist philosophers, e.g., Kenneth Inada. Inada challenges Buddhists to argue for this realm. He writes, “This perspective is known as the Bodhisattva Ideal. For those who understand fairly well the doctrines of Buddhism, it becomes a further challenge to incorporate greater and deeper realms of beings and nonbeings.”³¹⁵ Inada does not offer any arguments for (4). Most Buddhists would be glad to accept (4). All they need is legitimate reasons. In my opinion, to argue for (4), Buddhists at least need to respond to two questions. First, does it make sense to say that we feel compassion for non-living things, e.g., trees, stones, and mountains? Second, more importantly, what are the arguments to support (4)?

First, of course, it does not make sense to say that we feel compassion for water, grass, trees, rocks, and stones, etc. But in a slightly different way, we can say that we should have a “cherishing” feeling, which also comes from compassion, for these natural things. By “cherish,” I mean “appreciate” plus “respect.” David J. Kalupahana and Damien Keown indicate that if the practice of compassion is to have any true purpose or meaning, we should not exploit natural things for the purposes of human consumption and pleasure only.³¹⁶ Kalupahana even suggests that we should view natural things symbolically as our “friends.” He writes,

Furthermore, to destroy a tree that has contributed much to the cleansing of the air that we breathe and has provided delightful shade during the hotter part of the day is looked upon as the betrayal of a friend (*mittadubbha*). This sense of gratitude is symbolized in the legend about the Buddha’s very first act after his attainment of enlightenment, when he stood gazing at the tree that gave him shade during his long struggle.³¹⁷

Otherwise, we may not “cherish” non-living things in Nature and we will exploit them as

³¹⁵ Ibid., p. 258 and also pp. 272-273.

³¹⁶ Kalupahana (1995: p. 138) and Keown (2005: p. 39).

³¹⁷ Ibid., pp. 141-142. Also, see Keown 1995, p. 34.

much as we can. Keown points out that this attitude is characteristic of some Christian thought and reflects what we are doing nowadays (p. 39). Kalupahana points out that this isn't good for human beings or even for the earth. There are already some ominous signs, for instance, the Tsunami in South Asia, Hurricane Katrina and Rita in New Orleans, the earthquake in Pakistan, and serious floods in South America. Although what caused these disasters is still controversial, most scientists argue that the enormous intensity of these devastating hurricanes is the result of global warming, of which human activities are the main cause. By contrast, Buddhists encourage a balance and harmony in life with Nature. For instance, Kenneth Inada says, "As it should be clear by now, Buddhist ethics is the total involvement of all beings, inclusive of nonbeings, in constructing an ideal life of harmony among humankind in the here and now."³¹⁸ Hence, we should "cherish" whatever Nature provides us and respect everything in Nature. In this "cherish" regard, (4) makes sense.

Second, two arguments can be given in support of (4). First, we don't see any contradiction with (4) in Buddhism. On the contrary, (4) is what LDO ought to cover. If LDO determines how beings and things could come into existence, we have no reason to exclude non-living things. However, those who know the Twelve-linked Chain of LDO may have a concern about (4). The Twelve-linked Chain of LDO is only for sentient beings, especially human beings. It does not apply to non-living things. So the Twelve-linked Chain cannot be used to support (4) fully. This is a legitimate concern. However, as I have mentioned above, Yang identifies two kinds of LDO: non-sentient (or theoretical) LDO for non-living things (e.g., the scientific causality) and sentient (or practical) LDO for living beings (e.g., LK). Therefore, there is a different kind of LDO that can be applied to non-living things, and thus (4) is safe. Since Yang's explications are very metaphysical and

³¹⁸ Inada 2000, p. 259. Also see Kalupahana (1995: p. 138) and Keown (2005: p. 39).

not my chief concern, there is no need to go further. Second, (4) meets one of the Buddhist new challenges with modern science since (4) is consistent with String theory, according to which everything, including living beings and non-living things, is made of vibrating energy. Matter is just various combinations of energy. From this perspective, everything has the same nature, namely, a piece of very tiny vibrating energy. Einstein's " $E=mc^2$ " also is consistent with this point. We can view all matter in terms of energy. Therefore, living beings and non-living things in their most fundamental nature are the same. So we could view them as being the same. They are different only phenomenally. Given my two arguments, Buddhists have legitimate reasons to support (4).

Let us now compare Bodhisattva's conception of compassion to the Western idea of compassion. Not too many philosophers offer this comparison. Patricia Walsh-Frank writes, "Compassion is an emotion that occupies a central position in Mahayana Buddhist philosophy while it is often neglected in contemporary Western philosophy. Comparisons between Eastern and Western views on this emotion are rare if they exist at all."

There are four significant differences: Bodhisattva's compassion is unconditional, broader, deeper, and there are no degrees in it. First, it is broader or more universal because Bodhisattva's compassion covers not only human beings but all other sentient beings. Peter Slate writes, "In Buddhism, 'family' loyalty embraces every mammal, bird, fish and insect with which we share this world. The object of the Buddha's concern is every living thing in every phase of its existence. The scope of the Buddha's community is truly universal."³¹⁹ Virtually, all Buddhists accept this inclusion without question.

Second, it is unconditional because Bodhisattva's compassion does not require any attention and expects none in return. The actions that it arouses are all unconditional,

³¹⁹ Ibid., p. 2. Also, see Gruzalski 2000, p. 71.

natural, and spontaneous.³²⁰ They are not supererogatory as John Rawls suggests (p.100).

Third, it is deeper because Bodhisattva's compassion identifies a deeper cause of suffering (i.e., craving) and has a primordial and inherent feeling that the Western account does not have.³²¹

Fourth, now let us turn to the most difficult point: there are no degrees or levels in Bodhisattva's compassion. That is, Bodhisattva's compassion is all equal and the same for all living beings. Three components are needed to develop this idea more fully: "sorrow" wisdom, the same Buddha Nature, and sacrifice. We have already mentioned the "sorrow" wisdom. Let us examine the other two.

In Buddhism, it is said that all life is equal because all sentient beings have the same Buddha Nature. For instance, Phillip Lecso writes, "Buddhism views all sentient life forms as sharing the same fundamental consciousness, often referred to as Buddha-nature."³²² Lecso also quotes from Z. Shibayama, "All sentient beings without exception have the Buddha Nature. This is the fundamental Truth of nondualism and equality. On the other hand, this actual world of ours is dualistic and full of discriminations."³²³ Hence, all life is equal because all living beings have the same Buddha Nature.

What could Bodhisattva possibly do for all sentient beings? It is said that Bodhisattva could sacrifice his or her own life for the sake of other sentient beings. Mizuno writes, "Giving is the most fundamental of the bodhisattva practices, for bodhisattvas give themselves to save others. It is giving that makes a bodhisattva."³²⁴ S. Tachibana writes,

³²⁰ See Conway (2001: pp. 11-12) and Gruzalski (2000: p. 38).

³²¹ See Conway 2001 and Walsh-Frank 1996.

³²² Lecso 1988, p. 308.

³²³ Ibid., p. 309. S. Kudo translated, 1974. Also see Gruzalski 2000, pp. 70-71.

³²⁴ Mizuno 1999, p. 163.

“The Bodhisattva is explained as a being who regards others’ salvation as more urgent than his own.”³²⁵ Lecso quotes a story to show this incredible sacrifice,

On the outskirts of Acinta he [Asanga] saw an old she [?] dog whose hindquarters were raw and crawling with maggots. He felt great pity for her and wanted to relieve her suffering, but could not bear to destroy the maggots. Instead, he cut a piece of flesh from his own thigh and placed it near the dog. He then put out his tongue and prepared to transfer the larvae one by one³²⁶

We can now turn to our argument that there are no degrees in Bodhisattva’s compassion, i.e., Bodhisattva’s compassion is the same for all living beings. This implies that we ought to view and treat all sentient beings equally (let us call this Proposition A). Proposition A does not mean that all sentient beings are morally equal (let us call this last claim Proposition B). To justify Proposition A, we need three premises. (1) All life is equal because all sentient beings have the same Buddha Nature. (2) Bodhisattva’s wisdom is to truly recognize the suffering of all sentient beings and then to apply compassion to them. (3) Bodhisattva can sacrifice his or her own life for the sake of other living beings. Therefore, if Bodhisattva realizes that all living beings are suffering, if all sentient beings have the same Buddha Nature and are equal in this respect and to alleviate their suffering is to awaken their Buddha Nature, and if Bodhisattva is willing to do so even at the expense of his or her own life, there are no degrees in Bodhisattva’s compassion. In other words, Bodhisattva’s compassion is the same for all sentient beings. If so, it entails that Bodhisattva ought to view and treat all living beings equally (i.e., Proposition A).

However, Proposition A is significantly different from Proposition B—all living beings are morally equal. For Proposition B intuitively implies Proposition A but not vice versa. Also, Proposition B is too strong and may not be compatible with Buddhism. For instance,

³²⁵ Ibid., p. 97. Also, see King (1964: p. 59), Ratanakul (1988: pp. 311-312), and Lecso (1988: p. 310).

³²⁶ Ibid., p. 310.

one consequence of Proposition B is that vegetarianism is a necessity for Buddhism. For if all living beings are morally equal, meat eating must not be allowed. However, this is too strong for Buddhism since vegetarianism is still a controversial issue among Buddhists. For instance, Winston King says, “But what did the Buddha say about meat eating? Here a debate rages even at the present time.”³²⁷ Some Buddhist scholars even suggest that the Buddha does not say that vegetarianism is a “must” to practice Buddhism. For instance, Keown writes, “The earliest sources depict the Buddha as following a non-vegetarian diet and even resisting an attempt to make vegetarianism compulsory for monks.”³²⁸ Besides the concern of incompatibility, how could Buddhists argue for Proposition B? As far as I could see, there are no good texts or arguments to support Proposition B. Proposition A is the furthest that Buddhists could argue.

Phillip Lecso might try to support Proposition A in a different way. He examines this issue from the Jataka Tales. Lecso suggests that moral claims among living beings are blurred. He writes, “A reflection of this view of unity of all life forms is reflected in the Jataka Tales portion of the Buddhist scriptures...Thus, the sharp distinctions present in Judeo-Christian concepts between humans and animals are significantly blurred. Moral or utilitarian claims by one species over another are also blurred.”³²⁹ There are two possible interpretations of his message. First, Lecso might mean Proposition A, but I doubt it since it is hard to tell that he argues for it in his article. Second, it is more likely that he has Proposition B in mind. For his statement, “moral or utilitarian claims by one species over another are also blurred,” suggests that there should be no moral difference among living

³²⁷ Ibid., p. 282.

³²⁸ Keown 2005, p. 48.

³²⁹ Ibid., p. 309.

beings, i.e., all sentient beings should have the same moral status. Therefore, Lecso probably has the second interpretation in mind. Although no Buddhist scholar has ever clarified and discussed the difference between Proposition A and B, I will not go further since my discussion is adequate for the sake of comparison between East and West.

Finally, what are the relations between Bodhisattva Practice and the four doctrines? I have mentioned the purpose or importance of each doctrine. There is also an advantage in Bodhisattva Practice. Since it comprises “sorrow” wisdom (reason) and compassion (emotion), this also means that Bodhisattva Practice isn’t just an impulse of emotion. An emotional impulse without reason is blind and sometimes dangerous, e.g., the passion for Fascism and Nazism during World War II. R.E. Florida suggests the same.³³⁰ And a moral thought without actions is worthless. Therefore, Bodhisattva Practice is a practice with compassion and “sorrow” wisdom, which will avoid any danger and is morally worthy.

III. Its application to genetic intervention and some concerns

1. Its application

We can now turn to our topic: How we can apply Bodhisattva Practice to genetic intervention. Unlike the Western approach, Buddhists ask this question first: “Why do we want to do genetic intervention?” Based on Bodhisattva Practice, Buddhists are able to offer two different bases and distinguish a moral line between genetic therapy and enhancement. Table 2 outlines the Buddhist approach.

³³⁰ Florida 1991, p. 40.

Table 2	Why do we want to do genetic intervention?	
	Genetic Therapy	Genetic Enhancement
Bodhisattva's answers	Because of compassion	Because of craving

According to Bodhisattva Practice, we want to do genetic therapy because of our compassion, and enhancement because of our craving. Bodhisattva is obliged to do genetic therapy because Bodhisattva's compassion is unconditional, deeper, broader, and there are no degrees in it. Thus, genetic therapy is obligatory and permissible for Buddhists. However, genetic enhancement is different since its basis is our craving and our craving has no truly moral status. Therefore, for Buddhists, genetic enhancement is morally neutral and is either permissible or impermissible. After understanding these two different bases for genetic therapy and enhancement, Buddhists are able to discern a moral line between them. Moral disputes about genetic intervention should reside on the side of genetic enhancement, which is what LeRoy Walters and Julie Palmer argue. They try to draw a moral line between health related and non-health related enhancement.

Generally speaking, as long as we can demonstrate that genetic enhancement has some preventive or therapeutic purposes or intentions, Buddhists will contend that it is morally obligatory. This should solve cross-border enhancement, e.g., Torres's MDR example. Let us consider Moseley's example more thoroughly since it is more complicated than Torres's. What should Buddhists say when genetic therapy has some positive effects on somatic cells and yet has some devastating consequences on the patient's future offspring? Based on the Buddhist moral line, the patient's request is permissible. For as long as genetic

therapy has therapeutic purposes or intentions, we are obliged to it. This answer coheres with the solution that utilizes the Principle of Double Effect. Besides, this scenario poses no threat for the Buddhist moral line since it is not based on the patient's craving. Also, we believe that advanced genetic technology should take care of those devastating problems in future.

Let us consider a more challenging case. Suppose that a patient needs genetic therapy. However, at the same time, she has the primary desire to have her germ-line cells modified or enhanced to insure that her offspring have a better competitive edge. Then, it is difficult to draw a line between compassion and craving in this case. What should Buddhists say? Since this case still has therapeutic purposes whatever they are, Buddhists should not say no. Then how about the craving involved? Since our craving is morally neutral, it is not contradictory to say yes to the patient's request.

In my opinion, the Buddhist approach to genetic therapy is better than the Western one since Buchanan et al.'s basis, justice as fair equal opportunity lacks moral clarity. They suggest that genetic therapy is not necessarily obligatory/nonobligatory or permissible/impermissible. By contrast, the Buddhist approach has a strong moral basis. With respect to genetic enhancement, the Western approach can give more specific guidelines than the Buddhist one since the latter cannot offer any clear guidance besides "caution," which is too vague to be of any practical value. However, on the Buddhist approach, we are required to think first about why we want to do genetic enhancement since all forms of genetic enhancement are our cravings, which are morally neutral. Therefore, genetic enhancement is not morally obligatory. As more and more genes are identified with traits, e.g., tallness, stupidity, and beauty, some geneticists, e.g., the Nobel Prize Laureate James Watson, have argued that these traits are "technically" diseases, and

so we need to do something about them. However, if we ask the Buddhist question first, we will realize that they are not “diseases.” They are instead our cravings. We are not really suffering from height but from our craving. Enhancing our height won’t stop our suffering. There is no stop sign for our craving. We will keep wanting more and more enhancement of our traits. Where will this take us? I believe nowhere. On the contrary, it may cause more problems. For instance, if society does not have a fair system for distributing trait enhancements, injustice will certainly arise and make matters worse. That is a legitimate concern. Although trait enhancements are generally not appealing to Buddhists, Buddhists shouldn’t condemn them without any good reasons. For example, Buddhists should not oppose genetic enhancement (e.g., memory) that has an intrinsic benefit.

In Chapter 3, I identify six important factors that complicate the supposedly morally arbitrary distinction between genetic therapy and enhancement. Let us recall them and see how the Buddhist approach can respond to them. The six factors are: (1) a strong assumption, (2) the definition of disease and health, (3) the moral bases, (4) our intentions or the purposes of genetic intervention, (5) the technological classification, and (6) three kinds of “can.”

First, there is a strong assumption that genetic therapy is permissible and enhancement is impermissible. Obviously, this is not what Buddhists assume, but they instead examine this question first: Why do we want to do genetic intervention? Responding to this question, Buddhists give two answers, compassion and craving, and use them as the bases to discern the moral distinction between genetic therapy and enhancement. This solution also takes care of (3).

Second, drawing the moral line requires a clear account of disease or health. How to define a clear account of disease seems impossible as shown in Chapter 2 and 3. Therefore,

all approaches to the moral distinction will have the same problem of defining disease. If so, the best approach is the one that can avoid this problem. The Buddhist approach may be able to do this by looking at the bases we use rather than by giving a clear account of disease or health. That is, based on Bodhisattva's compassion, we ought to offer medical services involving genetic intervention as long as they serve some therapeutic purpose or intention. James Humber and Robert Almeder also argue that, as long as our aim is to relieve suffering, a clear definition of disease won't be so important for practical purpose. They write, "Furthermore, if Banja's account is correct, a definition of disease will never be terribly important for practical purpose since clinical praxis will be more oriented to the relief of suffering regardless of whether that suffering is labeled a disease, malady, impairment, syndrome, ailment, disability, or whatever."³³¹ It does not matter, then, whether we have a clear account of disease or health. Some might not be satisfied with this solution because they think that it does not make much sense. If this is the case, then the burden of giving a clear definition of disease or health is on the medical doctors and biologists, not on Buddhists.

Third, as I have discussed in Chapter 3, we have to use two different bases to draw the moral line. Buchanan et al.'s single basis, justice as fair equal opportunity, won't be able to do the job. Since Buddhists have two different bases, a more important question for them is: How good (or useful) are their bases? Bodhisattva's compassion serves as a morally solid basis, and the Buddhist two bases are jointly adequate to distinguish the moral line for genetic intervention. However, I don't think that the basis of craving is very useful. Thus, I will offer a different pair of bases in Chapter 5.

Fourth, what are the intentions or purposes of genetic intervention? I mention two

³³¹ Parens, ed., 1998, pp. 247-248.

examples, Torres's MDR and Moseley's example, to illustrate this point. For Buddhists, this concern is not a problem. As I have expounded, as long as genetic intervention has therapeutic intentions or purposes, Buddhists will agree that we should provide medical assistance. However, this does not mean that we can provide all kinds of genetic intervention.

Fifth, there is a difficulty of technological classification. In a sense, this difficulty is similar to (2). However, unlike the definition of disease, the classification difficulty can be resolved through scientific research. As we gain more and more genetic knowledge, we should be able to classify much better what counts as genetic therapy and enhancement. Also, the Buddhist approach can work around this difficulty the same way as it does with (2). If not, the burden of classifying what counts as genetic therapy and enhancement is on medical doctors and biologists, not on Buddhists. Therefore, the difficulty of technological classification should not pose any new challenge for Buddhists.

Sixth, there are three kinds of "can." The Buddhist approach only claims a moral or epistemological "can" rather than a resource related "can." Therefore, this should not be a problem for Buddhists. In a nutshell, the Buddhist moral line is able to meet the challenges posed by these six concerns.

2. Some concerns

Although I prefer the Buddhist approach, there are some concerns about it. First, some say that Bodhisattva Practice is too ideal and too difficult to achieve. For instance, Andrew Skilton writes, "The Path followed by the Bodhisattva is extremely long and arduous and conceived as lasting for many life times, through many aeons."³³² Jay Garfield also says, "The aim and the motivation of *bodhicitta* is the alleviation of the suffering of all sentient

³³² Skilton 2000, p. 111.

beings. That is beyond question. It also comprises the view that only a buddha could accomplish this task, given its stupendous difficulty.”³³³ Garfield’s statement is only partially right. He misses the main point. The main rationale for concern about this difficulty is that everyone can become a Buddha but one must pursue Bodhisattva Practice diligently and resolutely. Consider the following Buddhist anecdote. After killing many people on battlefields, a man finally got what he wanted; he became a powerful king reigning over a large country. But after all this, he somehow became cognizant about what he did and regretted his actions enormously. So he went to see a venerable Buddhist monk for answers. He asked: Is it too late to become a Buddha? The wise monk said, “No, it is never late to become a Buddha. If you lay down your ‘butcher knife,’ you could become a Buddha instantly.” As the story ended, that man became a great king and Buddhist. What this story implies is that it is never too late for us (even for the most notorious killers) to seek for “self-perfection” or to become a Buddha. If we could let go of everything and free ourselves, we will be enlightened and “see” the true Buddha Nature is in us too. We must pursue Bodhisattva Practice diligently and persistently because it is so arduous.

Both Jeremiah Conway and Patricia Walsh-Frank also think that Bodhisattva’s compassion is either too ideal or too overwhelming. I wouldn’t say that either is true. I would say, however, that it does demand a lot out of us to become a Bodhisattva. But that is the whole purpose of Bodhisattva Practice. Besides, it doesn’t mean that Bodhisattva Practice is impossible. For instance, although Mother Teresa isn’t a Buddhist, she is a good example of Bodhisattva Practice. And another is the venerable master Zheng Yan in Taiwan. Some people call Zheng Yan “Taiwan’s Mother Teresa.”

³³³ Ibid., p 518.

There is an argument against Bodhisattva's compassion.³³⁴ Wendell C. Beane argues that the Buddhist notion of compassion is incoherent with the "no-self" doctrine. First, if Buddhists believe in both LK and "no-self," we cannot give a consistent account to accommodate both (p. 441). Second, to make this matter worse, if there is no such an agent as "I", how can "no-self" experience compassion? This is impossible. Beane writes, "The essential problem takes its form when such a concept as 'Universal Momentariness' ['no-self'] undergoes a theoretic, logical transposition, or systematic alignment, with the realm of Karma as moral 'renunciation' and moral 'compassion'—especially the experience of compassion (=Karuna)." ³³⁵ Beane concludes that there cannot be an experience of compassion without a unified agent "I" (pp. 454-455).

Beane is not right for five reasons. First, his first proposition can be easily refuted. Let us rephrase his argument. Beane argues that if there is no agent "I" or self, then the experience of compassion is impossible. By *Modus Tollens*, since we experience compassion, there must be an "I" or self. This seems intuitively right, but it may not be. To see why, let us contrast it to one of the Buddhist arguments for "no-self." If there is a self, then the intrinsic property of life should be pleasure rather than suffering. For why would life prefer suffering to pleasure? No one wants suffering but everyone wants pleasure. Therefore, by *Modus Tollens*, since the intrinsic property of life is suffering, there is no "I" or self. So which argument is valid and sound? Both are valid. Which one is sound? I think

³³⁴ There is an interesting observation. It seems that only western Buddhist scholars have suggested or argued against the relation (or consistency) among LK, rebirth, and "no-self," while most Eastern Buddhist scholars are trying to explain and defend them. Why is there such a different attitude toward those ideas? Some western authors are even "rude" to Buddhism. For instance, Jay Garfield writes about John Powers (personal communication): "In fact, he argues, if you don't believe in future lives, the best way to rescue all sentient beings from suffering is to kill them all, right now." (p. 520)

³³⁵ Ibid., p. 448.

that the Buddhist argument is sound. Some primates, e.g. chimpanzees and gorillas, demonstrate some sort of “compassion” to take care of companions’ orphan babies.³³⁶ Also, some British biologists have recently discovered that elephants in Kenya show grief over their own kind. They observe that elephants sense and touch their dead companions’ bones and ivories for a long time and seem to grieve over their deaths. If these reports are true, it means that we don’t need an “I” to experience compassion since these animals lack a sense of the first-person. So Beane’s argument may not be sound. By the same token, if we don’t agree that life is inherently suffering, then the Buddhist proposition is false. However, it is more difficult to demonstrate that life is not inherently suffering than to show that there must be an “I” to experience compassion. For it is obvious that we have many kinds of craving all the time. Therefore, the Buddhist argument stands in a much better position to be sound than Beane’s.

Second, Beane’s objection to the “no-self” doctrine is based on the idea of momentariness, which means that a self exists only momentarily. Most Buddhists do not accept this interpretation. Therefore, Beane’s argument may not be right.

Third, if we interpret “no-self” differently, it can also mean that there is only a temporary self, which is slightly different from the momentariness view. Kenneth Inada calls “no-self” a conventional self and say, “This is not to say, however, that the self does not exist at all in everyday practical affairs.”³³⁷ Thus, the temporary or conventional self is sufficient to meet Beane’s requirement to experience compassion. Also, Winston King’s explanation of “no-self” above can be used to rebut Beane’s argument too.

³³⁶ We may say that that is not what we mean by compassion. Agreed but then what is it? It, at least, shows some kind of mutual feeling and action for others, which is one of the characteristics of compassion.

³³⁷ Inada 2000, p. 264.

Fourth, we can generally tell how good one's argument or conclusion is by examining how well one understands the subject matter about which one is arguing. As shown above, Bodhisattva's compassion is broader (or more universal), deeper, unconditional, and there are no degrees in it. Beane does not say anything about these characteristics of compassion. He also thinks that Bodhisattva's compassion has degrees or levels as most Westerners do and that it is impossible to reach the highest level. Beane writes, "Buddhist Karuna [compassion], then, if authentic, does raise the issue of the eventuality of a *cumulative* or *consummate compassion*; that is, 'how ... is charity perfected as a virtue if the fact of existence is suffering, and the basis of this is the existential nothingness of phenomena.'"³³⁸ One shouldn't criticize something that one does not understand very well. Moreover, there are the examples of Mother Teresa and Zheng Yan to support Bodhisattva-like compassion.

Fifth, most Buddhists will not agree with Beane. For instance, Peter Slater says that there is no contradiction between "no-self" and compassion. He writes,

As a compassionate bodhisattva, she naturally took the forms which her fisher-folk followers expected her to take...Here we touch on the doctrine of "No Self" at the heart of the Buddhist concept of wisdom, which is always a corollary to, not a contradiction of, the concept of compassion.³³⁹

Also, as mentioned in my third criticism, most Buddhist scholars do not accept the interpretation of "no-self" that Beane argues against. So Beane is not right.

A second concern is whether Buddhism is a form of determinism. LK seems to lead to determinism since it says that we deserve that with which we are born. What we have and what we are in this life seem determined. K. Sri Dhammananda writes, "Buddhists believe

³³⁸ Ibid., p. 451.

³³⁹ Leslie Kawamura, ed., 1981, p. 10.

that man will reap what he has sown; we are the result of what we were, and we will be the result of what we are.”³⁴⁰

Buddhism is not determinism. As shown, LK is a special case of LDO and focuses only on the moral aspect of LDO. As I have argued, LK alone does not warrant rebirth. Our moral deeds have only certain potentialities. Whether those potentialities will be actualized depends on certain right conditions obtaining. This is what LDO does and I reify it above. Therefore, LK alone does not decide everything. It is a mistake to think that Buddhism is determinism. K. Sri Dhammananda and Donald W. Mitchell also suggest the same thing.³⁴¹ Let us consider another analogy: genetic theory. Does it presuppose determinism? Most biologists and philosophers would say no. Daniel Wikler argues that genes have only certain potentialities; whether genes will actualize their potentialities depends, to some extent, on the environment.³⁴² Some biologists suggest that the environment decides 70% and gene 30% for our traits and capabilities.

A third concern is whether craving is a good moral basis. I think not. Since craving has no truly moral status, we have to specify justifications for every ethical dilemma. For instance, our craving to enhance height, beauty, and eyesight has no truly moral status. Unless we can specify the purposes or intentions of these genetic enhancements, these cravings mean nothing morally. For instance, the aim of enhancing one's memory is to increase individual productivity and thus it may be a good thing for society as a whole. If so, this kind of enhancement has some moral implication. Hence, since craving is too vague to provide any guidance and will need specifications for every predicament we encounter, it is

³⁴⁰ Ibid., p. 89.

³⁴¹ Dhammananda (1993: p. 89) and Mitchell (1975: p. 102).

³⁴² Buchanan et al. 2000.

not very useful and helpful as a basis for practical reason. (Even so, it still serves the function of being a basis to demarcate the moral distinction between genetic therapy and enhancement.) Therefore, I suggest that we replace craving with justice as fair equal opportunity as the moral basis for genetic enhancement. For justice as fair equal opportunity has a strong moral status and is easier as a basis for us to make up rules and policies than craving. I offer my approach in Chapter 5 based on this idea.

A fourth concern is that there might be a weak distinction between compassion and craving. Unless one can argue that all cravings are “diseases,” which makes no sense, I don’t see that there is any weakness. For if all cravings are “diseases,” based on Bodhisattva’s compassion, we are obliged to treat them all. And then, there will be no moral difference between Bodhisattva’s compassion and craving. If so, the Buddhist moral line won’t hold. Of course, we may consider some cravings “diseases,” for example, the addictive craving for drugs and cigarettes. But we cannot claim that all cravings are “diseases.” Besides, Buddhism would be in jeopardy since we could eradicate our primordial suffering through science and medicine. For if we could identify all cravings as “diseases,” we could just invent pills to “cure” them. For example, we could just take pills to quell our cravings for materials, money, fame, and eternity. If so, we do not need Buddhism to relieve our suffering. Then, it would be a wonderful world to live in. However, the only problem with this scenario is that we are talking about science fiction here.

A fifth concern is that although there is no truly moral ground to support genetic enhancement, Buddhists realize that we will still be doing it. (Note: Buddhists don’t condemn genetic enhancement. They only ask us to think why we want to do it.) Then, what would Buddhists say about genetic enhancement? First, they may say that we are asking for trouble for ourselves. We are born and equipped with adequate capabilities

needed to become a Buddha. There is no need to enhance anything for that purpose. Second, if the first response is no good, the best advice that they could give is, “Proceed to genetic enhancement with caution and ‘sorrow’ wisdom,” which may not help much. As argued above, the Western approach is more helpful. For instance, H. Tristram Engelhardt offers two criteria for restraining genetic engineering: we need to show that the genetic intervention is, in some sense and in principle, immoral, and that the use of genetic engineering will cause more harms than benefits. These two criteria put the burden on those who object to genetic engineering. Although these two criteria are vague and need more clarification, they are more specific than merely caution and “sorrow” wisdom.

Sixth, there might be a potential problem with the Buddhist approach. Since Buddhists say that craving is our fundamental or primordial nature and the cause of suffering, it is a craving, we might say, to want to do genetic therapy. However, unlike the craving for genetic enhancement that comes from our pure desire, the “craving” of doing genetic therapy arises from Bodhisattva’s compassion, which has a strong moral status. Therefore, we are obliged to do genetic therapy. There is another related concern. According to Bodhisattva’s “sorrow” wisdom, shouldn’t Buddhists be compassionate to those who also suffer from the craving of genetic enhancement? Yes, we should but it is not the right cure. The right solution to terminate our suffering from craving, according to Buddhism, is the Four Noble Truths. I mention them above. Since the Four Noble Truths are not my cardinal concern, there is no need to discuss them further.

Seventh, there is an interesting question: Why isn’t the idea of justice or ethics the main philosophical and political topic in Buddhist societies, for instance, Sri Lanka, Tibet, China, Taiwan, Korea, Japan, and early India? Winston King thinks that it is because the Western way of analyzing ethics is simply a secondary value for Buddhists. Buddhists are more

interested in psychologically analyzing and perfecting “self” than in seeking the foundation of ethics (pp. 4-5). Damien Keown also raises a similar question: Why is Buddhist ethics not helpful for today’s ethical dilemmas? Keown suggests that Buddhist ethics has not been updated due to the fact that Buddhist societies have not progressed in the same way as the Western countries. To say it bluntly, Buddhist ethics is a “third-world phenomenon” and is totally out of date.³⁴³

So Buddhist ethics needs to be updated. But how? Without a doubt, this will be an important challenge for Buddhists. Damien Keown also emphasizes this: “Some progress is therefore being made, but it is difficult to disagree with Kosho Mizutani when he writes: ‘I submit that a study of Buddhism that emphasizes its ethical aspects will be the most important task facing Buddhists in the twenty-first century.’”³⁴⁴ Since some of those Buddhist countries are now catching up with Western counterparts, there is an urgent need to update Buddhist ethics and then to respond to new ethical challenges. Although Keown tries to update Buddhist ethics, I don’t think that he succeeds. For Keown does not really capture the true meaning of Buddhism. He approaches Buddhism based on Western thinking. For instance, Keown never realizes and utilizes those four characteristics of Bodhisattva’s compassion for Buddhist ethics.

Since my concern is genetic intervention, I would like to point out a new challenge for Buddhists: capitalism. Capitalism is one of the central ideas in the Western system. Some problems with capitalism could also arise in the case of genetic intervention. In my judgment, capitalism makes people more selfish, sophisticated, and complicated.

³⁴³ Keown 1995, pp. 7-10.

³⁴⁴ Ibid., p. 8.

Therefore, society needs concise and specific rules and laws to operate effectively.³⁴⁵

There are two ways that Buddhists can help. While trying to provide new ethical guidance for modern capitalist society, they should also point out what is wrong with capitalism. Thus, Buddhists have two concerns about capitalism (and genetic enhancement too), which I will briefly discuss.

(1) Will capitalism be a good thing for human beings? If it is a good thing in general, it means that money can increase (or buy) happiness. However, some researchers show that that is not true most of the time. As I mention in Chapter 1, 3Com Company did an internet survey worldwide in November 2000 to see whether people felt happy. An average of 35% of people worldwide felt happy. We may think that the USA, the most “affluent” and maybe the “richest” country in the world, ought to have the highest percentage but it didn’t. Columbia of South America had the highest rate at 73%. Other surveys show similar results.³⁴⁶ Dr. Richard Easterlin of the Economics Department of the University of Southern California has surveyed 1500 people every year since 1975 and has found that money cannot buy happiness and that people won’t feel happier if they have more money after certain amounts of incomes (e.g., \$50,000 annually). Therefore, the connection between capitalism and happiness may not be as strong as we might have expected. If so, we may want to reconsider whether capitalism is good for society. And this is exactly what the government of Bhutan, a Buddhist country near Nepal, is doing. It thinks that the government should focus more on Gross National Happiness (GNH) than on Gross National Product (GNP) and that GNH is not necessarily equal to GNP. GNP may not even be the primary contribution to GNH.

³⁴⁵ I think that this is one of the main reasons why justice becomes the dominant ethical principle.

³⁴⁶ Nevertheless, the USA was in the top 5-10 in every survey.

With regard to genetic enhancement, we can ask two similar questions: Will genetic intervention be a good thing for human beings and will it make people happier? Buddhists will reserve their answer for the first but they will say no to the second. They will reserve their opinion for the former because they don't condemn or encourage genetic enhancement. But they will deny the latter because genetic enhancement is our craving and there is no stop sign for this craving. We will just keep wanting more and more genetic enhancement like money. Thus, it won't make people happier. On the contrary, people will agonize or suffer more since they won't be able to stop their craving for genetic enhancement.

(2) While needing concise and specific rules and laws to operate effectively in a capitalist society such as the US, we also need to cultivate ethical virtues to fight human greed. Since ethical virtues seem to be ignored in the US today, we need to emphasize virtue rather than rules and laws. This is where Buddhists can help since Buddhism is a practice of "self-perfecting." It is obvious that rules and laws alone couldn't prevent Enron's, Tyco's, WorldCom's, and other companies' accounting frauds, which were caused by human greed. These companies' CEOs thought that they could do anything to make big money as long as they didn't break the rules and laws or they could make money by cheating. The same attitude could also be adopted by those who offer genetic intervention. Laws and rules cannot cover all the ethical issues for genetic intervention. There is only so much overlap between ethics and laws. Virtue is needed to fill the void.

An eighth concern is whether the Buddhist approach undermines the Western approach. In a sense, it does. For based on Buddhism, Rawlsians will have no grounds for considering natural and social inequalities as unjust and thus, they cannot appeal to them in their arguments and theories. However, the Buddhist approach only partially undermines the

Rawlsian approach since it affects Rawls's Difference Principle only. This will be an interesting project. However, I will not go further since my focus is Buchanan et al.'s argument against the moral distinction between genetic therapy and enhancement.

Finally, we might think that the Buddhist approach offers nothing new for the moral arbitrariness problem since compassion and craving are not new concepts in Eastern and Western philosophy. However, the point is that no Eastern or Western philosopher considers them a solution for the moral arbitrariness problem. As I have discussed in Chapter 3, Anderson and a few other Western philosophers touch on these two ideas, but they do not take the further step of developing an argument to solve the arbitrariness problem. One reason is that they all think from the perspective of the goals of medicine. Even if they did develop an argument, they could not find any theories to support their argument because the Western idea of compassion is not deep, broad, and unconditional enough to draw a moral line for genetic intervention. By contrast, Buddhists have strong theories or doctrines to support their position. The only problem is that no Buddhists have paid attention to this subject.

IV. Conclusion

In this chapter, I explain the notion of “desert” from the Eastern and the Western perspective. It explains in part why the two approaches are different. After that, I introduce four Buddhist doctrines important to understand Bodhisattva Practice. Then, I explain the central idea of Buddhist ethics—Bodhisattva Practice and how it can be applied to genetic intervention. Finally, I raise some concerns about the Buddhist approach and offer some possible Buddhist responses. I will derive my approach from the Buddhist and the Western approach in my next and final chapter.

Chapter 5: My Approach and Conclusion

In the last chapter of my dissertation, I would like to offer my approach that extracts the best ideas or arguments from Buchanan et al.'s and the Buddhist approach. Although Buchanan and his co-authors have the problem of defining disease (Chapter 2) and more importantly, they cannot demarcate the moral difference between genetic therapy and enhancement (Chapter 3), their approach is more helpful for guiding genetic enhancement. In contrast, although the Buddhist approach can draw a moral line for genetic intervention, it is not very useful for directing genetic enhancement (Chapter 4). Therefore, mainly based on the Buddhist approach, I propose that we keep Bodhisattva's compassion to justify genetic therapy and use Buchanan et al.'s justice as fair equal opportunity to justify genetic enhancement. Table 4 shows the outline of my approach. The aim of my approach is to maintain the moral line that Buddhists draw while resolving the weakness of the Buddhist approach. I will elucidate my approach, raise some concerns, and finally, conclude my dissertation.

Table 4	Genetic Therapy	Genetic Enhancement
What justification do we use?	Use Bodhisattva's compassion	Use Buchanan et al.'s justice
Obligatory/Nonobligatory	Obligatory	Not necessarily obligatory
Permissible/Impermissible	Permissible	Not necessarily permissible

I. My approach

Since Bodhisattva's compassion requires us to relieve all suffering, we are obliged to do genetic therapy and thus genetic therapy is permissible. Since Buchanan et al. and Buddhists propose that genetic enhancement is either permissible or impermissible, we are not obliged to do genetic enhancement. It depends on whether we can find a justification for it. Like the Buddhist approach, on my approach, we can draw a moral line for genetic intervention; the moral predicaments will mostly reside at the enhancement side. Let us see how my view can accommodate those six factors that tangle the moral line, which are mentioned in Chapter 3. Recall those six factors: (1) a strong and wrong assumption, (2) the definition of disease or health, (3) the moral bases, (4) the intentions or purposes of genetic intervention, (5) the technological classification, and (6) three kinds of "can."

First, there is a strong but mistaken assumption that genetic therapy is permissible and enhancement is impermissible. Like the Buddhist approach, my approach does not make this assumption either. Therefore, my view does not have this problem.

Second, the moral distinction needs a clear account of disease or health. As I argue in Chapter 2 and Chapter 3, it is impossible to define a clear account of disease or health. So the best approach is to eschew a clear definition of disease. John D. Banja asserts that as long as the medical doctors and researchers incorporate our values, knowledge bases, and problem-solving strategies into a coherent system, the definition of disease is not a necessity.³⁴⁷

I expound in Chapter 4 how Buddhists can avoid the definition of disease. Since my approach is mainly based on theirs, it has the same advantage. My approach also focuses on the two different bases we use rather than on a clear account of disease. That is, as long as

³⁴⁷ James Humber and Robert Almeder, eds., 1997, p. 262.

genetic intervention serves some therapeutic purposes, based on Bodhisattva's compassion, we are obliged to do it. But again, this does not mean that we are able to do all forms of genetic therapy (and therapeutic enhancement) because there are three kinds of "can."

Third, what moral bases should we use? As I argue in Chapter 3, we have to use two different bases to determine a clear moral line for genetic intervention. Like the Buddhist approach, my approach meets this requirement. However, this does not mean that we will always be able to draw a moral line whenever there are two different bases. Any pair of two bases also has to be able to respond to the other five factors.

Fourth, what are the intentions or purposes of genetic intervention? As with the Buddhist approach, mine won't have this problem either. As long as genetic intervention has therapeutic intentions or purposes, we are obliged to do it based on Bodhisattva's compassion. Again, this does not mean that we are able to provide all services because there are resource limitations.

Fifth, there is a difficulty of technological taxonomy. Like the Buddhist approach, this is not a problem for me. As we gain more and more genetic knowledge, we should have a much better classification among those four (or six) kinds of genetic intervention. If not, it is physicians' and scientists' job to classify them clearly. Besides, since every approach will suffer the same problem (as well as the problem of defining disease or health), the best approach, again, is to dodge this difficulty. My approach as well as the Buddhist one has the same advantage since both focus on the moral bases rather than on the definition of disease or on the technological classification.

Sixth, there are three kinds of "can." My view and the Buddhist view only claim a moral or epistemological "can" rather than a resource related "can." That is, even though we are obliged to do genetic therapy and therapeutic enhancement, this does not mean that

we are able to provide all the therapeutic services, given limited resources. Hence, this is not a problem for my approach.

II. Some concerns

First, although my approach is able to offer some important answers to genetic intervention, e.g., determine a moral line for genetic intervention, there is one concern: Is my approach consistent or systematic?³⁴⁸ (1) Although my approach is not systematic, I don't see any inconsistency. For instance, there is no contradiction between compassion and justice as fair equal opportunity even though Buddhists do not agree with the Western notion of "desert." As I have shown in Chapter 4, Buddhists do not question who deserves genetic therapy (or enhancement) since Bodhisattva's compassion is unconditional and universal. Although Buddhists accept that we are responsible for our own social or natural inequalities, the notion of "desert" does not play any role in Bodhisattva's compassion. In addition, my chief rationale for adopting Buchanan et al.'s justice as fair equal opportunity is to have concise guidelines for genetic enhancement rather than to focus on whether people deserve genetic enhancement. My view is not based on the notion of "desert." Hence, there is no inconsistency in my approach.

(2) My approach is not systematic just like Beauchamp and Childress's principlism, which suggests that we "patch up" four principles to solve all biomedical dilemmas. For my approach is not completely framed within the Buddhist tradition or within the Western approach. It extracts one moral basis from each approach.

A systematic approach is always better than "patched-up" principlism for two reasons. First, for principlism, it is difficult to tell when we could stop adding new principles to solve our ethical predicaments. Since we will always have new ethical challenges, there is

³⁴⁸ The Buddhist approach does not have this concern since both of its bases are from Buddhism.

no end for principlism. Even worse, we might have to use inconsistent principles to justify answers to our ethical quandaries. If this is true, then principlism is inherently flawed. Second, it will be a daunting task to figure out how to balance competing principles. In a well-known thought experiment, the protagonist has to lie to German Nazis in order to save her Jewish friends in World War II. If she didn't lie, her friends would be captured and killed. By the same token, our protagonist could be torched to death if she did not tell the truth. So how should she have balanced the principle between "Self-preservation" and "Don't lie"? There is no fact of the matter on how she ought to have decided. Besides these two problems, principlism won't have the characteristics of simplicity, completeness, and derivation.³⁴⁹ In a sense, my approach has a less serious problem than Beauchamp and Childress's principlism. For my focus is specific and only on genetic intervention rather than on the whole terrain of biomedical ethics. Also, we use only two ideas (or principles): compassion and justice as fair equal opportunity. We don't need to add any more principles or ideas to my view. Moreover, there is no balance problem since we are not talking about two competing principles or ideas.

Two important questions for a non-systematic approach are, "Is there any contradiction in the approach?" "Is it useful and practical enough to show some guidelines?" My answer to the first question is no, as I argue above, and yes to the second. For although my (and the Buddhist) approach doesn't require that we are able to provide all therapeutic services given resource limitations, it does offer moral guidance for genetic intervention, which I think is the most important ethical issue for genetic intervention. So my approach is useful in that regard.

Second, since my and the Buddhist approach claim that we can provide a moral line for

³⁴⁹ See Beauchamp and Childress 2000, pp. 44-47

genetic intervention, can our moral line pass Buchanan et al.'s four criteria of usefulness in a public policy domain? Let us recall the four criteria: (1) Will the public and physicians consider it fair on reflection? (2) Can it be monitored within reasonable effectiveness in a practical sense? (3) Can society afford it? (4) Can it be sustained over time?³⁵⁰

Before we discuss these questions, we need to know three things. First, since both the Buddhist and my approach have many of the same characteristics, it is fair to say that if one fails these four tests, the other won't likely hold up either. Second, since Buchanan and his associates do not give a detailed explication for why their approach can pass these four tests better than the other two views, I will do so. Third, if we think carefully about these four tests, it is difficult to answer them by considering one approach only. It is better to answer them on a comparative basis. Therefore, I will compare these four tests based on Buchanan et al.'s and my approach.

(1) Is my approach fairer than Buchanan et al.'s? If we look at only what bases we use, Buchanan et al.'s approach could pass this test better. For their approach is all about justice as fair equal opportunity and mine has only justice as fair equal opportunity for genetic enhancement. However, this analysis is superficial. For in regard to fairness, it is more important to provide a clear moral line than to respond to the test itself. If we can offer a clear moral line, we are able to maintain a fair game much better than the one that cannot. Buchanan et al. should agree with this claim since it is exactly what they are concerned about. Since Buchanan et al.'s approach cannot demarcate a moral line but my approach can, my approach can pass this test better than theirs.

(2) In a practical sense, is my approach more effective than Buchanan et al.'s? At first thought, we might think that Buchanan et al.'s approach will pass this test better. For it may

³⁵⁰ Ibid., p. 142.

not be practical to claim that all forms of genetic therapy are obligatory since it is a very strong claim and may not be realistic. However, remember that there are three kinds of “can.” If we are obliged to do all types of genetic therapy, it does not mean that we can perform all of them, given resource limitations. Therefore, I shall reserve my answer for this test since it is hard to tell which can pass it better.

(3) Which is more affordable? I think that this is not a realistic question for both approaches since we don’t know how to calculate the total cost for each approach. If so, this test is meaningless. Buchanan et al. adopt this criterion because we can relatively tell that both the brute-luck view and resource egalitarianism require more resources than their approach, even though we cannot calculate the total cost for each approach. For instance, it is impossible that society can afford to equalize every person’s social and natural inequalities—resource egalitarianism. So Buchanan et al.’s view is relatively more affordable than the other two. They can claim that their approach can pass this test better than the other two. However, this is not the case here. As I argue, my approach does not require that society must provide all types of genetic therapy. Therefore, I shall reserve my answer for this test since we don’t know the total cost for both Buchanan et al.’s and my approach even in a relative sense.

(4) Can my approach be sustained over time better than Buchanan et al.’s? I believe so. Since my approach offers a clear moral line and Buchanan et al.’s cannot, mine will pass this test better than theirs. In sum, since my approach has the advantages of (1) and (4), and both approaches stand equally on (2) and (3), we can assert that generally my approach passes these four tests better than Buchanan et al.’s.

Third, can my (and the Buddhist) moral distinction pass Juengst’s epistemic criterion mentioned in Chapter 3? That is, Can we tell when we cross the moral line? I believe so.

Unlike Buchanan et al.'s single basis, my approach has two different moral bases. Hence, it won't be difficult to tell whether genetic intervention comes from Bodhisattva's compassion or from justice as fair equal opportunity. The main reason why Juengst raises this criterion is that he assumes that we use only one moral basis, e.g., justice as fair equal opportunity, for both genetic therapy and enhancement. Thus, it is hard for us to discern genetic therapy from enhancement. Once we have two different moral bases, we are able to ease Juengst's concern.

Finally, there is an interesting approach similar to mine. We can replace Buchanan et al.'s basis—justice as fair equal opportunity—for genetic therapy with “compassion” and keep the same basis for genetic enhancement. By doing so, this new approach just looks like mine, which will also have all the advantages I proffer. However, this is not true. There are two problems with this approach. First, we cannot derive this new approach based on Buchanan et al.'s argument. For compassion does not play any role in their argument for genetic intervention. Second, even if we can derive this new approach and even if it is based on the Western idea of compassion, the new moral line won't hold. The new approach cannot claim that all forms of genetic therapy and therapeutic enhancement are permissible. The reason is that the Western idea of compassion is not as deep, broad, and unconditional as Bodhisattva's compassion. Hence, this new approach cannot mark the moral difference between genetic therapy and enhancement. It is a mistake, therefore, to think that this new approach is my approach. They may look alike but there are significant moral differences between them.

III. Conclusion

In Chapter 1, I discuss the general idea of the Western approach to genetic intervention, primarily focusing on Buchanan et al.'s approach. I find that Buchanan et al.'s arguments

are not convincing and identify two underlying problems. First, Buchanan et al.'s definition of disease is not adequate to support their arguments in Chapter 2. Second, their approach cannot offer a clear moral line between genetic therapy and enhancement. In Chapter 3, which is the most important issue throughout my dissertation, I identify six reasons why the moral line between genetic therapy and enhancement seems arbitrary and so complicated.

In Chapter 4, I offer the Buddhist approach, which is different from Buchanan and his co-authors'. Buddhists consider this question first, "Why do we want to do genetic intervention?" Given this question, Buddhists point out our confusion about genetic intervention and offer two bases, Bodhisattva's compassion and our craving, to distinguish the moral difference for genetic intervention. However, although Bodhisattva's compassion is a good and strong moral basis, craving is not. Craving is morally neutral and thus it has no truly moral status. Thus, it is not useful to use it to justify genetic enhancement. To avoid this weakness, I offer my approach in this final chapter. While maintaining all the advantages that the Buddhist approach has, my approach can justify genetic enhancement. However, my approach is not without problems as discussed above.

Finally, my dissertation is a very challenging one since no Eastern or Western Buddhist has worked on this specific subject. I hope that I have contributed some insights to the ethical dilemmas of genetic intervention. Hopefully, we know much better now what to do or what to think in situations involving genetic intervention.

Bibliography

Agar, Nicholas (1995), "Designing Babies: Morality Permissible Ways to Modify the Human Genome" *Bioethics Journal*, Vol 9, Jan., pp. 1-15.

Agich, George (1987), "Justice and Genetic Engineering" in *Explorations in Medicine*, Lamb, David, ed., pp. 22-38.

Agius, Emmanuel, et al., eds. (1998), *Germ-Line Intervention and Our Responsibilities to Future Generations*, Kluwer Academic Publishers, The Netherlands.

Ah, Yueh-yeh (1987), "The Theories of the Bodhisattva's 'Avarana' and 'Kaarana' in the Madhyanta-Vibhagabhasa" *Journal of Philosophical Review—Taiwan*, Vol 10, Jan., pp. 33-71.

Ake, Christopher (1975), "Justice as Equality" *Philosophy and Public Affairs*, Vol 5(2), pp. 69-89.

An, Ok-Sun (1998), *Compassion and Benevolence: A Comparative Study of Early Buddhist and Classical Confucian Ethics*, Lang, NY.

Anderson, W. French (1990), "Genetics and Human Malleability" *Hastings Center Report*, Vol 20(1), pp. 21-24.

Anderson, W. French (1989), "Human Gene Therapy: Why Draw a Line?" *Journal of Medicine and Philosophy*, Vol 14(6), pp. 681-693.

Anderson, W. French (1985), "Human Gene Therapy: Scientific and Ethical Considerations" *Journal of Medicine and Philosophy*, Vol 10, pp. 275-291.

Anderson, V-Elving (1978), "The Importance of the Questions in Assessing Genetic Intervention" in *Modifying Man*, Ellison, Craig, ed., pp. 127-134.

Areen, Judith (1985), "Regulating Human Gene Therapy" *West Virginia Law Review*, Vol 88(2), pp. 153-171.

Audi, Robert (1999), ed., *Cambridge Dictionary of Philosophy*, Cambridge Univ. Press.

Bacchetta, Matthew D & Richter, Gerd (1996), "Dimensions and Classification of Genetic Interventions in the Human Genome" *Cambridge Quarterly of Healthcare Ethics*, Vol 5, pp. 450-457.

Baker, Gale (1987), "Is Equality Enough?" *Hypatia*, Vol 2(1), pp. 63-65.

Baird, Patricia (1994), "Altering Human Genes: Social, Ethical, and Legal Implications" *Perspectives in Biology and Medicine*, Vol 37(4), Summer, pp. 566-575.

Baylis, Francoise and Robert, Jason Scott (2004), "The Inevitability of Genetic Enhancement Technologies" *Bioethics*, Vol 18(1), pp. 1-26.

Beane, Wendell (1974), "Buddhist Causality and Compassion" *Journal of Religious Studies*, Vol 10, Dec., pp. 441-456.

Beauchamp, Tom and Childress, James (1994), *Principles of Biomedical Ethics*, Oxford Univ. Press.

Benatar, Solomon (2001), "Justice and Medical Research: A Global Perspective" *Bioethics*, Vol 15(4), pp. 333-340.

Berger, Edward & Gert, Bernard (1991), "Genetic Disorders and the Ethical Status of Germ-Line Gene Therapy" *Journal of Medicine and Philosophy*, Vol 16, pp. 667-683.

Boorse, Christopher (1975), "On the Distinction between Disease and Illness" *Philosophy and Public Affairs*, Vol 5(1), pp. 49-68.

Bowie, Norman, ed. (1988) *Equal Opportunity*, Westview Press, Colorado, US.

Brody, Baruch (2002), "Book Review: From Chance to Choice" *Ethics*, Vol 112 (2), pp. 359-361.

Brown, W. Miller (1985), "On Defining Disease" *Journal of Medicine and Philosophy*, Vol 10, pp. 311-328.

Buchanan, Allan et. al. (2000), *From Choice to Chance—Genetics and Justice*, Cambridge Univ. Press.

Buchanan, Allen (1996), “Choosing Who Will Be Disable: Genetic Intervention and the Morality of Inclusion” *Social, Philosophy, and Policy Journal*, Vol 13, Sum, pp. 18-46.

Buchanan, Allen (1995), “Equal Opportunity and Genetic Intervention”, *Social, Philosophy, and Policy Journal*, Vol 12, Sum., pp. 105-135.

Buchanan, Allen (1995), “Privatization and Just Healthcare” *Bioethics*, Vol 9(3/4), pp. 220-239.

Campbell, Alastair et al. (2001), *Medical Ethics* 3rd edition, Oxford Univ. Press, N. Y.

Campbell, Angela, et al. (1998), “Describing Our ‘humanness’: Can Genetic Science Alter What It Means to Be ‘Human’?” *Journal of Science and Engineering Ethics*, Vol 4, Oct., pp. 413-426.

Cannold, Leslie (1995), “Women, Ectogenesis and Ethical Theory” *Journal of Applied Philosophy*, Vol 12 (1), pp. 55-64.

Cassell, Eric J. (2000), “The Principles of Belmont Report Revisited: How Have Respect for Persons, Beneficence, and Justice Been Applied to Clinical Medicine?” *Hastings Center Report*, July-Aug., pp. 12-21.

Chapman, Audrey R & Frankel, Mark, eds. (2003), *Designing Our Descendants: The Promises and Perils of Genetic Modifications*, John Hopkins Univ. Press.

Collins, Steven (1998), *Nirvana and Other Buddhist Felicities: Utopias of the Pali Imaginaire*, Cambridge Univ. Press.

Conway, Jeremiah (2001), “A Buddhist Critique of Nussbaum’s Account of Compassion” *Philosophy in the Contemporary World*, Vol 8, Spring, pp. 7-12.

Cooke, Elizabeth (2003), “Germ-Line Engineer, Freedom, and Future Generation” *Bioethics*, Vol 17(1), pp. 32-58.

Cust, Kenneth F. T. (1993), "Justice and Rights to Health Care" *Reason Papers*, Vol 18, pp. 153-168.

D'amico, Robert (1995), "Is Disease a Natural Kind?" *Journal of Medicine and Philosophy*, Vol 20, pp. 551-569.

Daniels, Norman (2000), "Normal Functioning and the Treatment-Enhancement Distinction" *Cambridge Quarterly of Healthcare Ethics*, Vol 9, pp. 309-322.

Daniels, Norman (1985), *Just Health Care*, Cambridge Univ. Press, Cambridge.

Daniels, Norman (1985), *Just Health care: Studies in Philosophy and health Policy*, Cambridge Univ. Press, Cambridge, N.Y.

Daniels, Norman (1985), "Fair Equality of Opportunity and Decent Minimums: A Reply to Buchanan" *Philosophy and Public Affairs*, Vol 14(1), pp. 106-110.

Daniels, Norman (1983), "A Reply to Some Stern Criticisms and a Remark on Health Care Rights" *Journal of Medicine and Philosophy*, Vol 8, pp. 363-371.

Daniels, Norman (1979), "Rights to Health Care and Distributive Justice: Programmatic Worries" *Journal of Medicine and Philosophy*, Vol 4(2), pp. 174-191.

Davis, John, et al., ed. (1978), *Contemporary Issues in Biomedical Ethics*, The Humana Press Inc. Clifton, New Jersey.

Dayal, Har (1970), *The Bodhisattva Doctrine in Buddhist Sanskrit Literature*, Routledge & Kegan Paul Ltd., London.

De-Castro, Leonardo (1999), "Is There an Asian Bioethics?" *Bioethics*, Vol 13(3-4), pp. 227-235.

De-Melo-Martin, Immaculada (2002), "On Cloning Human Beings" *Bioethics*, Vol 16(3), pp. 246-265.

Der Wilt, Gert J.V. (1994), "A Report from the Netherlands: Health Care and the Principle of Fair Equality of Opportunity" *Bioethics*, Vol 8(4), pp. 329-349.

Dhammananda, K. Sri (1993), *What Buddhist Believe*, The Corporate Body of the Buddha Education Foundation, Taipei, Taiwan.

Dougherty, Charles J. and Purtilo, Ruth (1995), "Physicians' Duty of Compassion" *Cambridge Quarterly of Healthcare Ethics*, Vol 4, pp. 426-433.

Dworkin, Ronald (1994), *Life's Dominion*, Vintage Books, New York.

Dyer, Allen R (1997), "The Ethics of Human Genetic Intervention: A Postmodern Perspective" *Experimental Neurology*, 144, pp. 168-172.

Elliot, Robert (1997), "Genetic Therapy, Person-regarding Reasons and the Determination of Identity" *Bioethics*, Vol 11(2), pp. 152-160.

Elliot, Robert (1993), "Identity and the Ethics of Gene Therapy" *Bioethics*, Vol 7(1), pp. 27-40.

Engelhardt, H. Tristram (1996), *The Foundation of Bioethics*, 2nd edition, Oxford Univ. Press, N.Y.

Evans, John H. (2002), *Playing God?* Univ. of Chicago Press, Chicago.

Evans, Martyn (2001), "Designer Babies—Why not?" *New Zealand Bioethics Journal*, Vol 2, Fall, pp. 17-25.

Farrelly, Colin (2002), "Genetic Intervention and the New Frontiers of Justice" *Journal of Dialogue: Canadian Philosophical Review*, Vol 41(1), Winter, pp. 139-154.

Farrelly, Colin (2002), "Genes and Social Justice: A Reply to Moore" *Bioethics*, Vol 16(1), pp. 72-83.

Fletcher, John & Anderson, French (1992), "Germ-Line Gene Therapy: A New Stage of Debate" *Law, Medicine & Health Care*, Vol 20(1-2), pp. 26-39.

Fletcher, John (1990), "Evolution of Ethical Debate about Human Gene Therapy" *Human Gene Therapy*, Vol 1, pp. 55-68.

Florida, R. E. (1994), "Buddhism and the Four Principles" in *Health Care Ethics*, Gillon, Raanan, ed., Wiley and Son, NY.

Friedmann, Theodore and Roblin, Richard (1972), "Gene Therapy for Human Genetic Disease?" *Science*, Vol 175(4025), pp. 949-955.

Fukuyama, Francis (2002), *Our Posthuman future: Consequences of the Biotechnology Revolution*, Farrar, Straus and Giroux, N.Y.

Galton, David (2001), *In Our Own Image: Eugenics and the Genetic Modification of People*, Little, Brown and Company, UK.

Gardner, William (1995), "Can Human Genetic Enhancement Be Prohibited?" *Journal of Medicine and Philosophy*, Vol 20(1), pp. 65-84.

Garfield, Jay (2001), "Nagarjuna's Theory of Causality: Implication Sacred and Profane" *Philosophy East and West*, Vol 51(4), pp. 507-524.

Glannon, Walter (1998), "Genes, Embryos, and Future People" *Bioethics*, Vol 12(3), pp. 187-211.

Green, Ronald (1983), "The Priority of Health Care" *Journal of Medicine and Philosophy*, Vol 8, pp. 373-380.

Gruzalski, Bart (2000), *On the Buddha*, Wadsworth-Thomas, Belmont.

Gupta, Bina (1978), "Another Look at the Buddha-Hume Connection" *Journal of Indian Philosophical Quarterly*, Vol 5, April, pp. 371-386.

Gupta, Rita (1978), "Certain Aspects of the Causal Theories of the Buddhist, Hume and Mill: A Comparative Study" *Journal of Indian Philosophical Quarterly*, Vol 5, April, pp. 319-335.

- Hagen, Steve (2003), *Buddhism Is not What You Think*, Harper, San Francisco.
- Hales, Steven (2001), "Evidence and the Afterlife" *Journal of Philosophia—Philosophical Quarterly of Israel*, Vol 28(1-4), pp. 335-346.
- Harris, John (1999), "Justice and Equal Opportunities in Health Care" *Bioethics*, Vol 13(5), pp. 392-404.
- Harris, John (1993), "Is Gene Therapy a Form of Eugenics?" *Bioethics*, Vol 7(2/3), pp. 178-187.
- Harris, John (1992), *Wonderwoman and Superman: the Ethics of Human Biotechnology*, Oxford Univ. Press, Oxford, New York.
- Harrison, Paul M. (2000), "Manjusri and the Cult of the Celestial Bodhisattva" *Chung-Hwa Buddhist Journal*, Vol 13(2), pp. 157-193.
- Hoedemaekers, Rogeer & Have, Henk Ten (1999), "The Concept of Abnormality in Medical Genetics" *Journal of Theoretical Medical and Bioethics*, Vol 20, pp. 537-561.
- Hofmann, Bjorn (2002), "On the Triad Disease, Illness, and Sickness" *Journal of Medicine and Philosophy*, Vol 27 (6), pp. 651-673.
- Holtug, Nils (1999), "Does Justice Require Genetic Enhancement?" *Journal of Medical Ethics*, Vol 25, pp. 137-143.
- Holtug, Nils (1997), "Altering Humans—The Case For and Against Human Gene Therapy" *Cambridge Quarterly of Healthcare Ethics*, Vol 6, pp. 157-174.
- Holtug, Nils (1993), "Human Gene Therapy: Down the Slippery Slope?" *Bioethics*, Vol 7(3), pp. 402-419.
- Hoose, Bernard (1990), "Gene Therapy: Where to draw the Line?" *Human Gene Therapy*, Vol 1, pp. 299-306.

Huang, Chi-chiang (2003), "The Sinification of Buddhist Causation Theory" *Chung-Hwa Buddhist Journal*, Vol 16, pp. 260-281.

Humber, James M. & Almeder, Robert F., eds. (1997), *What is Disease?* Humana Press, New Jersey.

Ian W., Mabbett (1995), "Nagarjuna and deconstruction" *Philosophy East and West*, Vol 45(2), pp. 203-226.

Inada, Kenneth (2000), "The Nature of Emptiness and Buddhist Ethics" *Chung-Hwa Buddhist Journal*, Vol 13(2), pp. 255-275.

Inada, Kenneth (1985), "Two Strains in Buddhist Causality" *Journal of Chinese Philosophy*, Vol 12, March, pp. 49-56.

Jacobs, Lesley (1996), "Can an Egalitarian Justify Universal Access to Health Care?" *Journal of Social Theory & Practice*, Vol 22(3), pp. 315-348.

Jacobson, Nolan (1976), "Creativity in the Buddhist Perspective" *Eastern Buddhist Journal*, Vol 9, pp. 43-63.

Jones, Charles Brewer (1999), *Buddhism in Taiwan: Religion and the State, 1660-1990*, Univ. of Hawaii press, Honolulu.

Juengst, Eric T (1997), "Can Enhancement Be Distinguished from Prevention in Genetic Medicine?" *Journal of Medicine and Philosophy*, Vol 22(2), pp. 125-142.

Juengst, Eric T. (1991), "Germ-line Gene Therapy: Back to Basics" *Journal of Medicine and Philosophy*, Vol 16, pp. 587-592.

Kahn, Jeffrey P. (1991), "Genetic Harm: Bitten by the Body That Keeps You?" *Bioethics*, Vol 5(4), pp. 289-308.

Kahn, Jeffrey (1991), "Commentary on Zohar's Prospects for Genetic Therapy—Can a Person Benefit from Being Altered?" *Bioethics*, Oct., pp. 312-317.

Kaura, Deepak R. (1996), "Drawing the Line on Genetic Intervention in Humans" *Canadian Medical Association Journal*, Vol 154, pp. 972-929.

Kalupahana, David J. (1995), *Ethics in Early Buddhism*, Univ. of Hawai'i Press, Honolulu.

Kalupahana, David (1976), *Buddhist Philosophy: A Historical Analysis*, Univ. Press of Hawaii, Honolulu.

Kawamura, Leslie (1981), ed., *The Bodhisattva Doctrine in Buddhism*, Canadian Cataloguing in Publication Data.

Keown, Damien (2005), *Buddhist Ethics: A Very Short Introduction*, Oxford Univ. Press, New York.

Keown, Damien (1995), *Buddhism & Bioethics*, St. Martin's Press, NY.

Kerr, Anne, et al. (1998), "Drawing the Line: An Analysis of Lay People's Discussions about the New Genetics" *Public Understanding of Science*, Vol 7, pp. 113-133.

Khushf, George (1995), "Expanding the Horizon of Reflection on Health and Disease" *Journal of Medicine and Philosophy*, Vol 20, pp. 461-473.

Kilner, John F et al., eds. (1997), *Genetic Ethics: Does the Ends Justify the Genes?* Paternoster Press, UK.

King, Winston (1964), *In the Hope of Nibbana: An Essay on Theravada Buddhist Ethics*, Salle IL open court, LA.

King, Lester S. (1954), "What Is Disease?" *Philosophy of Science*, Vol 21 (3), pp. 193-203.

Kitcher, Philip (1996), *The Lives to Come: The Genetic Revolution and Human Possibilities*, Simon & Schuster, NY.

Krimsky, Sheldon (1990), "Human Gene Therapy: Must We Know Where to Stop before We Start?" *Human Gene Therapy*, Vol 1, pp. 171-173.

Kripke, Saul A. (1980), *Naming and Necessity*, Harvard Univ. Press, Cambridge, Massachusetts, USA.

Kumar, Bimalendra (1993), "The Law of Dependent Origination and Relations" *Journal of India Philosophical Quarterly*, Vol 20(4), pp. 391-400.

Lappe, Marc (1991), "Ethical Issues in Manipulating the Human Germ Line" *Journal of Medicine and Philosophy*, Vol 16, pp. 621-639.

Lecso, Phillip (1988), "To Do No Harm: A Buddhist View on Animal Use in Research" *Journal of Religion and Health*, Vol 27(4), pp. 307-312.

Lee, Ellie, et al. (2002), *Designer Babies: Where Should We Draw the Line?* Hodder & Stoughton.

Lennox, James (1995), "Health as an Objective Value" *Journal of Medicine and Philosophy*, Vol 20, pp. 499-511.

Lin, Shyh-Miin (1971), *The Spirit and Characteristics of Buddhism: An Introduction to the Young Students*, Weu-Hwang Publisher, Kaohsiung, Taiwan.

Lindbeck, Violette (1984), "Thailand: Buddhism Meets the Western Model" *Journal of Hastings Center Report*, Vol 14, Dec., pp. 24-26.

Macklin, Ruth (2001), "Bioethics and Public Policy in the Next Millennium: Presidential Address" *Bioethics*, Vol 15(5-6), pp. 373-381.

Magill, Gerard, ed. (2004), *Genetics and Ethics: An Interdisciplinary Study*, Saint Louis Univ. Press.

Makover, Michael (1998), *Mismanaged Care: How Corporate Medicine Jeopardizes Your Health*, Prometheus Books, Amherst, N.Y.

Margolis, Joseph (1976), "The Concept of Disease" *Journal of Medicine and Philosophy*, Vol 1(3), pp. 239-255.

Margolis, Joseph (1986), "Thoughts on Definitions of Disease" *Journal of Medicine and Philosophy*, Vol 11, pp. 234-236.

McGee, Glenn (2000), *The Perfect Baby: Parenthood in the New World of Cloning and Genetics*, 2nd edition, Rowman & Littlefield Publishers, Oxford, England.

Mehlman, Maxwell (2003), *Wondergenes: Genetic Enhancement and the Future of Society*, Indiana Univ. Press, Bloomington.

Mehlman, Maxwell & Botkin, Jeffrey R (1998), *Access to the Genome: The Challenge to Equality*, Georgetown Univ. Press. Washington, D.C.

Merskey, Harold (1986), "Variable Meanings for the Definition of Disease" *Journal of Medicine and Philosophy*, Vol 11, pp. 215-232.

Mitchell, Donald (1975), "Buddhist theories of causation—Commentary" *Philosophy East and West*, Vol 25(1), pp. 101-106.

Mizuno, Kogen (1999). *Basic Buddhist Concepts*, Translated by Terry, Charles & Gage, Richard, Kosei Publishing Co., Tokyo.

Moody, Raymond (1975), *Life after Life and Reflections on Life after Life*, Carmel, N.Y.

Moore, Adam (2000), "Owning Genetic Information and Gene Enhancement Techniques: Why Privacy and Property Rights May Undermine Social Control of the Human Genome" *Bioethics*, Vol 14(2), pp. 97-119.

Mordacci, Roberto (1995), "Health as an Analogical Concept" *Journal of Medicine and Philosophy*, Vol 20, pp. 475-497.

Moseley, Ray (1991), "Commentary: Maintaining the Somatic/Germ-Line Distinction: Some Ethical Drawbacks" *Journal of Medicine and Philosophy*, Vol 16, pp. 641-647.

Moskop, John (1983), "Rawlsian Justice and a Human Right to Health Care" *Journal of Medicine and philosophy*, Vol 8, pp. 329-338.

Motulsky, Arno G. (1983), "Impact of Genetic Manipulation on Society and Medicine" *Science*, Vol 219(4581), pp. 135-140.

Mulgan, Tim (2002), "Neutrality, Rebirth and intergenerational Justice" *Journal of Applied Philosophy*, Vol 19(1), pp. 3-15.

Muller, Stefan et al., eds. (1997), *Interdisciplinary Approaches to Gene Therapy: Legal, Ethical, and Scientific Aspects*, Springer, Berlin, Germany.

Munson, Ronald & Davis, Lawrence (1992), "Germ-Line Gene Therapy and the Medical Imperative" *Kennedy Institute of Ethics Journal*, Vol 2 (2), pp. 137-158.

Murphy, Julien (1989), "Is Pregnancy Necessary? Feminist Concerns about Ectogenesis" *Hypatia*, Vol 4(3), pp. 66-84.

Murphy, Timothy F. & Lappe, Marc A. eds. (1994), *Justice and the Human Genome Project*, Univ. of California Press, Berkeley and LA, CA.

Nakasone, Ronald (1993), "Suffering and Healing: An Interpretation of the Buddhist Doctrine of the Four Noble Truths" *The Journal of Medical Humanities*, Vol 14(2), pp. 81-87.

Nesse, Randolph M. (2001), "On the Difficult of Defining Disease: A Darwinian Perspective" *Journal of Medicine, Health Care and Philosophy*, Vol 4, pp. 37-46.

Neville, Robert (1977), "Suffering, Guilt and Responsibility" *Journal of Dharma*, Vol 2, June, pp. 248-259.

Nolan, Kathleen (1991), "How Do We Think about the Ethics of Human Germ-Line Genetic Therapy?" *Journal of Medicine and Philosophy*, Vol 16, pp. 613-619.

Oldmeadow, Harry (1997), "Delivering the Last Blade of Grass: Aspects of the Bodhisattva Ideal in the Mahayana" *Asian Philosophy*, Vol 7 (3), Nov., pp. 181-194.

Pallis, Marco (1981), *A Buddhist Spectrum*, Seabury-Pr, NY.

Parens, Erik, ed., (1998), *Enhancing Human Traits: Ethical and Social Implications*, Georgetown Univ. Press, Washington, D.C.

Parsons, Howard (1959), "The Challenge of Buddhism Today" *Journal of Aryan Path*, Vol 30, pp. 436-442.

Pellegrino, Edmund (1989), "The Review of Nature of Disease" *The Quarterly Review of Biology*, Vol 64 (1), p. 101.

Persson, Ingmar (1997), "Genetic Therapy, Person-regarding Reasons and the Determination of Identity—A Reply to Robert Elliot" *Bioethics*, Vol 11(2), pp. 161-169.

Person, Ingmar (1995), "Genetic Therapy, Identity and the Person-regarding Reasons" *Bioethics*, Vol 9 (1), pp. 16-31.

Penelhum, Terence (1975), *Hume*, St. Martin's Press, New York.

Pensa, Corrado (2001), "A Buddhist View of Ecology: Interdependence, Emptiness, and Compassion" *Journal of Dharma*, Vol 26, March, pp. 36-46.

Peters, Ted (1997), *Playing God? Genetic Determinism and Human Freedom*, Routledge, N.Y.

Peters, Ted (1995), "Playing God and Germline Intervention" *Journal of Medicine and Philosophy*, Vol 20, Aug., pp. 365-386.

Plamintr, Sunthorn (1994), "Getting to Know Buddhism" Buddhaddhamma Foundation, Bangkok, pp. 109-131.

Pogge, Thomas W (2001), "Critical Study: Rawls on International Justice" *The Philosophical Quarterly*, Vol 51 (203), pp. 243-253.

Porter, Jean (1990), "What is Morally Distinctive about Genetic Engineering?" *Human Gene Therapy*, Vol 1, pp. 419-424.

Powers, Madison (2001), "Justice in the Genetic Age" *Hastings Center Report*, Sept-Oct., pp. 47-48.

Querido, Rene, ed., (1997), *A Western Approach to Reincarnation and Karma: Selected Lectures and Writings by Rudolf Steiner*, Anthroposophic-Pr, Hudson.

Ratanakul, Pinit (1988), "Bioethics in Thailand: The Struggle for Buddhist Solutions" *Journal of Medicine and Philosophy*, Vol 13, Aug., pp. 301-312.

Rachels, Stuart (1999), "Contingent Future Persons" edited by Nick Fotion and Jan C. Heller, *Bioethics*, Vol 13(2), pp. 160-167.

Rachels, Stuart (1998), "Is It Good to Make Happy People?" *Bioethics*, Vol 12(2), pp. 93-110.

Rawls, John (1999), *A Theory of Justice*, revised edition. Harvard Univ. Press, USA.

Redlich, F.C. (1976), "Editorial Reflections on the Concepts of Health and Disease" *Journal of Medicine and Philosophy*, Vol 1(3), pp. 269-280.

Reichenbach, Bruce (1990), *The Law of Karma: A Philosophical Studies*, Univ. of Hawaii, Honolulu.

Resnik, David (2000), "The Moral Significance of the Therapy-Enhancement Distinction in Human Genetics" *Cambridge Quarterly of Healthcare Ethics*, Vol 9, Summer, pp. 365-377.

Resink, David (1994), "Debunking the Slippery Slope Argument against Human Germ-Line Gene Therapy" *Journal of Medicine and Philosophy*, Vol 19, pp. 23-40.

Reznek, Lawrie (1995), "Disease about Kinds: Reply to D'amico" *Journal of Medicine and Philosophy*, Vol 20, pp. 572-584.

Reznek, Lawrie (1987), *The Nature of Disease*, Routledge & Kegan Paul Ltd., London.

Richter, Gerd & Bacchetta, Matthew (1998), "Interventions in the Human Genome: Some Moral and Ethical considerations" *Journal of Philosophy and Medicine*, Vol 23(3), pp. 303-317.

Roberts, Lani (2001), "Barriers to Feeling and Actualizing Compassion" *Philosophy in the Contemporary World*, Vol 8 (1), Spring, pp. 13-19.

Rosenberg, Alexander (1995), "Equality, Sufficiency, and Opportunity in the Just Society" *Social, Philosophy, and Policy Journal*, Vol 12, Sum., pp. 54-71.

Ross, Nancy (1980), *Buddhism: A Way of Life and Thought*, Knopf, NY.

Rotehstreich, Nathan (1977), "The Biological Revolution and Ethical Awareness" *Journal of Philosophy Forum—Dekalb*, Vol 15, May, pp. 245-260.

Sade, Robert M. (1995), "A Theory of Health and Disease: The Objectivist-Subjectivist Dichotomy" *Journal of Medicine and Philosophy*, Vol 20, pp. 513-525.

Samuels, Jeffrey (1997), "The Bodhisattva Ideal in Theravada Buddhist theory and practice: A reevaluation of the..." *Philosophy East and West*, Vol 47(3), pp. 399-407.

Sass, Hans-Martin (1998), "Introduction: Why Protect the Human Genome?" *Journal of Medicine and Philosophy*, Vol 23(2), pp. 227-233.

Sass, Hans-Martin (1983), "Justice, Beneficence, or Common Sense?: The President's Commission's Report on Access to Health Care" *Journal of Medicine and Philosophy*, Vol 8, pp. 381-388.

Savulescu, Julian (2001), "Procreative Beneficence: Why We Should Select the Best Children" *Bioethics*, Vol 15(5-6), pp. 413-426.

Schweizer, Paul (1994), "Momentary Consciousness and Buddhist Epistemology" *Journal of Indian Philosophy*, Vol 22(1), March, pp. 81-91.

Scully, Jackie Leach (2001), "Drawing a Line: Situating Moral Boundaries in Genetic Medicine" *Bioethics*, Vol 15(3), pp. 189-204.

Skilton, Andrew (2000), *A Concise History of Buddhism*, Barnes & Noble.

Smith, Kelly C. (2001), "A Disease by Any Other Name: Musings on the Concept of a Genetic Disease" *Medicine, Health Care and Philosophy*, Vol 4, pp. 13-30.

Spiro, Melford (1982), *Buddhism and Society: A Great Tradition and Its Burmese Vicissitudes*, Univ. of California Press, Berkeley.

Stern, Lawrence (1983), "Opportunity and Health Care: Criticisms and Suggestions" *Journal of Medicine and Philosophy*, Vol 8, pp. 339-361.

Strong, Carson and Anderson, Garland (1994), "An Ethical Framework for Issues during Pregnancy" in *Principles of Health Care Ethics* ed. by Gillon, Raanan, John Wiley & Sons Ltd, pp. 587-600.

Suzuki, Beatrice (1959), *Mahayana Buddhism*, Allen and Unwin, London.

Suzuki, David & Knudtson, Peter (1989), *Genetics: The Clash between the New Genetics and Human Values*, Harvard Univ. Press, Cambridge.

Tachibana, S. (1926), *The Ethics of Buddhism*, Oxford Univ. Press, London.

Tangwa, Godfrey (1999), "Globalisation or Westernisation? Ethical Concerns in the Whole Bio-business" *Bioethics*, Vol 13(3-4), pp. 218-226.

Torres, Juan Manuel (1997), "On the Limits of Enhancement in Human Gene Transfer: Drawing the Line" *Journal of Medicine and Philosophy*, Vol 22(1), pp. 43-53.

Torres, Juan Manuel (1995), "The Importance of Accurate Terminology in the Field of Human Gene Transfer" *Human Gene Therapy*, Vol 6, pp. 133-135.

Thompson, Mel (1999), *Eastern Philosophy*, McGraw-Hill Companies.

Veatch, Robert M. (1979), "Just Social Institutions and the Right to Health Care" *Journal of Medicine and Philosophy*, Vol 4(2), pp. 170-173.

Verhey, Allen & Blekkink, Hattie (1995), "Playing God and Invoking a Perspective" *Journal of Medicine and philosophy*, Vol 20, pp. 347-364.

Vogel, Lise (1990), "Debating Difference: Feminism, Pregnancy, and the Workplace" *Feminist Studies*, Vol 16(1), pp. 9-32.

Wachter, Maurice (1993), "Ethical Aspects of Human Germ-Line Gene Therapy" *Bioethics*, Vol 7(2/3), pp. 166-177.

Walsh-Frank, Patricia (1996), "Compassion: An East-West Comparison", *Asian Philosophy*, Vol 6, March, pp. 5-16.

Walter, LeRoy & Palmer, Julie Gage (1997), *The Ethics of Human Gene Therapy*, Oxford Univ. Press, New York.

Walter, LeRoy (1991), "Ethical Issues in Human Gene Therapy" *Journal of Clinical Ethics*, Vol 2, pp. 267-274.

Walter, LeRoy (1991), "Human Gene Therapy: Ethics and Public Policy" *Human Gene Therapy*, Vol 2, pp. 115-122.

Wambach, Helen (1978), *Reliving Past Lives*, Harper & Row.

Warren, Mary Anne (1997), *Moral Status: Obligations to Persons and Other Living Things*, Clarendon Press, Oxford.

Wayman, Alex (1980), "Dependent Origination—The Indo-Tibetan Tradition" *Journal of Chinese Philosophy*, Vol 7, Dec., pp. 275-300.

Weatherall, David (1994), "Human Genetic Manipulation" in *Principles of Health Care Ethics*, Raanan Gillon, ed., John Wiley & Sons Ltd.

Weinzweig, Marjorie (1987), "Pregnancy Leave, Comparable Worth, and Concepts of Equality" *Hypatia*, Vol 2(1), Winter, pp. 71-101.

Wekesser, Carol, ed., (1996), *Genetic Engineering: Opposing Viewpoints*, David Bender &

Bruno Leone, Serious Editors, Greenhaven Press, Inc., CA.

Wikler, Daniel (1997), "Presidential Address: Bioethics and Social Responsibility" *Bioethics*, Vol 11(3/4), pp. 185-192.

Williams, Courtney (1992), "Toward a Consistent View of Unwanted Pregnancy and Abortion" *The Harvard Review of Philosophy*, Spring, pp. 42-50.

Wivel, Nelson, & Walters, LeRoy (1993), "Germ-Line Gene Modification and Disease Prevention: Some Medical and Ethical Perspectives" *Science* 262(5133), pp. 533-538.

Yang, Yu-wen (1996), "'Idappaccayata' in Dependent Origination" *Chung-Hwa Buddhist Journal*, Vol 9, pp. 1-34.

Yoshinori, Takeuchi, (1983), *The Heart of Buddhism: In Search of the Timeless spirit of Primitive Buddhism*, Heisig, James ed. and trans., Crossroad, NY.

Zimmerman, Burke K. (1991), "Human Germ-line Therapy: the Case for Its Development and Use" *Journal of Medicine and Philosophy*, Vol 16, pp. 593-612.