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Justice between generations

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The University of Arizona, 1993

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JUSTICE BETWEEN GENERATIONS

by

John William Clark Wolf

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1993
As members of the Final Examination Committee, we certify that we have read the dissertation prepared by John William Clark Wolf entitled Justice Between Generations and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy.

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Final approval and acceptance of this dissertation is contingent upon the candidate's submission of the final copy of the dissertation to the Graduate College.

I hereby certify that I have read this dissertation prepared under my direction and recommend that it be accepted as fulfilling the dissertation requirement.

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ACKNOWLEDGMENTS

Seven years ago, in a class taught by Norman Care at Oberlin college, I read an article entitled "The Rights of Animals and Unborn Generations" by Joel Feinberg. This helped to motivate me to apply to the graduate program at the University of Arizona to work with the author. I could not be more proud to have had the opportunity to work with Professor Feinberg, who provided extensive comments on the entire draft. Not only did he rescue me from numerous errors, he also helped to make the process of writing much more pleasant.

Much of what I know of political philosophy I learned, either directly or indirectly, from Allen Buchanan. Quite early in my graduate career, I heard Professor Buchanan argue that competent political philosophy could not be done by scholars who lack an understanding of economics, and the economic implications of political theory. As this essay demonstrates, I took the argument quite seriously.

When Jean Hampton came to the University of Arizona, during my last year of residence, I was already an admirer of her work, and leapt at the chance to convince her to be a member of my dissertation committee. Her incisive comments on earlier drafts saved me from numerous errors and pitfalls.

Research on this project was supported by grants from Institute for Humane Studies, the University of Arizona, and the University of Georgia. In addition, a fellowship from the Scaife foundation enabled me to spend a productive year studying in the Department of Economics at the University of Pittsburgh.
I would like to dedicate this essay to my parents, John and Mitzi Wolf, and to my two sisters, Laura Wolf, and Carolyn Wolf-Gould, with hopes that I will be able to see more of them all now that it is finished.
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ABSTRACT

Many of our common moral and political principles have paradoxical consequences when we try to use them to make comparisons between generations, or to guide the future-directed policy choices of the present generation. This dissertation is an attempt to take important steps toward the development of a theory of justice between generations as an extension of a standard liberal theory of justice. I approach the problem in the interest of developing a theory of present-day decision making, and attempt to develop a theory of the way in which the interests of future people should be taken into account in current decisions about social and energy policy. My argument proceeds largely within the limits of contemporary economic theory and contemporary theories of justice. However, I argue that our obligations to future people require that we revise our view of the role of economic theory as a tool for policy makers, and that we allow recognition of the moral significance of future persons to alter our conception of property rights in natural resources.
Chapter 1

OBLIGATIONS CONCERNING FUTURE GENERATIONS:

SUMMARY INTRODUCTION

Long after we have ceased to exist, there will most likely still be people on earth, and perhaps even off it. Let us call those who will exist far enough in the future that their lives will not overlap the lives of any currently existing people 'future persons.' Future people cannot possibly change our lives: we will be long gone before they have the chance. But our current choices and actions may have very significant affects on their lives. If we consume resources irresponsibly, they may inherit a world incapable of providing them with what they need. Similarly, as many economists urge, if we sacrifice technological progress and economic growth in order to conserve resources, this may also be detrimental to future persons, since they may then lack the benefits of increased technology, and other long-lived beneficial consequences of current economic prosperity. In this essay I consider the moral significance of current choices and institutions which stand to influence the lives of future persons for better or worse. While I argue that current political and economic theory does not adequately reflect the moral significance of the future and the interests of future persons, I also hope to show how these theories can be revised to cope with the difficulties of future directed decisions. This, I hope, is an important preliminary step toward the development of a more fully articulated intergenerational conception of political and economic justice.
In proceeding through the argument of this essay, it will be helpful to have a "road map"-- a broad outline of the main points of the argument, explaining how they are related. In the remainder of this short chapter, I provide such an outline.

The problem of justice and moral obligations between generations is a problem only if future persons are legitimate objects of moral concern. But a surprising number of philosophers and social theorists have argued that the interests of future persons are not relevant from the moral point of view. Some have argued merely that future persons cannot have rights, while others have argued that no obligations whatsoever apply to future persons, and that they simply have no moral standing at all. In Chapter Two, I consider a number of arguments which have been offered in support of the second of these claims. I argue that many of our commonsense moral principles do support the claim that currently existing persons have obligations to the future.¹ While I consider five interesting arguments which seem to support the opposite thesis, I argue that none is adequate to undermine the claim that we have obligations to future persons, at least in cases for which the effects our choices have on their lives are similar to the effects our choices have for present persons.

However, one way in which our current choices affect future persons is completely unlike their effects on current people. Our choices may determine not

¹ When I refer to "obligations to the future" or elsewhere "the interests of the future" I do not, of course, mean to imply that these interests are anything other than the interests of those persons who will exist in the future.
only the conditions of life for future persons, but also their identities: in surprisingly many cases, different persons will come into existence, depending on our choices. Following Parfit, I will call such choices Different Person Choices. The most obvious examples of different person choices are individual reproductive decisions: clearly a successful decision to have a child is a decision that determines the existence of a person who would not have existed otherwise. But choices that subtly change others' lives will have subtle but decisive effects on others' reproductive lives as well. As I will argue in Chapter Three, different person choices are much more common than might be expected.

Surprisingly, this fact creates serious difficulties for our traditional moral concepts. This is because many important moral concepts are "person affecting," in that they associate moral value with specific individuals. For example, in order to claim that a decision or a course of action "harms" another person, or violates someone's "rights," we must identify a specific person who is the victim of harm, or the claimant whose rights are violated. In the context of current decisions that determine who will (later) come into existence, the identity of the supposed victim or claimant is just what is at issue. How can we account for decisions that seem to harm future persons, but which also determine that those who were harmed (rather than some other group of future persons) came into existence? After showing that the non-identity problem is a very serious problem for moral and political theory, and

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that our standard moral concepts have counterintuitive implications in the context of choices for which it arises, I argue that the non-identity problem arises only if we make an error: unless we individuate future persons incorrectly, the non-identity problem does not arise. Proper individuation of future persons must take into account the fact that specific identity is not relevant from the moral point of view. Most people find the conclusion I argue for in Chapter Three intuitively obvious: it may seem clear that the identities of future persons are irrelevant from the moral point of view. But the solution I suggest for the problem is important, because it shows how future persons can have rights against current persons. I argue that while future persons may not have many specific rights, they have a general right that their interests be given due moral consideration in the context of any current choices or decisions in which they have a morally significant stake.

But it may not be in the interest of current people to protect the interests of future persons. When the interests of future persons come in conflict with those of present persons, how should they be weighed against one another? It has often been suggested that the interests of future persons should be discounted: their interests have less moral 'weight' as they recede (or perhaps 'proceed') into the future. In Chapter Four I consider a number of different arguments in favor of discounting future interests. I argue that, surprisingly, some forms of discounting are consistent with a principle of temporal neutrality, which states that the time at which a person exists is irrelevant from the moral point of view. Only discounting which is consistent with this principle, I argue, is justified from the moral point of
view. Finally, I provide a rough decision procedure for discounting future costs and benefits. In general, however, the interests of future persons are equal to those of current persons in the degree and kind of moral consideration they merit.

Having argued that current persons have obligations to the future, that some of these obligations are based on the rights of future persons, and that the interests of future persons have equal moral weight to those of present persons, it is necessary to consider the way in which these obligations are reflected in our social institutions. It would be very comforting to believe that future person's interests would be adequately served if we simply ignored them. In effect, this is what current economic dogma tells us to do. Recent economists have argued that the free working of competitive markets will by itself adequately provide for the interests of the future, and that efforts to protect these interests by limiting our consumption of nonrenewable resources, or curtailing the operation of unrestricted capitalism will only serve the interests of resource owning monopolists. In Chapter Five I consider the benefits afforded by competitive markets. I argue that we have no reason to believe that markets will produce desirable distributions of goods or welfare over time, even if they were capable of reaching economic optima at every point in time. This undermines an important line of support for the libertarian theory of justice: if markets cannot provide for the interests of the future, then the libertarian theory may be unable to provide adequate social stability.

But the other important line of support for the libertarian theory comes
from the conception of individual rights implicit in the libertarian view. According to many of its defenders, the libertarian conception of justice simply arises from recognition of the rights of individuals, and recognition of the importance of rights for the achievement of individual autonomy. Libertarians often turn to Locke’s theory of property rights to garner support for the view that political institutions which do more than protect the negative rights of citizens will impermissibly infringe individual autonomy. In Chapter Six I provide an alternative interpretation of the Lockean theory. I argue that while future persons do not have property rights, the institution of property is justified only if it is structured in such a way that the interests of future persons are protected. This leads to a more limited conception of property than many contemporary Lockeans have thought. I argue that the best way to interpret the famous "proviso," Locke’s claim that initial appropriation is justified only if "enough and as good" is left for others, is as a restriction protecting people against the potentially harmful appropriation of others. This interpretation, I argue, is more liberal than other standard interpretations of the proviso, since it permits appropriation in a wider variety of circumstances. But the conception of property rights yielded by this revised Lockean proviso is more limited than either Locke, or his contemporary defenders, have appreciated.

In the final chapter, Chapter Seven, I further develop this revised theory of property rights by considering the circumstances in which the appropriation of resources could constitute a harm to future persons. The way to avoid such harms, I claim, is to acknowledge that when members of the current generation hold property
rights in natural resources that future persons will need for their survival and for the ability to live decent human lives, those property rights are limited in important ways. Unless destructive use of resources is justified by the deepest present necessity, current persons have no valid moral claim to destroy such resources, even when they have property rights in them.
Chapter 2

MORAL RELATIONS BETWEEN GENERATIONS

2.1 Introduction
2.2 Five Features of our Choices
2.3 Three Kinds of Choices
2.4 Five Arguments Against Obligations to Future Persons
2.5 Preliminary Conclusions
2.6 An Argument from Default In Favor of Obligations to Future Persons

2.1 Introduction

The central project of this dissertation is to provide a theory of the way in which the interests of future people should be taken into account in present day decision making. Ideally, such a theory would include or comprise a principle or set of principles which could be used by policy makers in making decisions that have "time distributed effects" which will influence the lives of people who live at different and sometimes distant times from one another. Such decisions are quite common- they often arise in legal contexts, where the question of harms to future persons may be cited as ground for present liability, or for present restriction of liberties. Similarly, such a theory will be helpful in determining the justification of legislative restriction of current rights to pollute, or to exploit natural resources. These alone would constitute important practical motives to undertake this project. But in addition to these practical motives, there are more purely philosophical motives as well: because our choices may affect future persons in unusual ways, future persons raise difficult problems for standard philosophical theories of morality.
and political justice. As I will argue, many of our most fundamental moral concepts and principles yield paradoxical and difficult consequences when we apply them to decision contexts involving the future. An adequate theory must be capable of providing a satisfactory account of these difficulties.

Before we can approach the task of providing a theory to guide future directed decisions, we must first answer some central questions concerning the moral standing of future persons. This is not as straightforward a problem as it might initially seem, because future people, unlike the rest of us, do not (yet) exist. Still, many of the ways in which our choices will influence the lives of future persons are no different from the ways in which we influence current persons. Our choices, for example, may influence their lives for better or worse. But there are important differences as well. For our choices may not only determine how future persons will fare in life, but may actually determine which persons, if any, come into existence at all. Obviously there is no way in which our choices can have similar effects on those who already exist. On this ground, some writers have argued that future persons are not properly the objects of moral concern or respect, and that no normative relations (like 'obligations' can properly be said to hold between present and future persons. Even those who are unable to accept this radical conclusion have often been at a loss to explain how it is possible to incorporate into moral theory obligations toward people who don’t yet exist. Russell Hardin writes that the problem of "bringing future generations under the coverage of moral and political theory" is "the most difficult issue threatening all of such theory." 3 Derek Parfit, in spite of the fact that

his book offers no solutions to the serious problems and paradoxes concerning future people, also argues that this problem is also the "most important part of our moral theory."  

Call the thesis that current people can have no obligations to future people the *no obligation thesis*. If true, this thesis would have serious consequences: if we have no direct obligations to future persons, then some have argued that we may have no reason, from the moral point of view, to take their interests into account at all. In this chapter, I will consider the differences between present and future persons, and will investigate the lines of argument which have led many philosophers to accept the *no obligation thesis*, and the closely related *no rights thesis*, the claim that future persons cannot have rights against present persons. I will argue that we do have obligations to the members of future generations, and that there is no conceptual difficulty in claiming that some of these obligations are based on the rights of future people. 

To speak of ‘obligations to future generations’ is slightly misleading. The obligations I wish to discuss are not obligations between amorphous groups of people who live at different times, but rather obligations between individual members of the present generation and individual members of the generations of human beings who do not yet exist, but who will exist. If we have obligations of the type I hope to discuss, they are not merely obligations of ‘our generation,’ they are obligations we

have as individuals who happen to be members of the present generation. This is not to deny the possibility that groups or collectives may have rights and obligations, but rather to emphasize that my conclusions will not rely on any views about moral relations between groups.

In order to develop a theory of the way in which the interests of future people should be taken into account in present day decision making, it will be necessary to analyze standard moral concepts, jurisprudential concepts, economic concepts, and normative concepts used in the development and articulation of theories of social justice. In each case, we will need to consider the ways in which they account (or, as I will argue, fail to account) for the interests of future persons. As will become clear, this is not a straightforward or simple project. Some might be inclined to believe that the difficulties which our moral theories have in dealing with future persons indicates that we really need not give the future much weight in our moral considerations. After all, we may have no particular reason to believe that our more distant predecessors took very great pains to look after our interests; they left us to take care of ourselves. If so, then why shouldn't we take the same attitude toward the future?

2.2 Five Features of our Choices

In spite of the difficulty in applying standard moral categories to future persons, we cannot dismiss as irrelevant the effects of our current actions on the lives of future persons. Reflection on the situation between ourselves and our distant
descendants will, I hope, make it clear that these effects are morally significant, while also showing why they are problematic and difficult. In this interest, consider five important features of our future-directed choices:

First, many of our current choices will have serious effects on the lives of generations of people who will inherit the earth from us. We currently have the power to make choices which could have drastic effects on the standard of living future persons will enjoy, and on the nature of the world they will inhabit. For example, our current choices may determine whether they will have clean air to breathe, and clean oceans to swim in. Our choices may determine whether the world they inherit will have African elephants and South American rain forests. We have the ability to determine, to a large extent, how much fossil fuel will be available for them to exploit, and how long it will last. By choosing to invest in research concerning alternate energy sources, and increasing efficiency in the use of standard energy sources, we can influence the size of the resource base which will be available for them to exploit (or conserve), as well as their ability efficiently to use and reuse resources. In this regard, we should not overlook the crucial importance of the nonmaterial resources we leave our descendants. It is difficult to quantify the value to future persons of the intellectual and technological advances made by current people. It is also difficult to quantify the value of the cultural resources we leave to our descendants, not only in the form of arts and letters, but also in the form of political and social institutions which will shape their lives and define their
opportunities.

Previous generations also had the ability to change our lives, and their choices also had consequences for us. But no previous generations have had the ability to determine the shape of the future to the degree that we have now. As a result of the development of technologies which allow us to change the world in increasingly drastic ways, we must take these questions much more seriously than has been necessary for any previous generation.

Second, our choices will influence, to at least some extent, not only the level of welfare future generations will be able to enjoy, but also, the number of future persons there will be. We could, conceivably at least, make choices which would limit or encourage population growth. It is clear, for example, that China and India have both made policy choices which have decreased to some extent the rate of population growth, and several organizations are attempting to do the same in the United States. Most people agree that it would be desirable to limit population growth as long as that goal can be achieved in a morally acceptable way. But others have indeed argued that limitations on population growth are always unacceptable. If true, this view would be unfortunate, since in our world there is a demonstrable correlation between standard of living and population: the more people there are, the worse off, in general, they will be. It is increasingly clear that the world may have a limited carrying capacity: beyond a certain point, it may no longer be capable of sustaining all of it's inhabitants. Advances in technology may increase this capacity, but it is very unlikely that such advances will be able to do so indefinitely. It seems
highly probable that the only way we can insure a decent standard of living for distant future generations is to control in some way the growth of population. But even once we are agreed that population control is desirable, we will need to consider what methods of population control are morally permissible. This not only raises questions concerning birth control and abortion, but also questions concerning the limits of state authority, and the legitimate use of state coercion. Might it be legitimate, under some circumstances, for the state to prohibit people from having children, or to institute coercive policies designed to limit the growth of population? The answer to this question will depend both on our accepted theory concerning the legitimate use of the coercive powers of the state, and on the reasons we can marshal in justification of our judgment that population growth is undesirable. If unchecked population growth is a harm to the members of those generations who will have to endure life on a crowded planet, then it might be justifiable, on Mill’s well known Harm Principle, to use the coercive powers of the state to prevent those harms. But there are considerations which may undermine the claim that such a circumstance causes ‘harm’ to those who suffer in them. This leads us to a closely related problem:

Third, our choices may determine not only how many people will come into existence, but which people will come into existence. This point might not seem crucially important at first, but it creates serious problems for our moral theories. Suppose that the only way we can avoid condemning future generations to squalid lives on an overpopulated planet is by curbing population growth. Unfortunately,
policies designed to control population by limiting people's right to procreate will set back the interests of those who would prefer to have more children than such coercive policies would allow. The institution of restrictive legislation designed to curb population would set back the interests of these current persons, and those who stand to benefit from such legislation do not currently exist at all. In fact, those persons who will supposedly be harmed by unchecked population growth are people who might not even come into existence if more restrictive population policies were implemented. How could such people plausibly claim to have been harmed by the fact that we failed to implement a policy which, had we implemented it, would have had the consequence that they would not have existed at all? Such supposed 'harms' fail to meet a condition which some take to be a necessary condition for the ascription of a harm: if we had acted differently (i.e. if we had instituted population controls) the supposed victim would not be in a better condition. She simply would not be at all. This problem, which Parfit\(^5\) has called "the Non-Identity Problem," will be discussed in Chapter Three.

*Fourth, at least some of the effects on future persons of our current choices are predictable.* While we do not have precise information concerning the effects of our choices on population or standard of living, we are not completely ignorant of the probable effects of all our choices. In some cases, this is perfectly clear: if we allow logging companies the right to cut all the old growth timber in Oregon, then those ancient forests will not exist for future generations to enjoy.

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However, we are increasingly uncertain of the effects of our choices on future persons as they proceed further and further into the future. In spite of the fact that our judgments of the consequences of our choices may be associated with increasing uncertainty as distance from us in time increases, we can often make predictions about these consequences with a very high degree of certainty. For example, while we may not be able to predict just what the consequences of current pollution and irreparable environmental degradation will be for people who may live four hundred years from now, we can be fairly confident that these effects will be bad for them, and (if current trends continue) very serious.

Finally, the effects of our current choices on the lives of future persons are morally significant, and some possible futures we could create are preferable to others from the moral point of view. Future people are, after all, people, and our choices may determine whether they have the opportunity to live well, or whether they are destined to live in a world ill suited to provide them with what they need. Most people agree that if we could increase the standard of living for future generations by limiting population growth, then provided that population growth were not limited in morally unacceptable ways, it would be good, from the moral point of view, to do so. While people disagree about just which methods are morally acceptable, few claim that these choices are not significant from the moral point of view.

Beyond these preliminary remarks, I will not argue for these claims here.
I believe that most of us accept them in any case. If we do accept them, and we wish to make morally acceptable policy choices, then it is crucially important for us to develop a coherent theory of how the interests of future persons should be taken into account in present day decision making. But the problems that arise when we attempt to extend current theories to cover future persons are not merely of topical interest. Ultimately, these problems must cause us to examine the fundamental issues of justification in our accepted moral theory as well as our theory of social justice, and have important implications for the articulation and defense of an adequate theory of justice. Part my aim is to show that standard moral concepts and social and economic theories are not adequate in this context.

2.3 Three Kinds of Choices

Because our current choices can affect future populations in different ways, Derek Parfit\(^6\) notes that our choices can be classified according to their effects on future populations. In this context, two sorts of effects are especially important: our choices can influence the numbers of people who will exist, and can influence the identities of those people as noted in the preceding paragraph. This gives Parfit a tripartite classification of choices: *Same People Choices* affect neither the identities nor the number of persons who will exist. *Same Number Choices* affect the identities of future people, but do not affect their number. *Different Number Choices* affect both the numbers and identities of future people. Both *Same Number Choices* and

Different Number Choices affect the identities of future people, so they are different kinds of Different People Choices.

It is plausible that many of our choices do not have any effect on the numbers or identities of people who will exist. When I choose to have an onion rather than a whole wheat bagel for breakfast, it is unlikely (though not impossible) that this choice will affect either the number or identities of future people.

The decisions people make about whether to have children, and how many, are the most common and clearest examples of different people choices. Arguably, most large scale policy choices are also different number choices, since they will have widespread effects which will determine who will meet whom, and will therefore determine the identities of the people who will exist. Cases in which current choices affect the identities of future persons in this way raise special difficulties which will be discussed in chapter three. In this chapter the discussion will be limited to Same People Choices, or cases, as I will put it, in which 'identity is not a problem.'

Some have argued that the no obligation thesis is true even when our decisions do not affect the identities of future persons. In the following discussion, I consider and reject a series of such arguments. In later chapters I will argue that we do have obligations to future persons, and that some of these obligations are based on rights they have against us.

Different person choices present especially difficult problems for the view that future persons can be the subjects of current obligations, or the bearers of
rights. I will put off discussing these problems until the next chapter. In the following section I will consider relatively easy cases in which the identity problem does not arise. That is, I will consider cases in which the identities of future persons do not depend on the choices made by currently existing persons. First I will consider a set of arguments in favor of the No Obligation Thesis. I hope to show that these arguments fail. Then I will argue that in the context of such choices, we do have obligations to future persons.

2.4 Five Arguments Against Obligations to Future Persons

Five arguments are most frequently cited in defense of the claim that we cannot have obligations to future persons, and the claim that they cannot have rights against us:

1) The indeterminacy of future persons, and our uncertainty concerning the effects for them of our current decisions, undermines the claim that we may have obligations to them.

2) Obligations require at least the possibility of reciprocity between those who are obliged and those to whom they have obligations. Because no reciprocity is possible between present and future persons, we cannot have obligations to future persons.

3) Future persons are only possible persons. But we can have obligations only to actual persons, and only actual persons can have rights.

4) Future persons do not exist. Because of this, they cannot be the present bearers of anything. Specifically, they cannot be the bearers of rights, nor can current persons have obligations to persons who do not exist.

5) The possession of a right entails an ability effectively to exercise it: that is, if a person has a right, it must at least not be logically impossible for her to
exercise it. But future persons could not possibly exercise rights. Therefore they cannot have rights, nor can we have obligations to them.

In this section, I hope to show that these arguments fail. Because so many have found these arguments convincing, this is an important part of any defense of the view that we may have obligations to the future. Further, consideration of these arguments will help to clarify the nature of such obligations. In the last part of this chapter I will argue we can and do have obligations to future persons, at least in cases where identity is not a problem.

1) The indeterminacy of future persons, and our uncertainty concerning the effects for them of our current decisions, undermines the claim that we may have obligations to them.

If we currently choose to invest money and resources in research designed to make a more efficient automobile engine, we don't know which people will benefit from that research two generations from today, and we cannot be certain that this research will have any significant consequences for any member of any future generation. These problems make it more difficult to evaluate the moral weight of the effects of our decisions on future persons, but it should be clear that they don't constitute a significant difference between choices that have immediate consequences and choices that have consequences stretching into the distant future. Even for choices that involve only current persons, there may be indeterminacy. For example, the obligation not to set a well concealed bear trap on the ramp leading into a building isn't diminished by the fact that I can't know just which present persons
are more at risk of being caught in it.

With respect to the uncertainty associated with the consequences our choices will have for future persons, this is also a familiar feature of choices in which only currently existing persons’ interests are involved. Increasing uncertainty that my choice will harm others may in fact diminish my culpability, if the degree of risk is acceptable. But clearly there are degrees of certainty and uncertainty associated with the effects of our choices on currently existing people as well. Uncertainty may be relevant to moral judgment, but uncertainty concerning the effects of our choices on future persons cannot support the claim that we have no obligations concerning them.

2) Obligations are based on reciprocity. Because no reciprocity is possible between present and future persons, we cannot have obligations to them.

According to some theorists, notably Thomas Hobbes, and more recently David Gauthier, all obligations and in fact all moral relations are based on reciprocity. Those who hold such a view are quickly driven to the conclusion that no moral relations can hold between present and future persons. For, as Brian Barry has forcefully argued, future generations are not in the ‘conditions of justice’ with members of the present generation.7 We cannot make mutually advantageous contractual arrangements with future people, because we won’t be around to collect our payoff from the bargain, and they will have no motive to comply. There are two

7 Barry (1978) is still among the best philosophical discussions of justice between generations. See especially pp. 206-209.
reasons for this. First, we will be dead, and unable to enforce our contract. Nor will future persons have any utility-based obligation to respect the contract they have made. Second, future generations can not give their consent to any contract that we present people may frame. Since they cannot consent, such contracts cannot be binding.⁸ Thomas Jefferson took this to be a very serious problem in constitutional theory: if future people had not explicitly consented to the terms of the national constitution, he believed that the terms of the constitution were not binding for them. The constitution, he argued, is essentially a contract among the (then) present persons who framed it. Such contracts are binding only for those who freely agree to them, and current persons are not here to agree or dispute. Only if the constitution were re-written every generation, he argued, could the United States Government validly claim that it’s authority is based on the free consent of the governed.⁹

But while strict reciprocity may be impossible in this context, there is a rough analogue to the principle of reciprocity that is possible among members of distant generations. We not only leave the earth as the inheritance for the members of future generations; we also inherited the earth from members of prior generations. If we realized benefits from previous generations, it has been argued, we may

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⁸ At least any binding moral force they have will derive not from the contractual agreement, but on the moral value of the terms which were agreed to. For example, if the contract created just institutions, then the duty to uphold just institutions would provide moral reasons for future persons to comply.

simultaneously acquire obligations to subsequent ones. As Barry articulates this view, "Since we received benefits from our predecessors, some notion of equity requires us to provide benefits for our successors." Burke also invokes this extended sense of reciprocity when he writes of society as a partnership whose ends "cannot be obtained in many generations," and which therefore "becomes a partnership not only between those who are living, but between those who are living, those who are dead, and those who are yet to be born."

Of course, obligations based on reciprocity of this sort cannot be founded on a direct appeal to prudential reason. Once we have done our part, all we can do is to hope that future persons will also do theirs. Rather than prudence, such a system seems supported by what Rawls would call a "principle of fair play." We cannot legitimately claim that future persons should do their part unless we too are willing to do ours, and perhaps we should not consider ourselves fully justified in the enjoyment of our inherited benefits if we were not also committed to the provision of similar benefits for our heirs. Barry considers a case in which

"... the young provide transport for the old in the expectation that when they themselves are old the young will do the same for them. [While such an arrangement may be beneficial to all involved,] clearly we can add that even if the young could somehow get away with neglecting the old now and yet still reintroducing the practice in time to benefit when they are old themselves, it would be unfair- a violation of justice as reciprocity- to do so. The extended reciprocity here runs in the opposite direction: having received benefits, we have an obligation of justice to pass on comparable benefits."

10 Barry, (1979), p. 73.

11 Burke (1955) p. 110.

12 Barry, (1979) p. 70.
This is "reciprocity" only in an extended sense, since those who benefit are not identical with those who previously were benefactors. And while the 'young' in Barry's example may have self-interested reasons for creating social institutions that guarantee that older members of society will be cared for (after all, they will be old someday), we may have no similar reasons to create institutions that require costs from us for the benefit of those who will exist in the distant future. From our temporal perspective, we will never *be* future people, though we *will* at some point be *old* people. Only those who are future people *from our perspective* will benefit from institutions which balance costs to the present against benefits for the distant future. If there *were* a general social practice of providing benefits for future persons, and if we had benefited from such a practice, we might incur an obligation of fair play to uphold this practice. But unlike the young in Barry's example, current people will not benefit from the imposition of social institutions which trade current costs for distant future benefits. Unlike the case Barry describes, the first generation to create such institutions will pay the costs, but will receive no compensatory benefits. In addition to the difficulties associated with the maintenance and stability of such institutional practices, such institutions are generally difficult to get started.

And a serious question arises whether such practices do currently exists for us to uphold. We have an obligation of 'extended reciprocity' or 'fair play' only if we have received benefits. Have we? Barry thinks not. He argues that no such practice exists between generations, since there is little evidence that our distant
ancestors placed significant weight on the effects of their actions on our lives, who exist in their distant future." Extractive industry and non-sustainable methods of production have arguably been the norm at least since the industrial revolution, and perhaps much longer than that. "My impression," writes Barry, "is that the only reason why our ancestors did not do more damage is that they lacked the technology to do so." If this is so, then we currently have no obligation of fair play to look after the interests of future persons.

However, there may be alternate, though closely related grounds supporting the claim that we have an obligation to look after the interests of the future by starting the practice, and incurring the correlative costs. If we believe that such a practice would be a good one, then we might be able to impose a fair-play obligation on our successors by instituting social policies to guarantee that future

13 Perhaps the Social Security system is a recent counterexample to this general rule. On the other hand, it may represent efforts to insure that current persons will not find themselves destitute in their futures rather than an effort to provide concrete benefits for distant future generations. Even if such institutions do represent concern for the distant future, the existence of isolated institutions would not provide support for the notion that a general practice exists. In general, many people still regard it as odd that we might impose costs on people who do exist in order to benefit those who do not (yet).

persons will not be unduly deprived. Under some circumstances, we might have an obligation to start such a practice, deriving from the more general obligation to create and uphold just institutions. But this is little help in the present context, since a theory of justice must be based in some way or other on a more basic and general theory of obligation. Any theory which undermines the claim that we can have obligations to future persons also undermines the claim that institutions which guard their interests are just, especially in circumstances in which their interests can be guarded only at the expense of present persons.

In spite of these considerations, it is plausible to argue that we may have obligations to future persons even though no reciprocity is possible between members of distant generations. For few accept the view that all obligations are reciprocity based, and many have argued that exclusive reciprocity-based moral theories have radically counterintuitive implications. Specifically, such theories imply that we have no obligations to persons who cannot contribute to the social surplus, and who have no threat advantage over us. Allen Buchanan notes that such a theory of obligation implies that "we violate no rights if we choose to use noncontributors in experiments on the nature of pain or for military research on the performance of various designs of bullets when they strike human tissue, slaughter them for food, or bronze them to make lifelike statues." Clearly a complete theory of obligation must be capable of accounting for a broader range of duties than pure reciprocity can accommodate. In general, even if pure reciprocity is impossible between members of

distant generations, most people will not take this as a conclusive argument that we can have no obligations to them.

Of course, even if we cannot have pure reciprocal obligations to members of future generations, we may have obligations concerning future persons which are based on reciprocity between present persons. For example, if we members of the present generation have an interest in the well-being of our unborn children and grandchildren, we may contract among each other to secure this aim. We might agree among ourselves to limit pollution, or to invest in research projects designed to benefit the future. However, contractual agreements among present people cannot be the foundation of rights for future people. In such cases, the beneficiaries of the agreement may be unborn generations, but the obligations are owed not to these people, but to the participants in the agreement. If A contracts with B that B must look after A’s unborn grandchildren after A’s death, then B is obliged to A, not to the grandchildren of A. In such a case, we say that B has an obligation to A, and with respect to A’s grandchildren. What is characteristic of rights is that they are constituted by obligations that are linked to a specific person: the right-holder. The beneficiaries of actions which are obligatory by virtue of a right may or may not be the right-holder herself.

In a similar vein, we could agree on a contractual arrangement for the benefit of unborn generations. Such an agreement might itself be reciprocity based, but the obligations implied by such an agreement are not owed to the unborn generations of persons who would benefit, but to the participants in the agreement.
themselves. Reciprocity of this kind can account for obligations with respect to future people, but not obligations to future people.

Because of this, reciprocity as mutual advantage cannot directly account for the rights of future people. If pure reciprocity were the only source of moral obligation, as Gauthier claims, then future generations could not have rights, nor could we have obligations to them. Since this is so, arguing against the no rights thesis must involve arguments in favor of moral principles which are not reciprocity based. The limitations of this essay preclude a full discussion of the objections to conceptions of morality and justice based on direct reciprocity, and the proliferation of literature on the subject makes such a discussion unnecessary.¹⁶ For now, it is sufficient to note that such theories are very limited in their ability to account for moral relations between generations. In Chapter Five, we will investigate further the extent to which pure reciprocity can accommodate the interests of the future.

3) Future persons are only possible persons. But we can have obligations only to actual persons, and only actual persons can have rights.

There may not be any future generations, and we cannot presently identify which future persons will come to exist. It is sometimes claimed that future persons are therefore merely "possible persons," and that, consequently, we can have no obligations to them. In this vein, Ruth Macklin writes:

The chief argument in support of the position that future generations cannot correctly be said to have rights rests on the premise that the ascription of

¹⁶ See especially Buchanan (1990) and Piper (1986).
rights is properly to be made to actual persons, not possible persons. Since future generations can only be viewed as consisting of possible people, from any vantage point at which the description "future generations" is applicable, it would follow from the aforementioned premise that rights cannot properly be ascribed to future generations."

Is Macklin’s claim that future persons are "possible persons" true? The answer depends on the sense of "possible" we employ when we consider the question. As I will argue, there are senses of "possible" on which future persons are, as Macklin claims, only "possible persons." But there are other senses of "possible" on which this claim is false. Macklin’s argument succeeds only if the sense in which future persons are "possible persons" is the sense which would preclude the ascription of rights to them, and which would also preclude the possibility that current persons could have corresponding obligations. As I will argue, the sense of "possible" that makes Macklin’s premise that "future persons are possible persons" true is not the sense of that term which is relevant for the ascription of future rights and correlative current obligations.

We can distinguish at least three senses of the term ‘possible.’ The first quite common sense of the term refers simply to the absence of inconsistency. This is the sense of ‘possible’ used in sentences like "It is possible to affirm that the general justifying aim of punishment is to secure social benefits, while also maintaining that retributive principles must guide the distribution of punishment." This sense of "possible" applies only to sets of propositions, since only propositions

18 The example is from Hart (1988) p. 9.
can be consistent or inconsistent with one another. Since future persons are not propositions or sets of propositions, it seems clear that this is not the sense in which future persons are 'possible persons,' so this sense is raised only to be dismissed.

A second, closely related sense of 'possible' is that used in the sentence "It is possible that I might have had a brother named Fred." Since I don't and won't have a brother, Fred is a possible person who was never and will never be an actual person. It is plausible to give a possible-worlds interpretation of this sentence: there is a possible world in which I exist, and I have a brother. Fred is not actual, and never will be actual. According to some contemporary philosophers, the possible world in which Fred exists is just as real as the actual world. But to make sense of possible world semantics, we need not be realists about the existence of possible worlds, we can be fictionalists. If we are fictionalists, then the sense in which it is possible that I could have had a brother is the same sense in which Sherlock Holmes might have lived on Baker Street. In standard accounts of the ontological argument, this is the sense given to the premise "It is possible that God exists."

Importantly, this is the sense of "possible" which is opposed to the term "actual," and also seems likely that persons who are only possible in this sense of the term cannot have rights against persons who are "actual." Even if David Lewis is right about the reality of possible worlds, there is no way in which the actions of present persons could ever affect the lives of persons inhabiting alternate possible worlds." No valid claims may be made in this possible world (the actual one) by or

19 Arguably, if we could affect the lives of the inhabitants of alternate possible worlds, then those worlds would not be alternate possible worlds, but simply another
in behalf of persons who cannot be influenced or contacted or touched by persons in the actual world. If future persons were "possible" in this sense, then Macklin would be quite correct in claiming that they cannot have rights against actual persons. But future persons do not exist in an alternate possible world, they exist in a future state of the actual world. In this sense of the term "possible," future persons are not merely possible, but very actual indeed. And the actions of present persons may clearly influence the lives of future persons for better or worse- if, as seems plausible to many, this is a sufficient condition for obligations, then there is no difficulty in supposing that present persons may have an obligation, for example, to avoid gratuitously making future persons worse off. Unless our current choices are different-person choices, they will not affect the identities of future persons. When they do not, there is no difficulty in the notion that we might act on behalf of specific future persons: that is, the ones that will come into existence and may be affected by our current choices. Although we may not now know their identities, we can identify them with enough specificity that we pick out only a determinate group. The fact that future persons are not merely possible persons in this second sense explains why it can be true that our present actions can affect their lives for good or ill. And that

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*"region" of the actual world.

20 Including even Rawls (1971), who claims that any plausible moral theory must place moral significance on such utilitarian considerations.
fact is clearly relevant for the ascription of current responsibility to take the interests of those affected into account.

This provides a *prima facie* argument *against* the conclusion Macklin would like to draw: one important reason in favor of the view that future persons have moral standing is that we can, by our present choices and actions, cause their lives to go better or worse. We can cause them to suffer, or we can take steps to avoid causing them to suffer. We cannot do this in the case of persons who exist in merely fictional possible worlds. If this sense of "possible" *is* in fact a sense of that term on which "possible persons" cannot have rights, and if the opposing sense of "actual" is the sense relevant for the meaningful ascription of rights, then the fact that future persons are "actual" in this sense provides at least a *prima facie* argument in favor of the claim that present persons may have obligations to future persons, and perhaps even presumptive support for the claim that future persons *can* possess rights.

A third sense of "possible" is epistemic: if I say that "It is possible that it will rain this afternoon," what I probably mean is that given my prior knowledge and beliefs, I am unable to rule out as false the statement "It will rain this afternoon." Given my epistemic state, it may be that the statement is true or that it is false, and I don't know which.

Unlike the second sense of the term considered above, on this third, epistemic sense of the term 'possible,' future persons may really be "possible persons." Perhaps we cannot conclusively rule out the possibility that the
proposition "There will be no future persons" is true, since however unlikely it may seem, the world may end a few minutes or years from now. However, also unlike the second sense we considered, there is no reason to believe that this sense of "possible" rules out normative relations between distant generations. After all, it is likely that there will be future persons, and we are fully justified in believing that they will exist. Further, their existence is not dependent on our epistemic state, though it may be dependent on some of the choices we will make.

Further, since this sense of "possible" is subjective, and dependent only on our cognitive state, the fact that future persons are "possible" in this sense does not distinguish them from present persons about whose existence we are uncertain. Often, our current behavior has consequences for present persons about whose existence we are uncertain. In such circumstances, we may still be fully responsible for those consequences. We may have obligations to persons who are merely "possible" in this sense, and those obligations may be based on rights. For example, if I go to the Grand Canyon and roll boulders down the cliffs toward the crowded but unseen path below, I cannot claim that I had no obligation to the people on the path below merely because I was uncertain that they would be standing where my boulders landed. Such behavior would be reckless even if there were quite a small chance that no one would be hit. In such a situation, those on the path below would have rights against me even if I don’t know that they are there. Similarly, our uncertainty that future persons will exist cannot by itself justify the claim that we have no obligation to consider the way in which our current actions will promote or
set back their interests. So while future persons are "possible persons" in this sense, this does not distinguish them from the "possible" present persons on whom I may roll boulders. In neither case does "possibility" render moral obligations or rights meaningless or senseless.

To sum up, the sense of 'possible' which makes it impossible for future persons to have rights is the second sense discussed above, but they are actual in that sense. There is a sense of 'possible' on which future persons are indeed possible persons, but the fact that they are possible in this epistemic sense can not support the claim that normative relations between present and future persons are impossible.

4) Future persons do not exist. Because of this, they cannot be the present bearers of anything. Specifically, they cannot be the bearers of rights, nor can current persons have obligations to persons who do not exist.

This argument is closely related to the previous argument, but sufficiently different to justify treating it separately. Richard DeGeorge writes:

Non-existent entities by definition do not exist. What does not exist cannot be the subject or bearer of anything. Hence it cannot be the subject or bearer of rights... Just as non-existent entities have no rights, so it makes no sense to speak about anyone's correlative duty towards non-existent entities. Towards that which does not exist we can have no legal or moral obligation, since there is no subject or term which can be the object of that obligation.21

In short, since future persons do not (now) exist, DeGeorge would like us to conclude that they can have no rights, nor can we have any obligations to them. While few now accept this line of reasoning, there is some disagreement about just

where this type of argument goes wrong. One possibility is that these writers have failed to recognize the distinction between having a right and being in a position to exercise one’s right. There are numerous examples of cases in which persons are unable to exercise their rights: for example, comatose persons who have previously paid their insurance bills may still have a right to medical care; subjects of dictators are commonly said to have a right to the free expression of their opinions, though they dare not exercise this right. And persons who are simply too weak to enforce their valid claims on others do not lack rights merely because they cannot exercise or benefit from them. 22

But it is not clear that this is an adequate response to DeGeorge’s point. On a more sympathetic reading, DeGeorge’s argument is not based merely on the fact that future persons can’t enforce any claims they might have against us, but that since they do not exist, they simply cannot have any properties of any kind, moral or nonmoral. According to some, it makes no logical sense to ascribe rights to something which does not exist, and which therefore simply is not there to have rights ascribed to it. Non-existent roses do not have the property of being red, nonexistent persons do not get hungry or have labor pains, so persons who don’t now exist can’t have rights.

This argument is reminiscent of a certain interpretation of Kant’s refutation of the ontological argument. On one reading, Kant’s claim is that

22 See Feinberg (1992) Chapters 8,9, and 10 for a further discussion and defense of this point.
existence is not a property, but rather a precondition for the meaningful ascription of properties. So it is a mis-use of the concept of ‘existence’ to ask ‘whether God has the property of existence.’ If existence is a condition for the meaningful ascription of properties, then if future persons don’t exist, they cannot have properties.

But this is a bad interpretation of Kant, and also a bad theory of the role "existence" plays in the ascription of properties. Kant never explicitly claims that existence is a precondition for the meaningful ascription of properties. And he does write the following:

"By whatever and by however many predicates we may think a thing—even if we completely determine it—we do not make the least addition to the thing when we further declare that this thing is."  

Here Kant at least *seems* to imply that we may apply predicates antecedent to any consideration of whether or not a thing exists. And well he should. For the original (and popular) reading of Kant cited above would falsely imply that it is meaningless to suppose that fictional entities might have properties. Clearly it is not meaningless to claim that Hamlet is indecisive and Laertes irascible, or that Little Nell died of consumption. It would be a strong objection to any theory of properties if it implied that these claims are meaningless. We should reject this view as a faulty interpretation of Kant, and in general, a radically counterintuitive theory of properties.

However, DeGeorge does not mention Kant’s argument. He cannot be

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23 Kant (1965) p. 505-6.
accused of misinterpreting Kant, and perhaps he cannot be accused of holding an objectionable theory of properties. There is, at least, a more sympathetic reading of his argument. What does DeGeorge mean when he claims that future persons do not exist? It may be less clear than it initially seems. The set of things that don't exist includes Dickens' Little Nell, four-sided triangles, my brother Fred, the cookies I didn't bake this afternoon, my great-grandparents, and my great-grandchild. We need not posit Meinongian "degrees of existence" to recognize that members of this set are not all on a par. In fact, my great grandchild is importantly unlike the other members of this set mentioned here. First any great-grandchild I have will be a person. This distinguishes him or her from four-sided triangles and un-made cookies. Second, the world in which she or he will exist is the real world, and not some alternate possible world. This distinguishes him or her from Little Nell and my counterfactual brother Fred. Finally, my actions and the actions of other present people can influence my grandchild for better or worse. This, finally, distinguishes my great-grandchild from my great-grandparents.

It does not seem problematic to suppose that we have no obligations to fictional characters (like Little Nell) or to the inhabitants of alternate possible worlds (like my brother Fred). It is more problematic, though of course arguable, to claim that we have no obligations to persons who have already died. Persons who "don't exist" in this world, and never will exist again, one might be inclined to say, may not be appropriate subjects of current obligations since nothing we can do will make things go better or worse for them. But not so in the case of future persons. Our
current acts and choices may have crucially important consequences for future persons.

Clearly not all plausible moral theories hold that consequences are the only thing relevant to the ascription of responsibility. But there is no plausible moral theory that holds that consequences are irrelevant in this regard. In general, people would accept that our actions are morally significant when they are likely to worsen the situation of others, and would accept as a principle that we ought not gratuitously make others worse off than they otherwise would be. Such a principle imposes obligations on those who stand to make others better or worse off by their decisions, and these obligations are based on the moral significance of the well being of those likely to be affected. DeGeorge’s claim would imply that this generally plausible moral principle simply doesn’t apply when those whose lives will be affected are future persons. But if we are to accept DeGeorge’s claim, we need an argument telling us why this principle fails to generate future directed obligations in these circumstances. The mere claim that "future persons don’t exist" is clearly not enough.

But perhaps we need more than this to show that it is possible that future persons have rights. Perhaps rights require subjects or bearers, and perhaps this makes them more problematic than the principle-based obligations described above. But rights are neither possessions nor properties, and to say that a person has a right

\[24\] Some, to be sure, have argued that no plausible moral theory can hold this.
being intelligent. To say that ‘A has a right against B that X’ is to say that a normative relation holds between them- it is to say that B has an obligation to A to see to it that X, at least she has such an obligation unless A waives his right, or releases her from the correlative duty. Discussion of ‘rights’ as that term will be used here (and arguably, as they are used in common parlance) can be reduced without remainder to the claims and linked obligations they imply. These claims and obligations are simply normative relations, prescribed by a system of moral rules.

It is not particularly problematic to suppose that relations, moral or other, might hold between present and future persons. For example, the ‘prior to’ relation clearly holds between each member of the current generation and each member of every future generation. It is not meaningless to suppose that my grandchild will be taller than, smaller than, or the same height that I presently am. Inasmuch as rights are shorthand for discussing normative relations between persons, there seems to be no conceptual problem in supposing that such relations may link future persons to current persons. While this is not by itself sufficient to show that future persons do have rights, it does provide reason to believe that the mere fact that future persons do not currently exist does not make it incoherent to suppose that they may have them. And in refuting DeGeorge’s quick argument, that is all we need.

5) The possession of a right entails the ability effectively to exercise it. But future persons cannot exercise their rights. Therefore, it is conceptually

25 In this I follow Hohfeld (1919), Wellman (1985), and Rainbolt (1990).
impossible to suppose that they have rights.

It is characteristic of rights that their bearers can do certain things with them. For example, right holders can waive or press their rights on those who bear corresponding obligations. If the possession of a right implies the ability to exercise it, say by waiving it, or pressing it, then future persons cannot have rights. For by definition, future persons do not now exist. Their inability to exercise their rights, it has been argued, is therefore not merely a physical incapacity, it is a logical incapacity. Hillel Steiner argues that this shows that it is logically incoherent to suppose that future persons have rights.

A future person is unable to demand or waive fulfillment of [rights based] obligations by a present person. And this inability is not merely a physical incapacity, it is a logical inability.26 and elsewhere:

Since rights entail [powers to waive or demand fulfillment], a right must be such that it is not logically impossible-- even if it may be physically impossible-- for its holder either to exercise these powers or to authorize someone else to do so.27

According to this argument, it is not merely that future persons cannot exercise their rights, but that it is conceptually impossible to suppose that they could exercise rights. For they are, by definition, future persons. Right now, their futurity is part of the way in which we identify them— their futurity is constitutive of

their (current) identity.

But this argument, and this conception of what is necessary for rights, would lead us to unacceptable conclusions. Persons who are under the influence of curare are fully conscious, but are unable to speak or move. They can feel pain, but they cannot complain about it. We identify such persons by their state: persons under the influence of curare. Such persons, so identified, are unable to demand that their rights be respected, nor are they capable of waiving their rights. As in the case of future persons, this incapacity is 'logical' in the sense that the criterion we use to identify these people picks out just that property that makes it impossible for them to exercise their rights. However, this seems to be a poor reason for claiming that they have no rights, or that we have no obligations toward them. Similarly, in the case of future persons, the fact that they are unable at this time to exercise any rights they might have provides a poor reason for claiming that they have none, even if the reason why they cannot exercise their rights is logically connected to the criterion (futurity) we use to identify them.

2.5 Preliminary Conclusions

To sum up the argument of this section, I hope that I have provided a strong *prima facie* case for rejecting the *no obligation thesis* and the *no rights thesis*. Uncertainty and indeterminacy of consequences are problems of decision making which make it more difficult to make future directed choices, but these problems are different only in degree from standard choices involving current persons.

Pure reciprocity is impossible between present and future persons.
Because of this, it is impossible for to support reciprocity-based obligations between distant generations. Since such obligations are possible among contemporaries, this marks a real moral difference between present and future persons: moral relations among contemporaries can, but between distant generations cannot be based on pure reciprocity. But other than Gauthier and Hobbes, few accept the radical moral theory that all obligations are based on pure reciprocity: most people have a richer or more diverse conception of the grounds of moral relations. In fact, many would take the fact that reciprocity based theories cannot account for obligations to future persons to be a good reason against accepting these theories. And reciprocal contractual relations between current persons can provide a basis for obligations with respect to future persons, if not for obligations to future persons. Finally, I have argued that there are extended senses of reciprocity embodied in a Rawlsian principle of fair play which could potentially provide a basis for obligations to future generations.

Neither the present non-existence of future persons, nor the sense in which they are 'merely possible persons' supports the no-obligation thesis. And the fact that future persons cannot exercise rights in ways that current people can does not by itself show that they cannot have them. These arguments cut away crucial supports for the no-obligation thesis and the no-rights thesis. However, it is insufficient merely to show that we can have obligations to future persons. It still must be shown that we do have such obligations, and that such obligations may be based on rights. In a preliminary way, we can provide some support for the former claim (concerning obligations) here. Discussion of rights will be taken up in the next
2.6 Argument from Default in Favor of Obligations to Future Persons

From an atemporal perspective, future persons possess (or will possess) properties which are commonly recognized as bases for moral standing. They are capable of happiness and misery, and our decisions may determine which of these they will experience. Utilitarian theories and all theories which take utilitarian considerations to be morally significant must, therefore, recognize that future persons have some moral standing. For many utilitarian views, all that would be needed to support the claim that we have an obligation to consider the interests of future persons would be evidence that our actions have an effect on their expected life prospects. Aside from the increased uncertainty associated with the effects of our actions on them, their moral standing seems to be no different from that of present persons, at least in contexts in which identity is not a problem. Even Rawls writes that no acceptable moral theory could completely ignore the claims of utility and the moral significance of human welfare.28 To the degree that our moral concepts include utilitarian considerations, they support the view that we need to consider the moral significance of the welfare of future persons as well as that of present persons.

Similarly, moral theories which associate moral standing with an individual's capacity for rationality, dignity, or autonomy have no difficulty in accounting for the obligation of present persons to place due weight on the ability of

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future persons to achieve autonomy, and the goods associated with it. Future persons will, after all, be *persons*, and inasmuch as autonomy is valuable for persons in general, it will be valuable for them as well.

The arguments for the *no obligation thesis* and the *no rights thesis* are too weak to undermine these considerations. It seems that we must conclude that *at least* in circumstances in which the identities of future persons are not at issue, the differences between currently existing and future persons are not so great as to eliminate the possibility of obligations to future persons. In a sense, this is an argument from default. Given that there will be future persons, and that they will be relevantly similar to currently existing persons, we should presume that our obligations to them are no different from our obligations to other current persons unless we can find adequate grounds to justify making a moral distinction. Future persons will have properties which are typically associated with the possession of moral standing, and our current actions will have effects on them which are exactly like the effects our actions have on currently existing persons. By our current actions and choices, we can cause future persons to suffer deprivation and injury, and we can cause them to be unnecessarily deprived of the means to achieve autonomy, or to live an adequate human life. In spite of the fact that they do not now exist, these considerations are sufficient to render them proper objects of our moral concern, and justify the claim that we have certain obligations to them. To make a *prima facie* case in favor of the claim that we have obligations to future persons, it is sufficient to show that some such obligations are implied by some of our common sense moral
principles. I know of no plausible moral theory which does not imply the minimal moral principle that "It is wrong to cause gratuitous suffering." Anyone who accepts this principle, and accepts the obvious claim that we could cause future persons to suffer, say, by gratuitously destroying the resources they will need in order to live decent lives, must recognize that we have an obligation not to do so. If the principle used here is accepted as uncontroversial, then the obligations it implies should be uncontroversial as well.

An example makes it clear that the no obligation thesis runs contrary to our common sense moral judgment in a way that makes it impossible to accept. I cannot do better than to cite an example by Joel Feinberg:

A Wicked Misanthrope desires to blow up a schoolhouse in order to kill or mutilate the pupils. He conceals a bomb in a closet in the kindergarten room and sets a timing device to go off in six years. It goes off on schedule, killing or mutilating dozens of five year old children. It was the evil action of the wicked criminal six years earlier before they were even conceived, that harmed them. It set in train a causal sequence that led directly to the harm.29

In this example, the kindergarten children are harmed in a standard sense. While the "wicked misanthrope" may have had duties to the parents of these children as well, surely it makes sense to say that he also had an obligation to the children themselves, even though they did not exist yet at the time the bomb was planted. Our minimal moral principle is sufficient to support this obligation.

However, this minimal principle is not sufficient to accommodate many of our obligations to the future, for few of our choices that will influence the welfare

of future persons are gratuitous in this way. Controlling the current exploitation of resources has serious costs to current liberty as well as current welfare. Many of these costs will be borne in the present, and these choices influence the lives of both present and future persons alike. Because of this, we will need to consider the way in which future people's welfare and (perhaps) rights should be weighed against the welfare, and the valid moral claims of current people. To accomplish this, we will need to develop a more complete theory of intergenerational justice.

However, there is an extremely troubling problem which threatens the possibility of such a theory, and throws in doubt the possibility that future persons could have rights. Unless our theory allows the possibility that current persons can have obligations to the future in the context of different person choices, we may actually have very few obligations to the future, even if such obligations are not conceptually problematic. In the next chapter, we will consider the non-identity problem.
Chapter 3:

THE NON-IDENTITY PROBLEM

3.1 Introduction

The non-identity problem concerns the way in which the identities of future persons are dependent on the choices of currently existing persons. The features of our choices which raise this problem involve considerations we rarely reflect on, and depend on certain facts which may initially seem irrelevant from the moral point of view. The first of these facts is that people's identities depend on the time at which they were conceived. If my parents had conceived a child a month later than they actually did, that child would have had a different genetic makeup from mine, and in many ways its life would have been a different life from the one I have been living. In effect, I would not have existed but for the fact that they conceived me when they did. The second seemingly irrelevant fact is that any large scale social policy is bound to have very widespread, if minor effects on the lives of many people. For any moderately important social policy, many people's lives will
be subtly changed, and these changes will in turn change the timing of numerous conceptions. As a result, different people will exist than would have existed if that policy had not been adopted. Thomas Schwartz argues that even choices which have relatively minor effects on people’s lives will have radical effects on the constituency of future populations. A few generations after a moderately important policy choice has been made, he claims, there is virtually no chance that even a single person will exist who would have existed if that choice had been made differently.” In Parfit’s terminology, such policy choices are therefore different person choices.

It may be surprising that anyone might think that this feature of our choices should be morally significant. Nevertheless, an examination of the way in which our moral theories can account for choices which determine the identities of those who experience the consequences of those choices reveals a number of philosophically interesting puzzles. This examination reveals a serious inconsistency in some of our most important moral concepts. I will focus in my discussion on the concepts of social welfare, harm, and individual rights, but these are by no means the only moral concepts which run into problems in the context of different person


31 Schwartz estimates the probability that a given individual would have existed otherwise (that is, if the policy choice in question had been made differently) rapidly approaches zero, since these probabilities are compounded with each additional generation. For his argument, see Schwartz (1979) pp. 183-4.
choices. The problem, I will argue, is that we can make sense of standard analyses of concepts like *social welfare* and *harm* only if the identities of future persons are morally significant. But we have good reason to hold that the identities of future persons are not morally significant. Because of this, we need to revise our understanding of the way in which these concepts apply to different person choices.

Why would anyone believe that the *identities* of future persons are relevant from the moral point of view? Consider the following example: suppose we need to choose between a policy (call it Conservation) which would involve conservation of our natural resources, and an alternate policy (Depletion) which would involve depleting these resources. We have, let us suppose, accurate information concerning the probable effects of each of these alternatives: if we choose Conservation, both we and our descendants will be adequately well off. The resource base they will inherit will be sufficient for them to satisfy their basic needs, and if they adopt a similarly conservationist policy, they will be able to pass on to the following generations a world which offers opportunities similar to those enjoyed by current persons. Choosing Conservation will make us (members of the current generation) slightly worse off than we would be otherwise, but we will still be quite adequately provided for. On the other hand, if we choose Depletion, we, and the people who exist for the next four or five generations will be a little bit better off than we all would otherwise be. But we can be quite sure that if we choose Depletion, our more distant descendants will inherit a world in which some of their basic needs will go unmet. There will not be enough to go round, and in order
merely to stay alive they will need to deplete the resource base in such a way that the following generations will be progressively worse off than their predecessors.

The question is this: is there any moral reason why we should not choose Depletion rather than Conservation? An argument can be given in support of the claim that there is no such moral reason. For, the argument might go, no one is worse off as a result of this choice. True, the people who exist in subsequent generations are *poorly* off. Our choice to deplete rather than conserve might leave our descendants literally starving in absolute, abject poverty. But if we had chosen differently they would be no better off, because *they would not have existed at all.* Surely it cannot be appropriate to claim that they are worse off than they would have been if they had not existed (whatever that could mean). And if there is no one who is worse off as a result of our choice, what moral reason can we have for objecting to it? According to Parfit, the moral of such examples is that in the context of different person choices, actions that severely lower the quality of life might be worse for no one."

### 3.2 Non-Identity and the Pareto Criterion

This puzzle may be exacerbated into a problem when we consider how standard analytic tools for making social policy apply in such cases. For the contexts in which it applies, the pareto criterion provides the most basic and least controversial concept of efficiency. One major attraction of this criterion is that it

gives a roughly utilitarian standard for social choice which does not require interpersonal comparisons of utility. A state of affairs is *pareto optimal* if it is impossible to make anyone better off without worsening the situation of at least one other person. Formally, an allocation $x$ is *pareto optimal* for a group $i$ if and only if there is no alternative allocation $\hat{x}$ such that 1)$\hat{x}$ is at least as good as $x$ for every member of $i$, and 2)there is at least one member of $i$ for whom $\hat{x}$ is better than $x$. An allocation $x$ is *pareto superior* to another allocation $\hat{x}$ for a group $i$ just in case 1)$x$ is at least as good as $\hat{x}$ for all members of $i$, and 2)$x$ is better than $\hat{x}$ for at least one member of $i$. According to most economists, an allocation is ‘better’ for someone just in case she prefers it to the relevant alternative. Acceptance of the pareto criterion as an indication of utilitarian improvement does not necessarily imply the denial that people may sometimes prefer what is not in their interests, nor is it to assert that there are no values other than subjective-preference satisfaction, though there are economists who hold each of these views. It is, however, to assume that people are generally better off when they are able to get what they think they want than when they are frustrated. Another important, generative notion behind this account of the ‘better than’ relation is that an individual is usually the best judge of her own well being, so her actual choices are often the best way to judge, from an external perspective, what is in her interest.

Typically the pareto criterion is defended on the ground that it provides a utilitarian measure of social distributions which does not require interpersonal utility
comparisons. When there is motion from a pareto inferior allocation to one that is pareto superior, there are some who benefit and none who are any worse off than they were before, so clearly there is a net gain in utility. Further, pareto improvements can always be the result of mutually beneficial transactions. That is, if a pareto improvement is possible, then it is possible for the members of society to come to a mutually beneficial agreement which would allow them to reach it. Because of this, economic theory predicts that pareto optimal allocations will arise when people are allowed the freedom to contract and trade with one another in a perfectly competitive market.33

But many social outcomes cannot be compared to each other using the pareto criterion. For example, if a set of several pareto optimal allocations are all achievable, the pareto criterion provides no standard for comparison among them. This is a serious problem, since in legal contexts we are often required to make comparisons and judgments which involve losers as well as gainers. The allocation in which ‘I own everything’ may well be pareto optimal, since it may be necessary to make me worse off in order to improve the lot of anyone else. But from the standpoint of justice, we may have reason to prefer a more equitable allocation which is also pareto optimal if such an allocation can be achieved without violating anyone’s rights.

33 In order to reach pareto optima, other conditions associated with ideally free markets must also obtain. These conditions will be discussed further in Chapter Five.
For the purposes of social policy, a plausible version of the pareto principle might look like this: if some people (at least one) would benefit from a policy decision, and no one would be made worse off by it, then there is good reason to adopt that policy. To many, this principle looks quite plausible, and many economists and social philosophers take it to be a minimal requirement for the evaluation of social policy. Unfortunately, this innocuous-seeming principle leads to serious problems when applied to 'different person choices.'

For example, in the case of the choice described earlier, we find that Depletion is pareto superior to Conservation even though our more distant descendants will be much worse off if we choose Depletion. If we choose Depletion, we and the people who will exist in the next few generations will all be better off (or at least not worse off) than we would have been if we chose Conservation. Those who come to exist much later will be worse off than the people who would have come into existence had we chosen Conservation, but they are not worse off than they would have been had we chosen Conservation, since they would not have existed at all but for the fact that we chose Depletion. Since some are better off and none are worse off, Depletion is pareto superior to Conservation.

34 One way to reject this conclusion would be to provide an argument to the effect that we can make people worse off by causing them to come into a miserable existence rather than not coming into existence at all. If so, then perhaps those who come into miserable existences in later generations are worse off than they would have been if they had never existed. I consider this issue in a later section.
Few would accept the view that this conclusion provides good moral reasons in favor of Depletion over Conservation. For most of those who have considered it, this argument provides good reason to question the appropriateness of the Pareto criterion itself in the context of such choices. A noteworthy exception is Thomas Schwartz, who claims that the above argument shows coercive social institutions are unjustified if they balance costs and benefits to be enjoyed by current persons against other costs and benefits which would be enjoyed by future persons. If current pollution and resource exploitation leaves no one worse off, then we can have, he seems to claim, no adequate reason to limit people's ability to pollute or exploit irrereplaceable resources.” However, while few accept this conclusion, no one has offered a theory which adequately explains just where this argument goes wrong.

3.3 Non-Identity and Harms to Future People

We can't merely brush this problem off as indicating a fault in the Pareto criterion. For the Non-Identity Problem also raises important difficulties for our commonsense concept of 'harm,' and its more sophisticated philosophical and jurisprudential relatives. If no future person is ever worse off as a result of a different person choice, then such choices cannot harm future persons. And if different person choices are as common as Schwartz suggests, this might eliminate, for practical purposes, the possibility that our current choices might harm distant future persons. Joel Feinberg provides the following analysis of the term 'harm.'

This analysis, he argues, captures the sense of that term which is appropriate for use in legal contexts, and for determining the limits of morally justified legislation. According to Feinberg, A harms B if and only if the following conditions have been met:

1) A acts (in a sense wide enough to include omissions and extended sequences of activity).
2) A’s action is defective or faulty with respect to the risks it creates to B, that is, it is done either with the intention of producing the consequences for B that follow, or similarly adverse ones, or with negligence or recklessness in respect to those consequences.
3) A’s acting in that manner is indefensible, that is, neither excusable nor justifiable.
4) A’s action is the cause of an adverse effect on B’s self-interest (a "state of harm").
5) A’s action is also a violation of B’s right.
6) B’s personal interest is in a worse condition... than it would be had A acted as s/he should have instead of as s/he did."

Feinberg argues that this sense of harm derivatively provides a special sense of ‘victim’ or ‘complainant:’ B is a victim of A when and only when A has harmed her in this sense, and it is just under those circumstances that B has a justifiable complaint against A. This analysis is central to the liberal position Feinberg advocates-- the view that the only legitimate reasons in favor of liberty limiting criminal legislation are those designed to prevent harms or offenses to persons other than those whose liberty is thereby limited. Unfortunately, in the context of different person choices, Feinberg’s analysis has counterintuitive consequences concerning the possibility that present people could harm future

persons.

One important aspect of the problem centers on the sixth of Feinberg's conditions, the 'Counterfactual Test.' Feinberg is not alone in holding that harms must pass this counterfactual test. Others, including Parfit and Schwartz, assume in their analyses that passing the counterfactual test is a necessary condition for a person to have a legitimate complaint or to claim to have been harmed. They seem to believe that this test is so obvious that it needs no supporting argument. Feinberg, however, provides arguments in defense of the counterfactual test. He argues this condition is necessary if we are to account for harms which do not actually worsen the condition of the harmed victim. For example,

Suppose that Doctor A, in giving patient B a medical treatment, improves his condition but not to the extent that it would have improved had the doctor performed up to a higher standard, as he should have. That aspect of A's behavior which consists of the failure to perform up to a reasonably expected standard did adversely affect B's interest... even though B is better off from what A did than he would be had A not been on the scene.7

According to Feinberg, we cannot merely require that the victim's situation is worsened, since some harms cause victims to fail to achieve benefits which they would otherwise enjoy, but for the faulty behavior of the persons who harm them. In order to account for such harms, Feinberg argues that we need to include the counterfactual condition. In the case described above, B has been harmed even though he is in a better position than he would have been if A had not treated him at all.

37 Feinberg (1986) p. 149-150.
In a similar vein, the counterfactual condition seems crucial, since it provides an account of the sense in which one person may have a legitimate complaint against another, and the sense in which a person may be a victim of the criminal behavior of another person. According to some analyses, if there is no one who would have been better off but for the faulty action of the perpetrator of a supposed crime, then there is no victim, and no one has a legitimate complaint. Further, according to Feinberg's liberal theory of the moral limits of legislation, it is illegitimate for the state to restrict individual liberty unless such legislation would prevent harm. Where there is no complainant or victim, the state may not legitimately restrict individual liberty. To do so would illegitimately create 'victimless crimes.'

But including this counterfactual condition seems to have serious drawbacks when we try to apply it to different person choices. Consider the following choices which, following Parfit\(^*\), I will call Risky Policy One and Risky Policy Two, respectively:

**Risky Policy One:** As policy makers, we have a choice between two energy strategies A and B.

If we choose A, we have reason to believe that the standard of living will be very slightly higher for the next century or so. However, it is likely that there will be a nuclear catastrophe in the further future which will cause suffering and death for thousands of people.

If we choose B, the standard of living over the next century will be quite adequate for everyone, but slightly lower than it would be otherwise. However, no risks will be created for the further future.

38 These choices were constructed in a way that mirrors an example provided by Parfit (1981).
Risky Policy One is a same people choice: exactly the same people will exist whether we choose A or B (at least up to the point at which the catastrophe occurs). Specifically, those who would suffer as a result of the catastrophe would have existed if we had chosen B instead of A. Because we are recklessly indifferent to the consequences of our choice on those who will suffer, we choose A. As a result, thousands of people suffer and die many generations later.

Risky Policy Two: This choice is exactly the same as Risky Policy One in all respects save one: choice two is a "different person choice." Whatever we choose, the same number of persons will exist, but different people will exist, depending on whether we choose A or B." Specifically, those who would suffer as a result of the catastrophe would not have existed if we had chosen B instead of A. As in the previous case, we are recklessly indifferent to the suffering of future persons, and because of this, we choose A. As a result, thousands of people suffer and die many generations later.

Is there any morally significant difference between Risky Policy One and Risky Policy Two? Most people share the conviction that there is none. What is morally relevant in either case is the needless suffering, recklessly caused by the callously indifferent policy makers.

However, if we accept the counterfactual test as a necessary condition of harm, then there is a morally significant difference between the two cases. For if those who suffer from our choice would not have existed but for the fact that we made the choice we did, they cannot claim that they would have been better off had we chosen differently. If we had chosen differently, they would not have existed at all. They could, of course, claim that they are worse off than the people who would have existed otherwise would have been. In considering a similar case, Feinberg

39 I stipulate that this is a same number choice only to make the two choices as alike as possible. Nothing in the argument depends on this aspect of the choice.
mentions this possibility and rejects it on the ground that the purported perpetrator of harm might reasonably question what relevance that counterfactual has to the question of whether the policy makers harmed these people by making the choice which brought them into existence. In such cases, there seems to be no victim, no complainant, since no one is worse off. There cannot be "harms" if no one is harmed.

If this argument is accepted, then no one can be harmed by a different person choice. But there may be an exception to this general claim. Under some circumstances, the counterfactual condition will not exclude the possibility that one may be harmed in different person choices: if life turns out to be so bad that it would have been better never to have lived at all (whatever this might mean), then the counterfactual condition may support the claim that we may sometimes harm people by choosing to bring them into existence. Job, sitting on his dung heap, cries "Let the day perish wherein I was born/ And the night when it was said/ There is a man-child conceived." If this were not merely a momentary feeling, but a well considered judgment, based on an adequate understanding of the circumstances of his life and a reasonable assessment of his prospects, then the counterfactual condition might support the claim that this person has been harmed, since he would have been better off if he had never existed. But for suffering even slightly less

40 Feinberg (1986) 174, fn. 29.
42 Some readers might be inclined to object that Job would not, under such circumstances, be better off than he would have been, since he would not have
severe, the kind of suffering associated with more common and mundane harms, the counterfactual condition excludes the possibility that a person who would not have existed otherwise might be harmed by the action or choice which caused her to exist.43

According to any theory of harm which includes the counterfactual test, there is a morally significant difference between Risky Policy One and Risky Policy Two. Millian Liberals could legitimately pass legislation limiting our ability to choose strategy A in Risky Policy One, but could not legitimately pass similar legislation limiting our choice in Risky Policy Two. To many people, this seems odd. The only difference between these two cases is that the identities of those who suffer and those who would be better off are the same in one case, and different in the other case. From the perspective of those who make the choice, none of these identities are discernible. Policy makers certainly couldn't take these identities into account in making their decision. So from the perspective of the present, it may seem odd that our moral concepts should imply that we should take such indiscernible and existed to be better off than he was. Even this possible exception, then, is questionable. It is not at all clear what it might mean to say that a person would have been better off if she had never existed.

43 Feinberg discusses how one might make the judgment that it would have been better never to have existed. Feinberg (1986).
unknowable features to be morally relevant. One way to defend the counterfactual condition would be to provide an independent argument in favor of the claim that the identities of those future persons who suffer as a consequence of current different person choices are morally significant. In Parfit's terminology, we would need an argument to the effect that the fact of non-identity makes a moral difference. However, this would not be sufficient to show that future persons can be harmed in the context of different person choices. For to be harmful to future persons, such choices must also violate their rights.

3.4 Non-Identity and Rights

The non-identity problem is among the strongest supporting arguments for the no-rights thesis, and since harms to others necessarily imply the violation of others' rights, this seems to provide an additional, independently sufficient argument in favor of the claim that future persons cannot be harmed by different person choices. For what is characteristic of rights is that they are correlative to obligations which are owed to, or linked to a determinate rights bearer. On this conception, rights just are linked obligations, and what they are linked to is their determinate claimants. As Hohfeld puts it, rights, like pencils, have two ends, and the obligations they imply are not general obligations, but obligations to a specific individual. In the context of risky policy two, and other relevantly similar cases, to

45 Hohfeld, (1919).
whom is the obligation owed?

We might like to say that the obligation not to choose the risky policy is owed to those who suffer as a result. But by stipulation, their lives are worth living, so it is not the case that bringing them into existence is worse for them than never having lived at all would have been. If life itself is not a harm for them, then it is difficult to see how we could possibly harm them or violate their rights by bringing them into existence. If we cannot, then the obligation not to choose the risky policy cannot possibly be based on the rights of future persons.

In the context of different person choices, the identity of the person to whom our obligations might be owed is just what is in question: the identities of the potential rights bearers are contingent on the present choices which are supposed to violate their rights. If those who suffer in risky policy two don’t have a right not to be brought into existence (whatever such a right might be like), then it is difficult to see just what rights they might have that could possibly provide a normative constraint on the actions of current policy makers. Rights require determinate claimants. But in the context of different person choices, this is just what we seem to lack.

3.5 The No-Difference Thesis

Earlier, I argued that in order to maintain the counterfactual condition in the context of different person choices, we would need an independent argument for the claim that the fact of non-identity makes a moral difference. It seems unlikely to
me that such an argument will be successful. Once again following Parfit, we can call the claim that the fact of non-identity makes no moral difference the *No Difference Thesis.* In arguing for this thesis, I can do no better than to refer to one of Parfit's colorful examples:

**The Medical Programmes.** There are two rare conditions, J and K, which cannot be detected without special tests. If a pregnant woman has Condition J, this will cause the child she is carrying to have a certain handicap. A simple treatment would prevent this effect. If a woman has Condition K when she conceives a child, this will cause this child to have the same particular handicap. Condition K cannot be treated, but always disappears within two months. Suppose next that we have planned two medical programmes, but there are funds for only one; so one must be canceled. In the first programme, millions of women would be tested during pregnancy. Those found to have Condition J would be treated. In the second programme, millions of women would be tested when they intend to try to become pregnant. Those found to have condition K would be warned to postpone conception for at least two months, after which this incurable condition will have disappeared. Suppose finally that we can predict that these two programmes would achieve results in as many cases. If there is Pregnancy Testing, 1,000 children a year would be born normal rather than handicapped. If there is Preconception Testing, there would each year be born 1,000 normal children rather than 1,000 different handicapped children."

Parfit's example is similar in structure to my version of the *Risky Policy* case. The only difference between the choice to fund treatment for Condition J, and the choice to fund treatment for Condition K is that in the former case, we would be benefiting people who would have existed anyway, while in the latter case we would be causing different persons to come into existence than would have existed


otherwise. If we choose to fund treatment of condition J, it would seem that there are no potential complainants. That is, those who are born deformed as a consequence of our choice can not rightly say "but for your choice, I would be better off than I currently am." If we had chosen to fund condition K, those children would not have existed at all. On the other hand, if we choose to fund treatment for Condition K, the children who are born deformed because their mothers had Condition J could say that but for our choice they would have been better off, since they would have existed in any case.

If we believed that the problem of non-identity had moral significance, this should lead us to the conclusion that we have an important moral reason to fund treatment of Condition J rather than Condition K. But most people find it obvious that there is no moral difference between the two choices: the consequences of either choice are virtually the same-- at least, one might be inclined to say, they are the same in all morally relevant features. If so, then we should accept the No Difference Thesis. But if we accept this thesis, then by an extension of modus tollens, it seems we must reject the counterfactual test, Feinberg's sixth condition for the ascription of harm, since it directly implies that the fact of non-identity has moral significance.

In a similar vein, commitment to the No Difference Thesis might call into question certain properties of our commonsense concept of rights. For as noted earlier, one feature of rights which distinguishes them from many other moral concepts is that rights are associated with determinate claimants. This poses no difficulty in the context of same-person choices. As we argued in the previous
chapter, claimants may be determinate in the appropriate sense even if we cannot now *know* their identities. So, for example, hikers on the trail below have a right that I not roll boulders down onto them. People in the distant forest have a right against me that I not fire my gun indiscriminately into the brush. This right is not diminished by the fact that I don’t know just who will be struck by my boulder or bullets, nor by the fact that I can’t even be sure that there is anyone there to be hurt. What matters, in *this* context, is that there are determinate persons who are claimants, or right-bearers, who may either assert their claims against me, or in whose behalf claims may be rightly asserted.

But if this is what matters for the meaningful ascription of rights, then our concept of rights would seem to face the same problems as the counterfactual test. For in the context of different person choices, the indeterminacy of the claimants is just what creates the problems. When our choices determine which persons will come into existence, then it is difficult to suppose that those whose existence is a consequence could have their rights violated. If, as seems at least initially plausible, different-person choices which unnecessarily leave future persons miserable and destitute are wrong because they violate the rights of those who are left destitute, then the only way to respect such a right would be to ensure, as Jefferson McMahan writes, "that no one...comes to possess that right." That is, if these "rights" are *not* violated, then no one will come into existence who will possess them, and they will be possessed only if they are violated. If there is no one who

possesses a right, how is it possible that it could generate a correlative duty for present persons? If no one comes into existence who possesses these rights, then the rights themselves cannot exist. These must be odd "rights" indeed, which are possessed only if they are violated, and which don't exist to be violated unless they actually are violated. McMahan recognizes this paradoxical implication, but simply claims that "population theory is an area in which we may expect the collapse of certain standard assumptions." 49

As with the counterfactual test, the problem is that our conception of rights seems to imply that the identities of future persons are morally significant. As in the case of the counterfactual test, one may construct an argument that we should change our concepts to conform with the No Difference Thesis: Since the No Difference Thesis is true, the identities of future persons are not morally significant. But our conception of rights implies that the identities of future persons are morally significant. Therefore, we must change our conception of rights.

Of course, as stated here, this argument is question begging. All arguments of this form must be recognized as double edged: faced with a modus tollens argument, we can either accept the conclusion, reasoning that since the No Difference Thesis is true, we must reject the counterfactual condition and our intuitive understanding of rights. Alternately, we could reason that since we cannot reject the counterfactual condition, or relinquish our conception of rights, we must

49 McMahan (1981) p. 125, fn 34.
reject the *No Difference Thesis*. Since we have shown only that there is tension among our intuitive moral commitments, choice between these alternatives will depend on the relative strength of our intuitions. Using Parfit's argument, I hope that I have strengthened our commitment to the *No Difference Thesis*. In what follows, I will investigate several ways in which we might relieve this tension among our moral commitments.

### 3.6 First Suggestion for Revising the Counterfactual Test

The most popular solution to the Non-Identity Problem amounts to a revision of the counterfactual test. Parfit argues that the problem shows that we must accept the following principle for making different person choices:

**Same Number Quality Claim Q:** If in either of two outcomes the same number of people would ever live, it would be worse if those who live are worse off, or have a lower quality of life, than those who would have lived.  

Parfit believes that no theory which fails to include Q will be able to accommodate different person choices. If we want to support the view that we can harm future persons, one way to do this would be to revise the counterfactual to accommodate the central intuition behind Q. Recall the original counterfactual test, as formulated by Feinberg: B has been harmed by A only if

B's personal interest is in a worse condition... than it would be in had A acted as s/he should have instead of as s/he did.  

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51 Feinberg (1986) p. 149.
For the context of different person choices, this could be revised as follows: Let B represent the supposed victim of the harm, and B* represent the person who would have existed if A had acted as s/he should have: B has been harmed only if

B's personal interest is in a worse condition than B*'s personal interests would have been in if A had acted as s/he should have instead of as s/he did.

Since the problems we have discussed arise only in the context of different person choices, we could stipulate that in ordinary cases, where identity is not a problem, the earlier version of the counterfactual test is sufficient. Clearly the revised version of the counterfactual test can apply only in the context of different person choices.

3.7 Can we Reject the Counterfactual Test?

Some will be unsatisfied with the revised counterfactual test. For example, Jan Narveson argues that moral considerations should generally be restricted to effects on people for better or worse.” The revised counterfactual condition, like Parfit’s Principle Q, would provide ground for judging some outcomes to be worse than other outcomes even when there is no one who is worse off. This restriction is sometimes referred to as the "person affecting restriction." The counterfactual test, in its first formulation, conforms to this restriction. But the revised test is impersonal.

52 See Narveson (1978).
In a similar vein, Feinberg argues that there is no legitimate complainant when the revised counterfactual condition is violated. To use the term "harm" or "wrong" in such a context, claims Feinberg, represents "a rather sharp departure from the concept of harming-wronging as it is normally and naturally employed." He suggests that the claim that "I am worse off than the person who would have existed had you chosen differently" is not adequate to support the claim that I have been harmed by your choice. In such a context, the supposed perpetrator of harm could legitimately claim that the fact that those who would have existed (but never did) would have been better off is simply irrelevant. Those who agree with this conclusion, and those who reject impersonal moral principles, must either accept that no one is ever harmed by different person choices, or find another way to avoid the counterintuitive consequences of the counterfactual test.

One way to do this would be simply to reject the counterfactual condition altogether as a necessary element of our concept of harm. But can we afford to relinquish our commitment to the counterfactual test? Consider the reasons we had for adopting it in the first place. First, it was argued that the test was needed to account for harms which do not actually cause a setback of the victim's interests, but only cause the victim to fail to achieve some benefit which she would otherwise have enjoyed. Second, the counterfactual test seems to capture an important aspect of


harm: the existence of a complainant. Perhaps we can accommodate these problems without referring to the counterfactual test.

*Risky Policy Two* describes a situation in which a current different person choice causes a nuclear catastrophe in the distant future. In *Risky Policy Two*, it can be argued that the harmful conditions future persons suffer as a result of the reckless current choice is the moral responsibility of whoever made that choice. After all, those who come to exist suffer real harms, and the decision maker in the example understood the risk of harm, and could have predicted the result. In that sense, the policy maker is morally accountable for the harms which are suffered. Nothing in this explanation of these harms depends on whether those who suffer those harms would have existed if another policy been chosen instead. In a recent article, Matthew Hanser suggests this as a solution to Parfit's non-identity problem. In considering a version of *Risky Policy Two* he writes:

First, the people who would die in the catastrophe would suffer harms. ... Second, we would be responsible for their deaths, since we would be responsible for the presence of the radioactive material, and we would have known when choosing the analogue of Parfit's risky policy both that there was a risk that radiation would leak, and kill thousands of people, and that the advantages of the policy were insufficient to justify the risk. But both parts of this explanation hold for our choice of Parfit's risky policy as well: nothing in the explanation turns on whether or not the people who would die in the catastrophe would have existed had another policy been chosen instead. The people who die in the catastrophe resulting from Parfit's Risky Policy thus suffer genuine harms for which we are morally accountable."

Hanser does not frame the problem in terms of Feinberg's counterfactual test, but his solution amounts to a rejection of that test as a necessary condition for	55 Hanser (1990) p. 58.
the ascription of harms. To see whether this solution is acceptable, we need to consider our reasons for adopting the counterfactual test in the first place. Consider an example Feinberg employs in his argument:

Suppose a professional model (B) is wrongfully detained by A on the eve of the Miss America contest, in which, let us suppose, she would otherwise have won a prize worth over a million dollars in subsequent engagements and opportunities.

Feinberg claims that the counterfactual test explains why B has been harmed: while she is no worse off than she was prior to being wrongfully detained, she is worse off than she would have been had she not been detained. But do we really need the counterfactual test to account for the fact that she has been harmed? Arguably, we do not. Before being detained, B had a chance at winning the contest. Any complete ‘graph’ accounting for the state of her interests would include a measure of the prior probability that she would win the contest, and a measure of the value to her if she did win. This expectation is itself part of what constitutes the state of her interests. In detaining her, A directly sets back her interest, by taking this expected good from her. In claiming that this harms her, we need not refer to any counterfactual state she might have enjoyed, we can refer directly to the expected benefit that was taken from her. If so, then the counterfactual test is not necessary to accommodate harms which might seem to leave the victim no worse off than she was prior to the action of the perpetrator: if we include the expectation of future benefits among the agent’s present interests, then any action which wrongfully diminishes the

56 Feinberg (1986) p. 149.
probability that she will enjoy those benefits may constitute a present setback of interest.

These considerations lead me to conclude that we do not need the counterfactual test as a necessary condition of harm. If we include expectations among an agent’s present interests, the counterfactual condition is not necessary to account for harms to present persons. In the context of different person choices, the counterfactual condition would require us to accept the radically counterintuitive claim that the fact of identity has moral significance. Consequently, the counterfactual condition leads to unacceptable conclusions in the context of different person choices.

Although I do think that the counterfactual test is unnecessary, I do not believe that this is the only fault in the argument leading to the non-identity problem. In fact, as will become clear, I believe that we can find a satisfactory solution to the non-identity problem even if we do not reject the counterfactual test. If I am right, rejection of the counterfactual test is neither necessary nor sufficient for the elimination of the non-identity problem. To show that it is not sufficient, we need only point out that the problems we have been discussing with respect to the pareto criterion, and with respect to the putative rights of future persons are not solved if we reject the counterfactual condition. To show that it is not necessary, we will have to develop an alternate, and more comprehensive solution to the problem.
3.8 Outline of a Solution Concept

Some people will still find it counterintuitive to suppose that a person could be harmed by an action but for which she would not have existed at all, as in the case of risky policy one. Granted, the supposedly 'victimless crimes' (or, perhaps, victimless wrongs) which may occur in the context of different person choices are not like the victimless crimes we are used to considering. In the case of most victimless wrongs, no one suffers as a result of the faulty action of the perpetrator. But in the cases we have been considering, there are people who suffer as a result of the blameworthy acts of the wrongdoer, and those people would not have suffered but for her blameworthy action. The degree and kind of suffering is similar to that which we associate with other more standard cases of harm. But the wrongful choice provided the person who experiences this suffering with the only chance she had to enjoy life at all. Some will find it unconvincing to suppose that one could have a complaint against the person whose actions determined that she would have that chance.

According to the Millian Liberal, only behavior which is harmful to others may legitimately be criminalized. But "harm" involves the violation of rights, and as we have seen, rights require determinate right holders. In the context of
different person choices, there are, it seems, no determinate right holders. The
wider and more significant the effects of our current choices are, the more likely it is
that these choices will affect the time and circumstances under which future
conceptions will occur, and the more likely it will be that these choices will affect
people's reproductive decisions. In a liberal state that accepts this concept of harm,
there is an easy way to avoid prosecution for acts which will affect only future
persons: make sure that the effects of one's choices will be sufficiently widespread
and significant that they will affect the timings of many conceptions. This will insure
that one's choices are different person choices, and since such choices cannot violate
any rights (no determinate claimants) and make no one worse off (applying the
counterfactual test) they cause no harms. Since most large scale decisions about
energy use have widespread effects, these decisions are most likely to be different
person choices. It seems to follow from these considerations that we generally have
no need to worry that our current energy choices will harm future persons, even
when (or perhaps, especially when) these choices will leave many persons worse off
than they otherwise would be. I hope that this consequence is at least as
counterintuitive as the notion that a person could be harmed by an action but for
which she would not have existed at all.

With the benefit of the previous discussion, let us reconsider the nature
of the problem we want to solve. By the definition of "different person choice," in
the context of such choices the people who experience pain and suffering as a result
of present day decisions would not have existed but for the choices which cause them
to experience this suffering and pain. Therefore, if we accept the person-affecting version of the counterfactual condition as a necessary condition for harming, then they cannot claim to have been harmed by these choices.

Similarly, we have argued that when these choices have the double effect that they cause currently existing persons to enjoy a benefit, they are Pareto efficient. No one is harmed (since those who suffer would not have existed otherwise), and some people benefit. According to the Pareto criterion, it would actually be better to choose to benefit currently existing persons, no matter what the consequences are likely to be for those who do not yet exist. However, in cases which are exactly parallel but for the fact that they are same people choices, and do not involve the identity problem, those who experience pain and suffering as a result of present day decisions can claim to have been harmed, and such decisions are not Pareto efficient, since some people are worse off as a result.

Finally, we have argued that the fact of non-identity has no moral significance. That is, if two choices are identical in all respects, except for the fact that one is a different person choice while the other is not, then there is no morally relevant difference between them. The pareto principle, and the legal/moral concepts of "harm" and "right" all seem to imply that there is a morally significant difference between cases involving the identity problem, and cases for which the identity problem does not arise. But if the no difference thesis is true, then the fact of identity has no moral significance. It seems that we have an inconsistent set of commitments.
With this fix on the nature of the problem, consider the features of a theory that would provide an ideal solution: First, an ideal theory should be consistent with the claims that the ‘fact of non identity’ has no moral significance. Second, and consequently, it should be capable of making sense of the claim that we can harm future persons, even in the context of different people choices. Ideally, it would provide a way to justify our judgment that there is no morally significant difference between the harms inflicted in choice situations which are relevantly similar to \textit{risky policy one} and \textit{risky policy two}. Third, an ideal theory should provide a way to make sense of just what goes wrong with the Pareto principle in the context of different person choices. Finally, it should be capable of accounting for the application of person-affecting moral concepts (rights, harms, etc.) to future persons. If our commitments are truly inconsistent, then there can be no such theory. However, in what follows, I hope to show that we can provide an adequate theory without relinquishing any of them.

\subsection*{3.9 Framing Future Directed Decisions}

Many people believe that we now face choices which are relevantly similar to \textit{Risky Policy Two}. As a society, we now face energy decisions which will determine, to a large degree, the conditions of life for many generations of people who will follow us. Because these choices will have such widespread effects, and because they will cause changes in the lives of so many people, these choices are also
different person choices. But information about the identities of those who will come into existence is not available to us now as we frame these decisions. In order to find a fully satisfactory solution to the identity problem, I will argue, we need to look at that problem from the perspective of the present. From that perspective, we need to determine what is relevant for us as we frame decisions in which the identity problem arises. I will argue that the problem arises only if we incorrectly frame decisions involving future persons.

There is an important respect in which our decisions involving currently existing persons resemble different person choices. Our choices concerning current persons also may change crucial facts about them. For example, it is not clear that I am identical to the person who would have existed had my parents chosen not to fund their child’s college education. People’s ‘identities,’ in the sense of that term which seems to be relevant here, are contingent on their heredity, but also on the formative experiences which shape their personalities.

To consider a hypothetical example, suppose that if I fail to keep my promises to Jonelle, she will as a result become a bitter and mistrustful person. If I do keep my promise to Jonelle, she will not become bitter and mistrustful. Is this a different person choice? An argument can be given in support of the claim that it is. If my failure to keep my promises were a formative experience for Jonelle, and if the consequent bitterness and mistrustfulness would come to be constituent elements of her character, then I have in effect changed the nature of the person she would become.

Could I later claim, in defense of my decision not to keep my promise to
Jonelle, that had I chosen differently, the bitter person she has now become would never have existed at all, and that therefore "she" is no worse off than "she" would have been had I acted as I should have acted instead of as I did act? Scare quotes here indicate what is at stake: is there a relevant sense in which Jonelle is a different person from the Jonelle she would have been (say, Jonelle-2) had things been different? Presumably she is not. But if not, what kind of counterfactual differences would be sufficient to support the claim that Jonelle is a different person than she would have been? In this hypothetical example, it would clearly be absurd for me to claim that bitter and mistrustful Jonelle-1 would have no complaint against me, since otherwise "she" would not have existed. The moral should be clear: the facts about Jonelle's identity which are relevant from my point of view as I decide whether or not to keep my promise do not include the differences in her personality that would be caused by my failure to do so.

Why isn't my decision concerning whether or not to keep my promise to Jonelle a different person choice? It is because Jonelle is the same person regardless of how I choose. That is, the features of Jonelle which identify her as the object of my obligation do not include the aspects of her which would be different depending on my actual choice. The difference between bitter and mistrustful Jonelle-1 and happy and well adjusted Jonelle-2 do not qualify "them" as different persons from the moral point of view. There are differences between 'them,' but these differences simply are not relevant from the moral point of view. I cannot so easily avoid my obligations to Jonelle. From the perspective of my choice, I have no business even making a distinction between Jonelle-1 and Jonelle-2: 'they' are the same single
person from the perspective of my decision.

However, as individuals, our identities are in important ways dependent on our histories, and by our formative experiences. It is far from clear that "I" would still have existed if my parents had chosen to send me to an orphanage, or had raised me under radically different circumstances. They could have chosen to do these things, so my current identity is in part a direct consequence of their decision not to. It is not clear, however, that the fact that "I" would not have existed (or at the very least, that I would have been radically different) should be taken in such a way that it excludes the possibility that I could have a complaint against my parents had they recklessly treated me in ways which simultaneously caused me to be very different from the way I currently am, and which predictably had the double effect of causing me needlessly to suffer. The effects of such choices on the identities of the persons concerned are different in degree, but not, I argue, in kind from the differences between the persons who come into existence as a result of so called 'different person choices.'

In the context of such choices, what matters is not the identities of the persons who come into existence as a result of our choices, but the criteria we use to identify future persons from the perspective of the present. And our ability to identify different possible future persons depends crucially on the information we have concerning those properties which are relevant in determining their identities. When we are considering these choices from the moral point of view, we need to identify morally relevant features of the persons involved.

From our present perspective, is there any reasonable sense in which the
identities of future persons could be relevant to us as we make current decisions? To answer this question, we need to consider what information is currently available to us concerning the identities of persons in the context of decisions like those we have been considering. We know that they will have different properties depending on our current choice. This does not distinguish such choices from the choice described earlier in which my failure to keep my word would cause Jonelle to become bitter. However, as stipulated in our initial presentation of the non-identity problem, those who come to exist would also have different genetic make up and significantly different histories. Are these differences morally relevant?

I argue that they are not. My obligation to Jonelle in no way depends on her genetic makeup. It depends (in this case) on a prior agreement. If I found that her genetic makeup were radically different from my prior expectations, this would not eliminate my obligation to her. In the same vein, were she to have her genetic structure artificially altered after I made my promise, or if my promise were a promise artificially to alter her genetic makeup, this would also be insufficient to eliminate my obligation to her. Here genetic makeup is not a relevant consideration when I identify Jonelle as the object of my obligation. Similarly, Jonelle's specific history, the constitutive experiences which previously determined important facts about her personality and situation, are irrelevant from the moral point of view. However, one thing which clearly is relevant concerning my obligations to Jonelle is the relation which stands between my actions and her interests. My actions can influence her life for good or for ill. If my faulty and inexcusable action causes her to experience pain and suffering, then I have harmed her.
The situation is the same in the context of decisions in which the non-identity problem is supposed to arise. What matters about the 'identities' of future persons from the moral point of view is neither their genetic makeup nor the formative experiences which determine aspects of their personalities. What matters is the relation that stands between our actions and their interests. One way to express the point I want to make is this: the identity problem arises only if we incorrectly frame decisions involving future persons. The incorrect frame is criticizable in that it makes distinctions which are based on irrelevant and unknowable aspects of the choice. The identity problem arises if we identify future persons according to their genetic makeup, or by aspects of their personalities which develop as a result of experiences which are contingent on our current choice.

From the perspective of the present, we cannot know the genetic make up of those who will come into existence in the future, and we cannot know many facts about the formative experiences they will have, and which will shape their personalities. We may know that their genetic make up will be different and that they will enjoy different formative experiences depending on the choices we currently make, but our information is no more specific than this. Since we don't know any specific information concerning the genetic makeup of the supposedly different persons who will come into existence depending on the choice we make, this cannot provide reasons for making a distinction between them when we frame decisions which will affect their lives. The problem may not be merely an epistemological one: it is possible that there simply is no present fact to be known about the identities of future people. On one theory, (fairly popular among logicians
and metaphysicians) propositions about the future are presently neither true nor false. For those who accept this view, not only do we not know any information concerning the identities of future persons, there is no information to be known. Most importantly, in the context of decisions in which the identity problem arises, the properties which render the 'different possible future persons' different are not relevant from the moral point of view, since these properties are not the basis for our obligations in any case.

We need principles for identifying or individuating future persons which take into account what is morally relevant about them. Individuating future persons by genetic makeup is too fine grained, and focuses on morally irrelevant features. But what is morally relevant about future persons? One thing that is clearly relevant is the relation which stands between the lives future persons will enjoy, and the choices we now make. Whoever they turn out to be, our present actions and choices can make their lives go better or worse. This suggests a broad criterion for the individuation of future persons: we should identify them only as 'those who will experience the consequences of our current choices.'

Identifying future persons by this broad criterion will not distinguish between the two supposedly different populations that would come into existence as a result of the choice in Risky Policy Two. However, it does provide a definite description that picks out one and only one group of actual persons: it picks out just those who actually come into existence, since the 'other' population will never exist. Identifying future persons in this way allows us to pick out what is morally relevant about them. And when we individuate future persons according to this broad
criterion, the identity problem does not arise.

Adopting broad criteria for the individuation of future persons offers a broadly person-affecting solution to the identity problem. Our obligations to future persons are to identifiable individuals—those who actually come into existence in the future. These are not merely ‘possible people,’ since they exist in this world, the actual one. As we argued in the previous chapter, the fact that they don’t yet exist in the actual world doesn’t make them less actual people. Nor are they less actual persons merely because some of their properties, including genetic and acquired properties, are contingent on our decisions. As long as ‘they’ (using this preposition to individuate future persons in the way I have suggested) will exist, there is no reason to suppose that they are any less actual than the rest of us.

Our common sense notions of excuse and blame, usually taken as paradigmatic person-affecting moral concepts, support this solution to the non-identity problem. If we were currently to choose to adopt a risky policy, offering slender and short lived benefits to us, but a high probability of deep suffering for those who will come into existence many years from now, we would be blameworthy for doing so. It would be absurdly inappropriate for us to excuse our choice on the ground that those who will suffer would not have existed had we chosen differently. If we identify future persons broadly as ‘those persons who will actually experience the consequences of our choices’ then it becomes clear why this defense is inappropriate. In a parallel vein, it would not be inappropriate for those who suffer to blame us, and to feel morally indignant that we should have given such inadequate consideration to their livelihood.
3.10 The Counterfactual Condition and the Pareto Principle Revisited

I argued earlier that the counterfactual condition may be an unnecessary element of an account of harm, since supposed counterfactual benefits may be taken into account in terms of the current expectations of the victim. Those who are unconvinced by that argument may find the solution to the non-identity problem which I have proposed above especially appealing. For this solution would allow us to maintain the counterfactual condition, and would eliminate the counterintuitive implications it has in the context of different person choices.

The alleged problem with the counterfactual condition was that it inappropriately makes the fact of non-identity morally significant. For example, if we accept the counterfactual condition, we are required to say that those who choose to accept the risk to future persons in risky policy one (a same people choice) harm those who later suffer, while the same choice in risky policy two (a same number choice) is a victimless crime. Those who suffer in risky policy two have no complaint against the policy makers who wrongly disregarded their interests.

However, if we individuate future persons simply as persons who will experience the consequences of our choices, then both risky policy one and risky policy two effectively become same people choices. Individuated in the way I suggest, there are not, in effect, two separate populations which will come into existence or not, depending on our choice.

This, I suggest, coincides with our common sense intuitions about the
counterfactual condition and the sense of 'victim' which is appropriate in these circumstances. For just as I can meaningfully say that I am better off than I would have been if my parents had chosen not to fund my college education, I can meaningfully say that I am better off than I would have been if my parents had conceived me earlier, or that I am not as well off as I would have been if my genetic makeup had been different. It may be false, but it is not nonsense to say "I'd be happier if I were smarter!" And if this isn't nonsense, the sense of "I" must be broad enough to include me as I am, as well as the genetically different "smarter me." The sense of identity here must be broad enough to identify me as "me" even if, counterfactually, I would have very different properties.

A further advantage of this solution to the non-identity problem is that it makes clear just what went wrong in our earlier discussion of the Pareto principle. Conjoined with the broad principles I suggest for the individuation of future persons, the Pareto principle no longer implies the counterintuitive conclusion Schwartz draws. One of the most important reasons why economists and many philosophers have found the Pareto principle appealing is that when it provides a basis for comparing two alternate policies, it guarantees net utility gains without requiring any interpersonal comparisons of utility. In standard economic contexts (in which the non-identity problem does not arise) Pareto improvements necessarily imply a net gain in utility, since some are better off and no one is worse off. Schwartz's method for applying the Pareto criterion intertemporally does not imply net utility gains. Since those who come to exist under conservation are different persons from those who come to exist under depletion, no one is worse off no matter which alternative
we choose. So according to the pareto criterion, all options in different person choices are either pareto equivalent, or pareto incomparable."

Adopting broad criteria for the individuation of future persons does not in itself provide a better choice criterion than Schwartz's version of the Pareto criterion. It does, however, provide an intuitive explanation of just how we can resist Schwartz's repugnant conclusion. If we identify future persons only as 'those who will experience the consequences of our actions,' then the supposedly different populations which will come into existence depending on our choice of conservation or depletion are effectively the same population. Choosing depletion, then, amounts to 'making our descendants worse off than they would be otherwise.' They would have a justified complaint against us, and would be harmed by such a choice. It is not the case, then, that 'some are better off and none are worse off' if we choose depletion over conservation, so the Pareto criterion provides no standard for comparing these options. By the Pareto criterion, depletion and conservation are not

On one reading, two distributions are pareto equivalent if and only if there is no one who prefers either to the other. But in the cases we have been considering, the term "noone" might seem ambiguous: We might take it either to mean that none of those who exist prefer either to the other, or that none of those who exist or those who would have existed otherwise prefer either to the other. Obviously then, whether we judge distributions over different person choices to be pareto equivalent or pareto incomparable will depend, in an important way, on whether or not we accept the criterion for the individuation of future persons I recommend above.
equivalent, they simply cannot be compared at all. Fortunately, intergenerational comparisons are not quite as clear and unproblematic as they seem to Schwartz. Unfortunately, we still need a theory which would provide a better ground for making these comparisons than that provided by the Pareto criterion.

3.11 Future Persons and Rights

Now we are in a better position to assess the no rights thesis. Can we support the claim that future persons may have rights against current persons? In fact, our answer depends partly on the conception of 'rights' we employ. For example, if rights are based on pure reciprocity, as Gauthier argues, then it is clearly impossible for future persons to have rights. However, on what I believe to be the most plausible conception of rights, we can argue that future persons have rights.

According Hohfeld, rights are obligations which are linked to determinate claimants. The difficulty raised by the non-identity problem called into question whether future persons are determinate, since, as Parfit frames the problem, their identities may depend on our choices. However, if my account of the non-identity problem is correct, we need to identify claimants not by morally irrelevant features like genetic makeup, but rather according to what is morally significant about them. Future persons, identified as those who will experience the

\footnote{I limit the discussion here to what Hohfeld (1919) called claim rights. This is not to deny that future persons may have other kinds of rights as well, but I am primarily concerned to show that they may have valid claims against the present.}
consequences of our current choices, are sufficiently determinate to be the claimants to whom our obligations are linked. Clearly it is those who would suffer as a result of our inexcusable and faulty choice who would be rightly indignant that we failed to give proper weight to their interests. In this sense, future claimants are sufficiently determinate to be right bearers: we can pick out specific individuals whose interests might be protected as a matter of right.

But this is not yet sufficient to show that future people have rights, only that the non-identity problem does not make the idea that they may have rights conceptually problematic. It is still necessary to show that we have obligations which are linked in the right way to the future people who are supposed to be right bearers in this context. Not all obligations are based on the rights of their beneficiaries. If A promises B to look after C, this may be a way for A to incur an obligation to look after C. However, it does not follow that such an obligation would be based on C’s right against A. Rather such an obligation could be owed by A to B and with respect to C. Such a promise is sufficient basis for B’s right against A, but under such circumstances C might merely be a beneficiary, not a right bearer. In a similar vein, some have argued that the obligations people have with respect to animals are not based on or linked to the animals themselves, but rather to other people, who may be upset by seeing animals suffer, or brutalized by the experience of seeing animals suffer, so that they become cold and indifferent to suffering in people.9 Such arguments are not sufficient to support the claim that animals may

9 See Kant (1991) p. 238.
have rights, since the obligations may not be linked in the right way to the claims of the right bearer.

How can we show that future people have legitimate claims on us, which provide a basis for their right-claims against us? We need to show that there are some accepted or valid moral rules which provide the basis for such a claim. Such a rule must provide justification for the notion that our obligation is owed to those who will come to exist in the future, and not merely an obligation with respect to future people.

Once again, we may appeal to our minimal moral principle in support. That principle was "It is wrong to cause gratuitous suffering." Even so minimal and (I hope) uncontroversial a principle as this is sufficient to generate rights for future people. For this principle implies certain obligations which are linked to those who would gratuitously suffer were we to violate it. Obviously we cannot have obligations to persons who don't exist and never will, but if we individuate future persons according to those properties which are morally relevant, we can still pick out determinate claimants who will be legitimately aggrieved if we cause them needlessly to suffer. Our obligations are linked to future people who are claimants, since it is for their sakes-- that is, out of respect for their interests-- that we accept the obligations implied by our minimal principle. Suffering is bad for those who experience it, and the justification for our minimal moral principle must refer to those whose interests (in this case) are protected by it. It is not for the sake of
currently existing persons that we should avoid needlessly causing future people to suffer, but for the sake of those who are thereby provided normative protection from suffering. Such linked obligations, based on the value of the person to whom they are linked, provide a basis for the claims which those particular, identifiable individuals have against us. Such valid claims constitute rights.

But what sorts of rights can future persons have? Some rights, for example, those based on reciprocity, specific contracts, or promises, cannot arise unless people can actually interact. With future people, we noted, reciprocity is impossible. While we can contract with one another in ways that will benefit future people, we cannot make direct contracts with members of future generations, since they are not present to agree to those contracts. Similarly, we may promises one another that we will provide for the needs of the future, but we cannot make promises to persons who don't yet exist.

But not all valid claims are based on reciprocity or direct interaction. No plausible theory of rights can claim, for example, that people would be at liberty, morally speaking, to devour those who are helpless to protect themselves if only there were no contracts or promises which would be violated. As persons, we have a basic, and quite general right which must come prior to contracts and promises, and which is a precondition of their validity: the right against others that they take our interests into account, and give them their due weight in the context of any decision in which we have a morally significant stake. This right is violated whenever others inexcusably act without considering our interests and their moral significance. While
my interests may not determine the outcome of a choice for which they are morally significant, I have been wronged if they were not even taken into account.

This very general right is fundamental, and provides a basis for some contractual rights and rights based on promises. Unless the parties to a contract recognize one another as persons, unless the promiser recognizes the person to whom the promise is made as a being to whom promise-based obligations may be incurred and owed, a promise will have no weight. Promises made to a stone create no obligations, since such inanimate objects don’t have moral standing in the same way that people do. But promises made to a person do create obligations, because the interests of the promisee that her promises should be honored are morally significant.

While members of future generations may not have any special rights against members of the current generation, they do have this basic, general right: *Future people have a right against present persons that their interests must be taken into account, and given their due weight in our decision-making processes.* This right is active, and provides a normative constraint on the actions of current persons whenever we make choices in which future persons have a morally significant stake. This right is also quite general, and requires some explication. For example, in order to avoid violating this right, we must determine the way in which the interests of future persons are morally significant, and the proper weight such interests should be given in contexts where they come in conflict with the interests of current persons.
3.12 Harms, Rights, and Intergenerational Comparisons

At this point, we have conclusive arguments against the *no obligation thesis* and the *no rights thesis*. The acceptance of even the most minimal and uncontroversial moral principles implies obligation to future persons, and because these obligations are linked to identifiable individuals who have claims, we may say that these obligations are based on the rights of future persons. This completes the argument concerning harms to future persons: even in contexts in which the non-identity problem is supposed to arise, our actions and choices can cause harms to future persons, and can violate their rights.

But the argument is not complete. While we have shown that future persons have general, basic rights against current persons, we still need to establish just how extensive those rights are. This requires, among other things, a theory of how much weight the interests of future persons should be given when they come in conflict with those of current people. In order to establish the specific content and weight of our obligations to future persons, we need to develop a more complete theory of intergenerational justice. The following chapter will consider the first part of this question. It will seek to answer the question "What weight should be given to the interests of future persons, relative to the weight given to the interests of currently existing persons?"
Chapter 4

THE WEIGHT OF THE FUTURE

4.1 Weighing Future Interests
4.2 Difficulties in Making Intergenerational Comparisons
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4.4 Some Distinctions
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4.1 Weighing Future Interests

The problem is this: for any decision which will have time distributed
effects, we need a criterion for weighing the interests of future people against those
of present people. In such contexts, conflicts of interest may arise. For example, it
might be necessary for members of the current generation to make sacrifices in order
adequately to provide for the needs of future persons. We, members of the present
generation, are the ones in the position to make these decisions, and our interests are
among those at stake. Because of this, we may be prone to make these decisions in a
way that favors the present over the future. An adequate theory of how such
decisions should be made must not merely incorporate this bias for the present unless
there are adequate justifying reasons. The question we need to ask is, is there moral
justification for counting future values, future costs, and the achievement of future benefits less heavily than we count values, costs and benefits we could otherwise gain sooner? May we give the interests of people who don’t yet exist less weight, among the determinants of our decision, than the interests of those who currently exist?

From the literature discussing this question, it seems clear that all are agreed that the answer is obvious. Unfortunately, there is very little agreement on what the obvious answer is. Most economists and policy analysts argue that we should adopt a policy of discounting benefits that will accrue in the future in favor of those that can be gained at present. Many writers implicitly suppose that the problem of intergenerational justice would be solved if only we could find the proper rate of discount. Others, including Henry Sidgwick, Derek Parfit and Robert Goodin, argue that such discounting is unjustified and immoral, because, as they believe, it fails to give proper consideration to the future people who stand to lose out if discounting is adopted. Future people are, they argue, people, and they therefore deserve the same sort of consideration that other people deserve.

It often seems, however, that advocates on both sides of this debate have failed to appreciate the nature of the claims of their opponents. In this chapter, I will consider various arguments in favor of discounting benefits that will accrue in the future, and discounting the interests of future persons. Some of these arguments, I will claim, provide good reason for discounting of a certain sort in the context of social policy decision making. However, some of the standard economic arguments for discounting are often weak and provide no good reasons in favor of the practice. Further, there is no reason to believe, as most economists and policy makers assume,
that the same discount rate should apply in all decision contexts or to all policies and projects. There is similarly no reason to think that the discount rate should have a geometric form, as all economic models assume. Finally, there is no reason to believe that the problem of intergenerational justice could be solved by finding the proper rate of discount. I will also argue for a principle of temporal neutrality: the time at which a person lives (or the generation in which she lives) is not relevant from the moral point of view, or from the standpoint of the theory of justice. The interests of future persons, as full and actual persons, must be given no less concern, and no less weight in our decision making process, than the interests of current people. Some of the reasons we can provide for discounting the future are consistent with this view. Only those forms of discounting which are consistent with this view, I will argue, are justified. Thus, contrary to the view of Mueller60 and Baumol61, to name only two, determining the appropriate discount rate is not even the primary, much less the sole task for a satisfactory theory of intergenerational justice.

4.2 Difficulties in Making Intergenerational Comparisons

Discounting represents one proposal for making welfare comparisons between distant generations. But some have questioned whether it is even possible to weigh the interests of the future against those of the present. Some of the difficulties which have been raised are closely related to difficulties social scientists have in

61 Baumol (1968).
weighing the interests of present people against one another. In this vein, Lionel Robbins criticized the welfare economics of Pigou and Marshall on the ground that their theories used utility theory inappropriately. Robbins argued that no sense could be made of earlier welfare economics without interpersonal comparability of utility scales, but such comparisons are impossible and unscientific. This argument finds even greater support in the context of future persons: if we can’t find a systematic way to compare the welfare of contemporaries, how can we hope to find a method which would allow us to compare the welfare of persons who are not contemporaries? All the difficulties that arise in trying to make interpersonal comparisons of utility arise with new force in the context of intergenerational comparisons. Worse, future generations aren’t here to study: we can’t compare the income of a distant generation to our own income, because we simply don’t know what will be available then, and we don’t know what their preferences will be. Further, the problem is not just that the interests of future people are indeterminate: their interests will be partly determined by their opportunities, and their opportunities are partly determined by the choices of the present generation. This creates special problems for any economic or political theory which measures the success of social institutions by their ability to satisfy the preferences of those who live under them. For example, if we destroy all the forests, then future people will not have the opportunity to develop a preference for hiking in the forest. But it would be absurd to conclude that their inability to hike doesn’t make them worse off, merely because they never had the opportunity to develop the taste for it. Still, it’s hard to see how
we can accommodate these difficulties in a theory of intergenerational distribution, or find a better, still usable criterion to make intergenerational comparisons.

However, it seems prematurely defeatist to reject distributional issues in the cavalier manner in which Robbins rejected traditional welfare economic theory. While we may not be able fully to account for the interpersonal utility comparisons we make, but this doesn’t undermine our confidence in them: somehow, in spite of the fact that formal utility functions are unique only to linear transformations, and therefore cannot support interpersonal comparisons, we confidently judge that it would be better to use public funds to distribute bread to the hungry than it would be to use the same funds to distribute theater tickets to the bored. 62 Similarly, we may judge that it would be worse to deny those who will exist a century from now adequate food and shelter than to deny present persons the luxury of using aerosol deodorant. Such comparisons are surely not meaningless, as some economists have claimed, but if we make them sensibly, we cannot be basing our judgment on anything resembling a Von Neumann-Morgenstern utility function. As I will argue, I believe that we can find justification for these comparisons, but that to do so we need to look beyond the restrictions of current methods for economic modeling.

It would be unconscionable to allow the difficulties associated with intergenerational comparisons to lead us to despair of any solution to these problems. For while our fate does not hang on the decisions future generations will make, their fate very definitely does depend on our decisions, and on how we take their interests

62 The example is from Cooter and Rappaport (1984).
into account in making them. We cannot, after all, avoid making choices that will have dramatic effects on future generations. Consider, for example, changes like those currently taking place in Eastern Europe: some have argued that if the only way to improve things for more distant generations is to impose heavy costs on more proximate generations. Are such decisions justified? In order to make such a choice, we need to make implicit intergenerational comparisons. Laurence Kotlikoff has suggested that individual intergenerational transfers play an important role in the accumulation of wealth. In order to judge whether such transfers are adequate to accommodate the interests of future generations, we need a theory telling us what they are owed. Our attitude toward future generations determines, in some cases, what will be available for them to consume, and what their lives will be like. While there clearly are great difficulties faced by any theory about how we should take into account the interests of future generations, it may be equally clear that there are better and worse ways to do so. In the next section, we will consider what has become the standard way in which economists have recommended that the interests of future generations should be weighed.

4.3 Discounting Explained

Most economic literature on intergenerational justice focuses on the problem of discounting. From the start, we need to fix just what discounting means

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in this context.

The rate at which future payoffs are discounted may have very serious effects on the way in which we evaluate policies and projects. For example, choosing a discount rate of 10%, as recommended by the U.S. Office of Management and Budget\textsuperscript{64} (OMB), would imply that it is preferable to save 100 lives or reap a benefit of 100 dollars today rather than to save 160 lives, or reap 160 dollars five years from now. As one writer notes, a 10% discount rate "produces a discount factor of .3855 after 10 years, .0085 after 50 years, and .00007256 after 100 years. In other words, benefits accruing a decade from now are worth just under two-fifths as much as comparable benefits accruing today, benefits accruing 50 years from now are worth [less than one-one-hundredth] as much as comparable benefits accruing today, and benefits accruing a century from now are worth less than one-ten-thousandth as much as comparable benefits accruing today.\textsuperscript{65}"

Slight changes in the rate of discount can drastically affect our evaluation of future consequences, and the range of rates that have been proposed is quite wide. At the 10% rate recommended by the OMB, discounted future benefits may seem tiny when compared to present costs. Lind notes that "the present value of $1,000 of benefits fifty years hence is worth $8.52 if discounted at 10 percent, 87.20 if discounted at 5 percent, and $371.53 if discounted at 2 percent.\textsuperscript{66}" And economists

\textsuperscript{64} U.S. Office of Management and Budget, (1972).

\textsuperscript{65} Robinson, (1990) p. 247.

have proposed rates ranging at least from 23 percent to zero. When discounting is applied to broad scale social policies, our choice of a discount rate may have a very significant influence on the nature of the world we leave behind. Discounting is applied to expected costs or harms as well as expected benefits. Thus in the view of some economists, with a 10% discount rate, we should be indifferent between a policy which will result in 39 deaths this year and an alternative which will cause 100 deaths in 10 years."

If the idea of discounting future consequences seems strange, advocates will remind us that people naturally attach less importance to future costs and benefits. Given a choice between gaining a benefit right now, or waiting to get a utility-equivalent package (adjusted for uncertainty, appreciation, and everything else except time) next year, most people will choose instant gratification over delayed. Or so it is claimed." The notion that we should be more concerned about present consequences, and less concerned about them as they recede further and further into the future dates back at least as far as the early utilitarians. In the fourth chapter of his *Principles of Morals and Legislation*, subtitled 'value of a lot of pleasure of pain, how to be measured,' Bentham lists 'propinquity and remoteness' in time as among the elements, or dimensions of utilitarian value, and distinguishes between

67 See *The Economist*, March 1991, p. 73.

68 One might wonder what could possibly provide evidence for such a claim. The notion of a 'utility-equivalent package,' if based on what a person would be willing to accept at a later date, would seem to include the idea of a discount rate.
remoteness in time and mere uncertainty." Later utilitarians, among them Henry Sidgwick, disputed this aspect of Bentham's theory, and many contemporary economists share Sidgwick's disapproval of discounting. Frank Ramsey dismissed discounting future consequences as "ethically indefensible," "...arising merely from the weakness of the imagination" and Harrod has argued that such discounting is merely "...a polite expression for rapacity and the conquest of reason by passion."

Many philosophers and environmentalists have argued, in a similar vein, that discounting at any rate violates the rights of future people, since it implies a diminished consideration of their interests. According to Goodin, discounting at a lower rate is no better than discounting at a higher rate, it merely disadvantages the further future rather than the more proximate future. Lower discount rates might also provide incentives for investment, but this might benefit no one, since, as Baumol argues, if could merely "encourage indiscriminately all sorts of investment, whether or not they are relevant." Unless current resources are invested in such a way that provides benefits which future generations will be able to enjoy, investment may be irrelevant from the moral point of view, and from the perspective of economic efficiency.

It is common among economists to try to avoid consideration of the

69 Bentham, (1789/1948) p. 29.
70 Ramsey, (1928) p. 543.
72 Baumol (1968) p. 801.
ethical questions raised by the practice of discounting. But as Talbot Page, a laudable exception to this rule, notes:

Two highly respected economists, Pigou and Ramsey, thought that the "telescopic faculty" which led people to discount future well being, was a form of moral weakness. Nonetheless, most economists seem to agree that discounting is the proper approach to problems of intertemporal distribution. Many would like to avoid the moral problem altogether by arguing that it is not their business to judge consumer preferences, but only to recommend the most effective ways of satisfying as many of these preferences as possible. Such acquiescence, of course, carries with it an implied moral judgment."

Many different arguments are given in defense of the practice of discounting: among the most common are first, the argument that the increasing uncertainty of future eventualities justifies us in placing a higher value on payoffs that will come sooner, and second, the argument (to be discussed as "the investment criterion") that discounting is rationally justified for those who wish to maximize the return on investment over time. Each of the arguments to be considered here provides an independent reason for discounting. While they are often represented as alternative criteria for discounting, to represent them as such is misleading. For example, if the arguments from uncertainty and the arguments from optimal investment are both acceptable, then we should discount for both, not for one or the other. 74 It often seems that advocates on both sides of this issue have failed to


74 While this observation might seem obvious, it is common for writers to present the various arguments as alternatives rather than independent criteria. See Page (1977), Parfit (1984), Robinton (1991), and Goodin (1982) to name only a few.
appreciate the nature of the claims of their opponents, and this has resulted in a situation in which the participants seem not to understand the subject of the debate. To avoid reflecting this confusion in this discussion, I will start by distinguishing a set of related but distinct questions related to the question of whether we are justified in discounting the value of future eventualities.

4.4 Some Distinctions

First, what is the currency of discount? The most common answer is that what is to be discounted is the value of whatever costs or benefits will accrue in the future. But this lumps the value of human beings with the things, like goods and money, which will be valued by those human beings. We might have quite different feelings about discounting the value of a monetary payoff to be gained in the future on the one hand, and discounting the value of the happiness or well-being to be achieved by future individuals. Further, this criterion lumps renewable resources like timber along with finite resources like oil, and lumps the value of consumption goods like kleenex alongside the value of environmental ‘goods’ like the Grand Canyon. In general, there are three candidates for the currency of discounting: 1) money, 2) non-monetary goods and resources, and 3) individual happiness and well-being. It will be important to divide the second category into two sets: those goods and resources which are renewable or substitutable, and those which are not. Once these distinctions have been made, we can raise the possibility that it may be
appropriate to discount different currencies at different rates. As we will see, it can be argued that they should be discounted differently.

Second, what justifies the practice of discounting the future? There are, once again, a number of alternatives. The alternatives will be discussed in more detail later, but it may be valuable to have a preliminary list: Some have claimed that discounting should be adopted because as individuals we prefer benefits which come early rather than those that come later. Alternately, it has been argued that the discount rate should reflect the rate at which present people actually care about the welfare of future people. We may, advocates of this suggestion propose, care less about people who will exist in the far further future than about those who exist in the more proximate future. Economists often see tradeoffs between present and future benefits in terms of investment opportunities: putting off a present benefit in favor of a future one amounts to investing that present benefit in the hope of a future return. On this account, discounting is justified on standard criteria used to measure the rationality of investment. Finally, we may be more uncertain about the likelihood of events which will take place in the distant future. Our uncertainty about whether future benefits will actually be realized may justify discounting them according to the diminished probability that they will.

The question of justification is not entirely distinct from the question of currency. As we will see, different arguments justifying the practice of discounting are appropriately associated with different discount currencies.

A third question which needs to be distinguished is 'at what rate should future values be discounted? This question is also closely related to the previous
ones, since different rates will be associated with the different grounds we may have for discounting in the first place. For example, uncertainty about future eventualities might justify a discount rate which followed a subjective probability function, based on the knowledge of present people concerning future events. If discounting is justified by the investment criterion recommended by many economists, then the rate of discount should reflect the opportunity cost of the future payoff. Since different currencies are associated with the different justificatory arguments for the practice of discounting, it may be appropriate to discount different currencies at different rates.

The fourth question is one which, as far as I know, has never been addressed seriously by participants on either side of the debate. What form should the discount function take over time? All formal economic models which include a discount rate blithely assume that the discount rate will simply be compounded over time to form a smooth, geometrically increasing function. This assumption simplifies the mathematics a great deal, but I will argue that it is typically unjustified even in the interest of simplifying calculations.

4.5 Some Innocuous Forms of Discounting

Richard DeGeorge claims that "The amount of consideration [present persons should give to future persons] should be proportional to the probability that they will exist..." We have already disposed of DeGeorge's argument that we cannot

have obligations to future persons because they are not here. But there is a different strain of argument implicit here. As noted earlier, we are often more uncertain concerning the effects of our actions and choices on future people than we are about the effects for current people. There are two reasons for this. First, in most cases we are simply better at predicting proximate events. Second, there is a chance that there just won't be any future people who may be affected by present choices. Some have argued that discounting is justified because of this increasing uncertainty.

However, 'discounting' of this sort is consistent with the principle that the time at which a person lives is irrelevant from the moral point of view. For we may discount proximate events at a rate proportional to the probability that they will occur, and when our choices may possibly affect current persons, we may take into account the probability that they will do so. 'Discounting' of this sort is simply part of making rational choices. Kant seems to have such considerations in mind when he writes that "...human nature is such that it cannot be indifferent even to the most remote epoch which may eventually affect our species, so long as this epoch can be expected with certainty." Sidgwick also recognizes uncertainty of this type as the only justified form of discounting, and explicitly claims that this is consistent with temporal neutrality:

...it may be asked, How far we are to consider the interests of posterity when they seem to conflict with whose of existing human beings? It seems, however, clear that the time at which a man [sic.] exists cannot affect the value of his happiness from a universal point of view; and that the interests of posterity must concern a Utilitarian as much as those of his contemporaries,

76 Kant, (1979) p. 50. Emphasis added.
except in so far as the effect of his actions on posterity- and even the existence of human beings to be affected- must necessarily be more uncertain."

Another argument in favor of discounting is also consistent with the principle of temporal neutrality: firm believers in technological progress may believe that future generations will surely be better off than the current generation, since they will have the benefit of our knowledge and our productive efforts. If so, then discounting of a kind can be justified on grounds of diminishing marginal utility of income. Beckerman writes:

...it may be accepted that the marginal utility of an extra dollar to a rich man will be less than its value to a poor man. Hence, it may be rational to discount the future on the assumption that economic growth will continue so that future societies will be much richer than those of today."

If we have good reason to believe that future generations will be much better off than the present generation, then we might be justified in making choices which would diminish their prosperity when doing so would make us better off. If we look only to utilitarian considerations, such choices should be expected to increase overall utility, since benefits are likely to mean more to those who are not as well off.

This criterion for discounting takes account only of utilitarian considerations. Such considerations may be overridden if they come in conflict with claims based on the rights of those whose interests we propose to discount. Still,

inasmuch as utilitarian considerations have moral significance, this criterion might be justified, provided that we have good reason to believe that future people will be better off than members of the present generation.

Only two decades ago, the assumption that things will continue to get better and better, and people will continue to be better off than their predecessors seemed uncontroversial to many economists and philosophers, and many seem to accept even now that we may simply assume that future people will be better off than we.⁷⁹ However, with the depletion of irreplaceable resources, and continuing environmental degradation, it no longer seems permissible merely to assume such a thing. Many based this assumption on confidence that market mechanisms would effectively protect the interests of future people; confidence which, I will argue in Chapter 6, may be misplaced. Moreover, it is clear that there are some choices available to the current generation which could insure that the future will not be better off than the present. The choice to make nuclear war is the most obvious example, but many now believe that many mundane choices concerning, for example, the use of freon in air conditioners, or our continued reliance on fossil fuels, may also, ultimately, result in a situation in which future generations are likely to be worse off than the present.

⁷⁹ To name only a few who either implicitly or explicitly make this assumption, see Rawls (1971), Nozick (1974), Gauthier (1986), Boadway and Bruce (1984), Beckerman (1974) and (1991), Baumol (1968) and Arrow (1973) among many others.
While the two criteria for discounting mentioned here do, under some circumstances, justify making decisions which may be worse for future people, they do not justify the practice of discounting as it is done by economists and policy analysts. For example, neither criterion justifies compounding the discount rate geometrically. In contexts in which discounting accommodates uncertainty, we may often be quite confident about the distant consequences of our current choices, and we are sometimes less confident about more proximate consequences. For example, when we cause a species to go extinct, or a resource to be exhausted, we can be quite confident that future people will not inherit a world in which that species, or that resource, can be enjoyed, studied, or exploited. In a similar vein, discounting done on grounds of diminishing marginal utility should not be geometrically compounded unless such compounding is consistent with projected welfare levels and utility scales of future people.

But even more importantly, for the purposes of the present argument, even if discounting could be justified on the ground that future persons will be better off than present, this would not provide an argument for discounting which would be inconsistent with the principle of temporal neutrality. When utilitarian considerations are the only morally relevant considerations, it doesn’t matter whether those who are better off live in the present generation, or some future generation. All that matters is the relative utility levels they enjoy.
4.6 Optimal Investment and the Standard Argument for Discounting

On the standard view, future benefits, and implicitly any benefits which will be enjoyed by future people, have a present value which can be more or less precisely measured using standard investment criteria. These criteria apply in any context in which we are deciding whether to save or preserve some benefit for the future, or to spend or exploit it now. To be efficient, the present value of any future payoff must be at least as great as the present cost required to achieve it. We should save or conserve for the future only if it is cost efficient to do so.

But the present cost of investment is measured by its opportunity cost, that is, the value we could achieve by putting our resources to use in other ways rather than investing them for the future. There are many opportunities available, so the desirability of any investment project must be considered relative to the returns on any alternative investment. In a competitive economy, the market rate of interest would reflect the rate of return available in the least remunerative investment project actually being undertaken." So future payoffs, and the value of resources conserved for the future, should be discounted at the market rate of interest. In this vein, Baumol notes that when saving for the future yields returns at a rate of 5% when the expected return on a corporate investment is 16%, it would be absurd to save instead of investing. "Society cannot come out ahead by taking resources that have been bringing in annual benefits amounting to 16 per cent of the resource values and

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transferring them to uses where they will yield only 5 per cent."

An example may be helpful. Suppose that, as analysts for the forest service, we need to decide whether the trees in a certain grove should be cut now, or saved as a resource for future people. For the sake of the example, assume that stable markets for wood exist as part of a larger stable market system. For the sake of the example, and the example alone, assume also that the only value trees have is their market value. We may agree that this assumption is ludicrous. However, it can be argued that other non-market values could potentially be represented in determining the present value of a resource. For the moment and only for the purpose of this example, we will grant this extremely dubious assumption.

Trees accumulate value as they grow, so if we cut them now, we stand to lose the chance to reap a larger payoff in the future. If the current market value of the wood in the grove is \( v_0 \), then the payoff we would get by waiting and cutting the trees later is a function of the present value \( v_0 \), and the growth rate \( g \): \( g v_0 \). Our alternative is to cut the grove now, and to tie the present payoff we receive in to the productivity of the market. The payoff we may receive from this choice is a function of \( v \), and the market rate of interest, \( i \) - the rate at which our investment in the market would grow in the meantime: \( iv_0 \). So the present value of the future payoff we would receive by cutting the grove later is measured as the payoff we would receive then, \( g v_0 \), minus the value of the alternative, \( iv_0 \). So the discounted present value of saving

81 Baumol (1968) p. 796. One may wonder what the term "society" refers to in this context.
the trees to cut them later is \((g v - iv)\). If \(g\) is greater than or equal to \(i\), then the discounted present value is non-negative, and we may save for the future. If \(g\) is less than \(i\), then we would lose, overall, by waiting to let future generations harvest the grove.

To maximize the overall profit we can gain from this investment, it might seem that we should maximize the sum the individual payoffs \(p\), through \(p_n\), received at each point in time \(t\):

\[
\sum p_t = p_1 + p_2 + p_3 + \ldots + p_n
\]

\(p_x = \text{payoff in period } x\)

The amount of each payoff \(p\), will reflect the amount of the initial investment it represents plus the interest it accrues at the growth rate \(g\).

But in order to achieve this maximization, at each point in time we discount the value of future payoffs at the market rate of interest \(i\). Thus the equation we use to maximize overall profit for the course of any finite period of time includes a discount factor which counts future payoffs less than present payoffs:

\[
\sum \frac{p_t}{(1+i)^n} = \frac{p_1}{(1+i)^0} + \frac{p_2}{(1+i)^1} + \frac{p_3}{(1+i)^2} + \ldots + \frac{p_n}{(1+i)^n}
\]

\(i = \text{market rate of interest}\)
Advocates of this form of discounting might add that this method for placing present value on future payoffs doesn't really leave the future any worse off than failure to discount. For if the market rate of interest is greater than the rate at which the value of our resource would increase on its own, then by investing in the market, we cause our initial endowment to grow at a faster rate than it would otherwise. As a result, such a policy will leave the future beneficiaries even better off than they would otherwise have been. In fact, it has even been suggested that failing to discount in this way would violate the rights of future generations, since it would leave them worse off than they would otherwise be. Talbot Page notes that individual firms operating in a competitive market have very good reason to discount future payoffs in this way. In fact, he notes, in an economy of fierce competition, firms which fail to discount future payoffs will be driven from the market altogether. As a society, the argument is extended, by discounting future payoffs at the rate at which overall social wealth increases, we similarly guarantee that those who ultimately reap those payoffs will be as well off as possible.

If payoffs are actually invested at the market rate of interest instead of being consumed, then there is a sense in which maximizing the above equation (4.1) does not involve discounting at all. For if payoffs are invested as they are received, then (4.1) reflects only part of the total payoff received. In addition, there is the payoff associated with the market investment, which can be represented as (4.3):

\[ (4.3) \quad p_1(1+i)^n + p_2(1+i)^{(n-1)} + \ldots + p_n(1+i)^{(n-n)} \]
The explanation for this is simple: if each payoff $p$, is invested at the market rate $i$, then it accrues interest until the last period. So the actual payoff received when future benefits are discounted at the market rate of interest and when payoffs are reinvested as they are acquired is not merely the amount represented by (4.2), it is that amount added to (4.3). For even a small difference between the rate of interest $i$ and the growth rate of the resource $g$, this can represent an enormous difference in the total payoff. By discounting at the market rate of interest then, we maximize overall productivity and overall profit.

What would the consequences be, then, if we failed to discount future benefits in this way? The result, economists will tell us, would be less overall social wealth. If wealth represents people's ability to get what they need and to satisfy their desires, then failing to discount would needlessly deprive people of benefits they would otherwise enjoy.

4.7 Reservations about the Investment Criterion

Under the conditions for which it was designed to apply, the investment criterion for discounting future benefits is unimpeachable. However, we may question whether it is appropriate for people positioned in our circumstances to adopt a discounting strategy of this sort. Two problems are especially salient: first, discounting in the manner described may have serious, undesirable intergenerational distributional effects. Assumptions which are standard in economic models, and
which seem reasonable under the circumstances, would lead us to conclude that discounting as described above is very likely to produce an undesirable intergenerational distribution. Second, some goods are not comparable in the way required by the above criterion. Robert Goodin calls these "non-tradable goods." 82

First we must consider the objection that discounting is not likely to produce a reasonable or just intergenerational distribution. For the purposes of this discussion, we will grant economists the strong assumption that all goods are substitutable, and that the value of any good or benefit can be expressed in monetary terms. It must be admitted that these are strong assumptions. However, my aim is to show that even if we grant economic theorists the assumptions implicit in their model, the conclusion at which they aim is unjustified.

As noted, discounting as represented above does not imply that we actually value future benefits less than present benefits. What it really shows is that we can increase overall benefit (and, if we like, the benefit in each period) by investing as much as we possibly can wherever it is likely to be most productive. But in managing any stream of payoffs like the ones we have been discussing, there is an alternative to investment: we may choose to consume the benefits received, or some portion of them, rather than reinvesting them at the market rate, to be enjoyed in the future. Our choice to whether consume or invest will depend on the expected utility to us of present consumption versus the expected utility to us of later benefits. The

82 Goodin (1982).
decisions we are considering here involve extremely long periods of time: the benefits to be enjoyed later will often be enjoyed much later, long after those now living have died. On the standard economic assumptions we have made, an individual’s utility function measures her total level of well being. Present consumption is a direct input to this utility function: consumption, as typically modeled, simply infuses well being into a person. Benefits enjoyed much later by different people are a very different thing. The degree to which such payoffs increase the utility of a present day decision maker is a function of the degree to which she altruistically cares about their welfare. On virtually all models which take such things into account, people care less for others than for themselves. This provides a strong motive to consume rather than reinvest the benefits acquired in each period.

If these benefits are consumed, then there is no particular reason to believe that they will benefit future people at all. Failure to discount, in some cases, would make it more likely that benefits would actually be enjoyed by future people rather than consumed before they come into existence. In this vein, there is a great difference between an untapped aluminum deposit and a stream of beer cans at the side of the road!83 And, as I will argue, intergenerational distribution matters. Many of the arguments which lead us to regard as morally significant the distribution of wealth, or resources, or primary goods within a society at a given time are also good reasons to regard the intertemporal distribution of these things as relevant from the

standpoint of justice. This obvious fact has been overlooked by virtually all discussions of economic equity and distributive justice. Distribution naturally has two dimensions: We may consider distribution within a society at a given time (synchronic, or intratemporal distribution) or over time (diachronic or intertemporal distribution). It is arbitrary to consider only one of them. This claim will be expanded in later chapters, but at this point it is important to note that the investment criterion for discounting provides no reason at all for discounting the welfare of future people.

But the investment criterion shows that saving for future generations may sometimes leave them in a worse position than they would otherwise be in. If we invest early payoffs in capital resources capable of producing goods for many generations to come, we may make future generations better off than they would have been had we chosen instead simply to conserve so that future people could use the resources now at our disposal. And the value of capital resources is limited not only by their productive capacity, but by their durability, and the durability of their products. Shoe factories rot and become obsolete, and the shoes they produce will not last forever. Investing in capital may benefit the more proximate future generations, but may represent no gains for more distant generations unless the goods in which we invest either endure through time, or have beneficial effects on the present which cause enduring beneficial changes. In general, we cannot assume that investment in the market, or in capital resources, is the best way to guarantee that future people will not be unjustifiably deprived.
In sum, discounting by the market criterion is a method for producing a benefit stream, or consumption stream which, it is hoped, will maximize overall profits. However, the consumption stream actually achieved is a function not only of the discount rate applied to future outcomes, but also of the rate at which payoffs are consumed rather than reinvested. If they are merely consumed, then discounting future benefits will leave the future worse off than otherwise, and does so only to increase current consumption. Nothing in the argument for discounting by the market rate supports the claim that it is morally permissible to make the future worse off when this benefits present people. In fact, one of the main attractions of this criterion is that under the conditions in which it appropriately applies, it enables us to guarantee that our descendants will be better off than they otherwise would be. When this is not achieved, we must have an independent justification for the intergenerational tradeoff implied by discounting future costs and benefits.

We have shown that under certain circumstances, discounting makes future people worse off than they would otherwise be, and thus constitutes a setback of their interests. Can we argue that such a tradeoff harms future people? If so, we would have a very strong argument against discounting under conditions when doing so will change the intergenerational distribution.

But nothing in our argument so far supports the claim that discounting harms future people. To support that claim, we need not only to show that the interests of future people are set back, but also that discounting which does so is wrongful and indefensible, and that it constitutes a violation of the rights of those
whose interests are set back. After all, it is sometimes morally permissible (even required) to make some people better off at the expense of others. To support the claim that discounting harms future people, we need a theory to tell us what sort of intergenerational tradeoffs are permissible, and which are not. We would need a theory of intergenerational distributive justice. The conception of intergenerational justice which I would like ultimately to defend would support the claim that some policies which affect the intergenerational distribution in this way are violations of the rights of future people. However, this will not show that discounting according to the investment criterion is unjustified, even in circumstances in which it is likely to set back the interests of future persons.

Robert Goodin notes a second objection to the investment criterion as a method for determining the rate of discount: some goods, argues Goodin, are 'non-tradable.' When we set a uniform discount rate for future consequences, we fail to accommodate the fact that different goods (and bads) have values that may not easily be compared in monetary terms. Goodin gives the following example: "It is one thing for the Criminal Injuries Compensation Board to decide, after the fact, to award a trooper’s widow £10,000 when her husband has been murdered in Ulster. It is quite another for the Army to use such calculations to decide ahead of time that it is cheaper to buy off the trooper’s widow than to buy him an armored vehicle which would save his life." According to the investment criterion, Goodin implies, the

way to measure the cost of this life is to find the present value of the 'compensation' the Board will owe if the trooper's life is lost. But it is one thing to say that this is the cost the Board will bear, and quite a different thing to say that this is the value of the trooper's life. The reason for this difference is that ex post compensation is not, in this case, full compensation. We could not, for example, expect the trooper's spouse to accept £10,000 in place of her husband ex ante. In fact, no amount of money may be full compensation in a case like this: the way in which people value one another may not be reflected by any possible monetary compensation scheme. The two goods may not be comparable. Discounting uniformly over future eventualities fails to distinguish, among goods or expected events, those which have value that can be expressed in dollars from those which do not.

Some advocates of this form of discounting have implicitly recognized Goodin's point, but have not, perhaps, seen the extent of its consequences. Baumol, for example, argues that it may not be appropriate to discount irreversible harms we might inflict on our environment:

If we poison our soil so that never again will it be the same, if we destroy the Grand Canyon and turn it into a hydroelectric plant, we give up assets which like Goldsmith's bold peasantry "...their country's pride, when once destroy'd can never be supplied." All the wealth and resources of future generations will not suffice to restore them."

Implicit here is the recognition of the fact that it is not always possible to place a price in dollars on the value of certain things, and that the value of different 'commodities' is not always comparable. The value of an irreplaceable resource, or

85 Baumol, (1968) p. 801.
an individual life cannot really be accurately expressed in monetary terms. Under certain circumstances, we may be forced to find the amount society is willing to pay to save a life, and this amount is clearly finite. We do this, for example, when we decide how much money to put into making our highways safe, by putting up guardrails, and when we decide how to structure our medical system. But to think that the value we find when we do this accurately captures the full value of a human life is simply to miss the point.

The way in which discounting future benefits misses the point when economists attempt to discount the value of a person at the market rate is not exactly the same as the way in which discounting fails to apply in the context of ‘resources’ like the Grand Canyon. In the context of valuing human life, the problem is that there simply is no monetary value which can accurately represent the value of a human being. While this may also be true with respect to natural systems like the Grand Canyon, there is another important problem as well. The Grand Canyon is not like a finite stock of resource, which will be used up as people enjoy its use. It is

87 Kant makes this point in the Foundations of the Metaphysics of Morals when he discusses the difference between things that have price, and things that have dignity. Things which have a price, he argues, can be replaced with another thing of equal value. But people, who possess dignity, have a value which cannot possibly be weighed in such terms. No quantity of mere money, Kant implies, is sufficient fully to represent the value of an individual.
possible for the Grand Canyon continually to be enjoyed without depletion, as long as it is used at a rate which permits the ecosystem to regenerate and recover from any damage caused by hikers and sight seers. In this sense, writes Talbot Page, "The Grand Canyon or wilderness areas (and Rembrandts too, for that matter) are capable of indefinitely generating value without depletion. They are like perpetual yield bonds which forever spin out interest without wearing out the principal." If current discounting of future benefits caused us, for example, to underestimate the value of preserving such a resource, and if, as a result, we allowed it to be destroyed, this would also represent a misapplication of the investment criterion for discounting.

However, it must be noted that the objections raised do not discredit discounting as done by the investment criterion. Provided that discounting is done in a way consistent with producing an acceptable consumption stream, and that it is not done in a way that inappropriately places a monetary price on things whose value cannot be fully captured in this way, it is appropriate to discount future payoffs in the way this criterion implies. The problems raised may restrict the scope of discounting, but they do not support the claim that such discounting is inappropriate. As noted above, however, nothing in the investment criterion implies that the interests of future people should receive less weight than the interests of current people. When the investment criterion is used correctly, that is, in the way in which it is most clearly justified, it does not leave future people any worse off.

4.8 Discounting Social Welfare

There is another context in economic theory in which discounting commonly appears. In discussions in welfare economics, it is common to adopt the following as an idealized representation of a social welfare function:

\[ \sum_{n} \frac{f(U_{n})}{(1+r)^{n}} = f(U_{1})/(1+r)^{1} + f(U_{2})/(1+r)^{2} + \ldots + f(U_{n})/(1+r)^{n} \ldots \]

where:
- \( n = (n_1, n_2, n_3, \ldots) \) = successive time periods
- \( t: 1 \rightarrow \infty \)
- \( N = (N_1, N_2, N_3, \ldots) = \) number of people existing in each period
- \( U_{nt} = \) Utility vector at \( t \) of the members of \( N \)
- \( r = \) discount rate

This equation, or one relevantly similar, appears in many texts on welfare economics and cost-benefit analysis. As Talbot Page notes,

'[This] function, or some variant of it, jumps from the page like Athena from Zeus' brow, fully grown. The analysis starts with it. In the usual case, it is left to the reader to puzzle out the assumptions underlying it, its interpretations, and properties.'

This function may appear almost identical to equation (4.2) in the previous section, and like the earlier equation, this includes a discount on future values. However, while (4.2) takes generic payoffs as the object to be maximized, the numerator of (4.4) takes a function which aggregates utilities, or levels of well

\[ \text{Page, (1977) p. 157. Page lists a set of well known articles and texts which use such a function on pp. 171-172.} \]
being as the object of maximization. Because of this, (4.4) has very different theoretical assumptions and implications from (4.2). These implications can be discovered by dissecting (4.4) to consider its components.

Typical discussions of social welfare assume without question a utilitarian value framework. Since most proposed social welfare functions take individual utilities as input, some political theorists simply ignore welfare economics, on the ground that it could only be interesting to utilitarians. This route, however, is too easy. Any reasonable normative social theory must give some significant weight to utilitarian considerations. If some recommended form of social organization would make everyone miserable, that is a significant objection we may raise against it. Similarly, if some form of social organization would eliminate poverty and misery, that would be a significant argument in favor of it.

Further, while social welfare functions generally take utility functions as input, there is some degree to which the term 'utility' can be taken as a stand-in for any general quantifiable value which makes a person's life go well. For example, on some conceptions of autonomy, individual autonomy may be a matter of degree—some people may be more autonomous than others. Those who adopt such conceptions of autonomy, and who regard autonomy as the fundamental value for human beings, may take an individual utility function to represent the degree to which a person possesses the value of autonomy. In general, it is often possible to let an individual utility function stand in for whatever it is that distributive justice should take as the appropriate object of distribution.90

Finally, even if utility functions are interpreted in the crudest hedonistic terms, the role they play in social welfare accounting may not reflect the same crude assumptions. Rawls' difference principle, for example may be given an interpretation as a prospective social welfare function. While utility values taken as input might seem to reflect utilitarian foundations, the contractarian procedure used to determine which distribution is most desirable is anything but utilitarian.

This must be taken as a very limited defense of the seemingly utilitarian assumptions behind social welfare economics. As many have noted, there are problems associated with the assumption that moral values can be expressed in utility functions. A more palatable assumption is that utility functions may be used to express values which are among those which have moral significance. We must keep these limitations in mind as we consider the interpretation of equation (4.4). In fact, (4.4) can be given two quite different interpretations: an intratemporal one (to be discussed in section 4.9 NS 4.10), and an intertemporal one (to be discussed in sections 4.9 and 4.11).

4.9 Discounting Social Welfare: The Intratemporal Interpretation

The intratemporal interpretation of a social welfare function like (4.4) takes as primary the interests the current generation. This interpretation starts from

what may simply be a fact of human psychology: we care more about those who are
closer to us, and less about those who are further away. Because of this, it is
supposed, people in general care less about those who will exist ten-thousand years
from now than they do about those who will exist one hundred years from now. To
the extent that members of the current generation care at all about the welfare of
future people, their motive is pure altruism. Altruism creates what economists call a
positive externality: as the prospective welfare of future people increases, this has the
effect of making current people who care about them happier, and thus better off.
To see how this may work, consider a closer analysis of an individual utility
function, representing the way a person’s own welfare may be, in part, a function of
the welfare of others. For the moment, assume that a person’s welfare is a function
of her own consumption, $C$, and a function of the welfare levels of other persons,
including both present persons $U_p$, and future persons $U_f$. That is, agent a’s welfare
can be expressed as:

\[ W(a) = f(C_a, U_p, U_f) \]

As noted earlier, the number of presently existent persons is finite. So $U_p$
is a vector of numbers representing utility levels of everyone a cares about. Since
she cares more about some than about others, this vector is weighted to reflect the
different degrees of concern she has for different people. Let $\mu$ represent a vector of
weights representing the degree to which a cares about different present people. So a's utility is a function of her own consumption, $g(C_a)$, plus a weighted vector representing the welfare of other current people, $\mu U_p$, plus some function of the expected welfare of future people, $f(U_f)$:

\[
W(a) = g(C_a) + \mu U_p + f(U_f)
\]

Although the number of persons who exist at any given time must be finite, it is possible that the total number of future people is infinite, and as we mentioned earlier, our individual utility function should reflect the fact that people care less about those who will exist in the distant future than they do about those who live in the more proximate future. Let $\pi$ represent the rate at which a's concern for future people diminishes over time. A simple picture of a's utility function appears:

\[
W(a) = g(C_a) + \mu U_p + \sum [f(U_f)/(1+\pi)^n]
\]

$n$ = the number of each generation following $p$.

$n$: $1 \rightarrow \infty$

If all members of the current generation have similar properties, then, it is supposed, we can generalize (4.7) from the individual to the social level. This gives a social welfare function based on the 'utility' of the present generation, $U_o$.

In this function, $U$, includes expected utility levels for all those who don't yet exist, but will. As in (4.7), the discount rate $\pi$, reflects the rate at which current people care about future people. Usually economists who adopt such a function assume that we could settle on a value for $\pi$ as the result of an election, or poll, or some democratic process." Since discounting in this way takes the preferences of the present generation as the fundamental value to be maximized, and because the only weight given to the welfare of future people is a result of the altruistic preferences of the current generation, Page calls this interpretation "selfish altruism." Since such functions are used to measure the present value of economic policies and projects, we need to consider what arguments could be used to defend such a procedure, and to evaluate them.

The second part of this function is the significant part:

\[
(4.8) \quad f(U_0) = g(C_0) + \sum [f(U_t)/(1+\pi)^n]
\]


This represents the way in which the utilities of future people contribute to the overall good of present members of society. This function takes as inputs numbers representing the level of well being of each person who will live, but doesn't yet, and turns them into a single number. However, this presents certain mathematical problems.

To see why this is so, consider the population of the future. If we assume, for simplicity, that people come into the world a generation at a time, and, like may flies, all die before the following generation comes into existence, then we can represent future people in terms of successions of generations: 

\((G_1, G_2, G_3, \ldots)\). While this assumption may seem quite absurd, the method should still give us a way to discuss the nature of the function, and no special problems are introduced. It also provides an interpretation of (4.9):

\[
\frac{1}{(1+\pi)^n} = f(G_1)/(1+\pi)^1 + f(G_2)/(1+\pi)^2 + f(G_3)/(1+\pi)^3 + \ldots
\]

A series sums to a finite value only if its members decrease geometrically. There is no reason to think that the series \([f(G_1), f(G_2), f(G_3), \ldots]\) will itself decrease geometrically. However, unless \([f(G_1), f(G_2), f(G_3), \ldots] \text{ increases geometrically to compensate}, the series represented in (4.10) will decrease geometrically whenever \(\pi > 0\). It may not be strictly impossible for \([f(G_1), f(G_2), f(G_3), \ldots, f(G_n), \ldots]\) to increase geometrically. This would
depend on the welfare levels of future persons, and also on the function $f$ used to aggregate these welfares. Reflection will show, however, that it is extravagantly unlikely that this series will increase geometrically. If, as we should expect, it does not, then to make sense of this social welfare function in a way that makes it both computationally possible and nontrivial, we must assume that the discount rate $\pi$ is greater than zero.

While the number of generations may not be finite, each generation has a finite number of members. So we can represent the inputs for (4.10) as a rough matrix, with columns of finite height, which may or may not be equal in height. Each element of this matrix represents the utility level of some person, indexed by generation, and by number within that generation, so that $U_n$ represents the utility level of the 3rd person in the 6th generation.

$$
\begin{array}{cccc}
U_{11} & U_{12} & U_{13} & \cdots & U_{1n} \\
U_{21} & U_{22} & U_{23} & \cdots & U_{2n} \\
U_{31} & U_{32} & U_{33} & \cdots & U_{3n} \\
\vdots & \vdots & \vdots & \ddots & \vdots \\
U_{a1} & U_{b2} & U_{c3} & \cdots & U_{5n} \\
\end{array}
$$

Here $a$ is the number of persons in the first generation, $b$ the number of persons in the second generation, and so on. In (4.10), the function $f$ takes as input an aggregation of the columns of this matrix: the elements of the vector $(G_1, G_2, G_3, \ldots, G_n, \ldots)$ where
How does the function ‘f’ evaluate generations? How does it turn individual utility levels into a single number? There are innumerable possibilities, but I will mention only three here.

First, if the utilities are somehow cardinal and additive, then the function \( f \) may simply add utilities together:

\[
\begin{align*}
\text{f}(G_1) &= U_{11} + U_{21} + U_{31} + \ldots + U_a1 \\
\text{f}(G_2) &= U_{12} + U_{22} + U_{32} + \ldots + U_b2 \\
\text{f}(G_3) &= U_{13} + U_{23} + U_{33} + \ldots + U_c3 \\
& \quad \vdots \\
\text{f}(G_n) &= U_{1n} + U_{2n} + U_{3n} + \ldots + U_{\delta n} \\
& \quad \vdots
\end{align*}
\]

This represents one version of what Parfit calls the Total Utilitarian View, or the Total View, for short. The literature on population policy and future generations abounds with discussions objecting to this view. If we choose our social policies well, it is likely that the lives of future people go well, so their utility levels will be positive. The total view entails that greater numbers of people are desirable as long as the additional people have positive levels of well being. In the context of
population policy, it implies that we should choose to increase the population size until we reach the point at which the misery caused by population pressures is so great that they outweigh the utility gain caused by adding more people. For this reason, Page calls this the "Calcutta" solution. Even more paradoxically, Parfit points out that the Total View implies that for any finite population of (very) happy persons, there is some possible population of persons whose lives are barely worth living which is preferable, because the sum total of utility is greater. Jan Narveson writes that the total view treats the production of happiness like the production of milk: the more cows you have, the more milk you get, and the more people you have, the more happiness you get. As Peter Singer writes, "This, surely, is not the version of utilitarianism that makes the utilitarian view appear so strikingly attractive, so self evidently correct, to its supporters."

The simplest alternative, the Average View, has also been the object of discussion and disparagement. According to the Average View, we should add utilities, as before, but then divide through by the number of people in each generation:

95 Singer (1976).
96 Page (1977) p. 158.
98 Cited in Singer (1976), p. 84.
99 Singer, (1976), p. 84.
(4.14) \[ f(G_1) = \frac{U_{11} + U_{21} + U_{31} + \ldots + U_{a1}}{a} \]
\[ f(G_2) = \frac{U_{12} + U_{22} + U_{32} + \ldots + U_{b2}}{b} \]
\[ f(G_3) = \frac{U_{13} + U_{23} + U_{33} + \ldots + U_{c3}}{c} \]
\[ \vdots \]
\[ f(G_n) = \frac{U_{1n} + U_{2n} + U_{3n} + \ldots + U_{dn}}{\delta} \]

We may note that one easy way to maximize average utility at a given time would be painlessly to kill all but the most blissful people around. Other objections to average utilitarianism are given by Parfit (1984).

While most interpretations of social choice functions like (4.10) assume either the Total View or the Average View, there is no particular reason for a social choice function to be utilitarian. We could, for example, interpret the function \( f \) in terms of a Rawlsian maximin requirement. One possible way to do this is as follows:

(4.15) \[ f(G_1) = \min (U_{11}, U_{21}, U_{31}, \ldots, U_{a1}) \]
\[ f(G_2) = \min (U_{12}, U_{22}, U_{32}, \ldots, U_{b2}) \]
\[ f(G_3) = \min (U_{13}, U_{23}, U_{33}, \ldots, U_{c3}) \]
\[ \vdots \]
\[ f(G_n) = \min (U_{1n}, U_{2n}, U_{3n}, \ldots, U_{dn}) \]
\[ \vdots \]

Maximization of (4.10) would then involve maximizing the discounted sum of minimum values. Overall, a SWF of this form would prescribe maximizing the well being of the worst off members of any generation, but with more weight given to proximate generations. It might seem odd to apply the difference principle only within a generation, rather than applying it generally across persons, regardless
of the generation in which they happen to exist. However, Rawls himself recommends that the difference principle should be applied only within a generation, or within a society at a given time. In this sense, this interpretation of the difference principle may to some extent be consistent with Rawls' intention.100

What is characteristic of the intratemporal interpretation of the discounted social welfare function, however, is not the method used to aggregate welfare levels, but the method used to determine the value of the discount rate \( \pi \). On the interpretation we are considering, \( \pi \) is supposed to reflect the rate at which current people's concern for future people diminishes as those future people recede into the further distant future. In this context, choice between a Total Utilitarian, Average Utilitarian, or Rawlsian version of the aggregation function \( f \) would not be based on principles of fairness or justice. Rather it should represent the way in which actual people's concern for future people manifests itself psychologically, just as the discount rate \( \pi \) reflects the way in which that concern diminishes as distance in time increases.

100 In fact, Rawls (1971) recommends that the difference principle be applied to accommodate justice within a single generation, and proposes that the problem of intergenerational justice will be solved by providing a theory of savings for future generations. But the savings rate is merely the other side of the discount rate: according to the investment criterion, we should save up to the point where returns from savings, adjusted for the market rate of interest, equal returns from current consumption. But as noted earlier, the investment criterion cannot provide an adequate account of intergenerational justice.
4.10 Objections to the Intratemporal Interpretation

The view we have been considering may seem strange to some, but it is probably the most common and most popular interpretation of the intertemporal social choice function. For example, it seems implicit in Sen, and in Heal & Dasgupta's ground-breaking work on intertemporal efficiency. In more popular literature, The Economist recently cited with approval the idea that the social discount rate should be determined by democratic means-- a proposal which implicitly recommends this intratemporal interpretation of the social choice function. The author notes with approval that David Pearce of University College in London has been conducting research to determine the discount rate \( \pi \) as a function of the preferences of current people.

What reasons have been marshalled in favor of the intratemporal interpretation of the discounted social welfare function? First, it makes the mathematics possible. The summation in (4.10) will be finite only if the series to be summed converges, and the series converges only if the welfare of more distant generations is discounted. Economists will remind us that this is not an arbitrary reason in favor of discounting: we can't properly think about intergenerational justice.

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103 The Economist, (1991) p. 73.
unless there is some model capable of describing our thought process. Second, discounting future eventualities seems to be a real psychological phenomenon. People really do seem to discount payoffs that will be achieved later, and they value benefits (and disvalue costs) to more proximate generations at a higher rate than those to more distant generations. Because of this, if we could find a discounted social choice function which accurately reflected current preferences, it could be the object of a democratic election: people could be expected to vote to discount future eventualities as prescribed by such a function, on the assumption that social policies would be made in accordance with it.

However, it should be clear that discounting of this sort is radically different from discounting by the investment criterion. The arguments offered in defense of the investment criterion are of no help in this context, and there is no reason to think that the discount rate $\pi$ appropriate for equation (4.10) will equal the market rate of interest, though this value is often recommended as the social discount rate. One reason for this is that in this case what is being discounted is individual lives and welfare, and these were taken as paradigms of non-tradable goods. The other, more obvious reason, is that we have no ground for believing that the market rate of interest reflects the rate at which current people care about the welfare of future people. It might, but if it did, it would simply be a coincidence.

The observation that in general, people value present payoffs at a higher rate than future payoffs similarly offers slender support for the intratemporal interpretation of the social choice function. If, as Pigou\textsuperscript{104} and Ramsey\textsuperscript{105} argued, this

\textsuperscript{104} Pigou (1932).
\textsuperscript{105} Ramsey (1930).
psychological fact merely reflects irrational ‘telescopic reasoning,’ then to include it into a social choice function would merely institutionalize myopia. Perhaps, then, it is the democratic element of this method that is taken to justify this interpretation of the social welfare function? After all, it is appropriate to respect the results of a democratic process, since they are supposed to reflect, to some degree at least, the values and preferences of those who vote.\footnote{Page (1977), 162, 172.}

But there is a very real sense in which such a choice would be radically undemocratic. For the innumerable members of future generations, whose lives and livelihoods are at stake in such a democratic decision, cannot possibly vote. And there is a conflict of interest between current people, who would be able to vote on a value for $\pi$ in such a context, and future people whose interests could not be reflected in such an election. Adoption of the discounting criterion we have been considering implies that the livelihood of future people will be left to the altruistic preferences of current people. Since altruism is often weak, and is especially weak with respect to

\footnote{Ramsey (1928).}

\footnote{Arrow’s theorem shows that, under certain circumstances, there can be no social welfare function consistent with five postulates each of which seems to represent a minimum requirement. However, Page argues (or at least \textit{claims}) that when the decision rule is to be chosen over an infinite set, all five of Arrow’s postulates can be satisfied. See Page (1977), 162, 172.}
future persons who are necessarily strangers to us, the present generation, and whom we can never hope to meet, this might seem unfair.

Members of the current generation are likely to be biased toward the present in the context of choices in which present benefits to current people are balanced against future benefits to be enjoyed by future people. It is in the interest of the current generation to consume more, so if the discount rate were set by democratic choice, then current people could improve their situation by causing themselves to care less about future people. The inappropriateness of this method is clearest if we think in terms of intergenerational distribution schemes: it is as inappropriate to allow the discount rate to be set by the preferences of the current generation as it would be to allow the distribution of wealth within society to be determined by the preferences of the wealthiest members of society. It is not in the interest of those who currently have the most, to vote for a distribution scheme to distribute more widely, or more equally. Currently we, the present generation, have literally everything. Future generations may need some of what we have, but it is not in our interest to give it to them, and we might prefer not to do so. To the degree that we look out for our own interests, we would vote for a relatively high discount rate, and a correspondingly low rate of savings for future people. For this reason, Talbot Page calls such a proposal "dictatorship of the present," referring to Arrow's requirement that a social choice function not be dictatorial.
4.11 The Intertemporal Interpretation

Much of the analysis given for the intratemporal interpretation of the discounted social welfare function applies also to the intertemporal interpretation. In both cases, the function takes as input utility levels for those who live now or will live in future generations, and discounts the interests of those who live in the more distant future. However, on the intertemporal interpretation, the discount rate \( r \) does not represent the altruism of the present generation, or their degree of concern about the future. Rather it represents an individual's preference for her own personal welfare at different times.

The simplest way to conceive of this is to take the discount rate \( r \) to measure the rate at which actual people value payoffs to be received later in their lives. In this spirit, some economists\(^{107} \) have suggested that \( r \) should reflect the average individual rate of after-tax return to savings. The reasoning, apparently, is that this is the rate at which individuals save for their own futures, so it should also be the rate at which society saves for its future. This is not merely a version of the democratic argument for discounting, since there is no reason to believe that people will care as much about the welfare of future persons as they care about their own future welfare.

But simplicity is not enough to recommend this method. Such a proposal ignores the fact that social savings (and discounting) is the solution to a very different problem from the problem of individual savings. Individuals have finite lifespans,

\(^{107}\) see Boadway and Bruce (1984).
and their earnings vary greatly over the course of their lives. For example, college students often borrow money (what economists often refer to as 'negative saving') for tuition, on the assumption that their increased later earnings will allow them to pay off their loans. Borrowing involves redistributing burdens intertemporally: by borrowing money, I increase current 'consumption' at the expense of future consumption.

Because people's earnings change over the course of their lives, individual savings rates will also be radically different at different points. Further, individual savings rates reflect people's expectations concerning their later earning potential, and also their expected life-span. Saving for old age might be infinite for a person who plans never to die! In fact, a person who solves her individual saving problem optimally, and who maximizes individual benefit received from life income, would have an average savings rate of zero. Such a person might borrow when young, save in middle age, and spend savings when old. However, from the economic perspective, such a person would maximize utility by spending her last cent just before death. In fact, standard economic assumptions imply that if an individual could accurately predict the exact time of her death, her average savings rate would be zero. Some economists explain the fact that people don't actually do this by the fact that people can never be fully confident in predicting their deaths.

But more importantly, it would be economically naive to set the social savings rate at the average individual rate, because society, unlike the individuals who constitute it, may not have a finite life span. At least, we may hope, the life of
society is indefinitely long, and cannot be predicted even with as much accuracy as the degree to which people may predict their own deaths. The 'average' life-span for persons is fairly regular, while the average lifespan for human society (not for the individual communities, or civilizations, but human society in general) is yet to be determined.\textsuperscript{108}

A more plausible version of the intertemporal interpretation has been offered by Dennis Mueller\textsuperscript{109}, who suggests that the discount rate should constitute the intertemporal aspect of the theory of justice. Mueller, following Rawls\textsuperscript{110} and Harsanyi\textsuperscript{111}, suggests that the proper discount rate should reflect the preferences of an ideally impartial agent from an initial position of uncertainty. That is, the just social rate of discount should reflect the choice of a person who doesn't know which generation she will belong to, and who wishes to maximize her prospects under conditions of uncertainty. On this model, the welfare of future people is not left to

\textsuperscript{108} Indeed, to speak of an 'average' lifespan is somewhat misleading in such a context: the social welfare function is supposed to apply to all payoffs or costs, regardless of which generation receives them. It is not designed to be applied to an individual civilization, but to the whole of human society, until the species dies out, or (more likely) extinguishes itself.

\textsuperscript{109} Mueller (1974).

\textsuperscript{110} Rawls, (1971).

\textsuperscript{111} Harsanyi, (1955).
the charity or altruism of the current generation. Mueller's suggestion eliminates the
dictatorship of the present, by making the interests of future people a direct input in
the social choice function. It has the further advantage of making the welfare of
future people a matter of fairness and intergenerational equity. According to
Mueller, this model makes the choice of a social discount rate the intergenerational
aspect of the theory of justice. For the case involving only two periods or two
generations, Mueller's model can be given a graphic presentation: 112

Figure 4.1
The axes $C_1$ and $C_2$ represent the amount of consumption available in generation one and two respectively. $FF$ is a production possibility function: that is, points on $FF$ represent different possible distributions of consumption between the two generations. While distribution for 3 or more generations cannot easily be represented graphically, the mathematical model is similar.

The question is, would such an agent choose to discount social welfare? Mueller argues that the answer depends on the nature of the utility function we impute to the chooser, and considers several alternatives.

For example, a risk neutral individual would be indifferent between present and future consumption. For such a person, present and future consumption are perfect substitutes, so the indifference curves (nn) will be straight lines making 45 degree angles with the axes. This implies that the agent would be indifferent between a consumption level of $n$ for generation b and zero for generation a, and a consumption level of $.5n$ for each. It is not likely that an initial position chooser would be indifferent between a) a 50% chance of starvation and a 50% chance of great wealth and b) a 100% chance of moderate wealth. It is still less plausible to imagine that principles of distributive justice should be indifferent between intergenerational equity and an intergenerational distribution of maximal inequity.

More plausibly, if the agent has standard Von Neumann-Morgenstern risk aversion, then the indifference curves (aa) will be convex with respect to the origin, making the consumption of present and future generations complementary goods. That is, a risk averse chooser will be willing to trade off one generation's
consumption for another's, but generally prefers to increase the consumption of the less-well-off generation.

A chooser who uses maximin reasoning, or adopts Rawls' difference principle, would be represented as making present and future consumption perfect complements. The indifference curves (mm) of such an agent would be right angles meeting on the 45 degree line, representing a lexicographic preference in favor of whichever generation is worse off.

If Mueller's model is accepted, all that remains, for a theory of intergenerational justice, is to determine what sort of utility function should be used to reflect the preferences of an initial position chooser. Justice will be reflected in whatever discount rate, if any, an ideal chooser would pick. Mueller argues that a risk averse agent would choose a positive discount rate on future consumption provided that the economy is productive. Productivity is reflected in the asymmetry of FF: it 'bulges out' so that the area under FF and above the 45 degree line is greater than the area under FF and below the 45 degree line. But this is not social welfare discounting, but discounting reflecting the investment criterion. Under such circumstances, it is the productivity of the economy, not the decreased importance of the welfare of future people, which dictates the discount rate. Such a choice reflects the diminishing marginal utility of wealth to future people who, by assumptions reflected in the shape of the production function, will be better off than present people anyway. This is quite different from discounting welfare, and as noted earlier, discounting of this sort is consistent with the principle of temporal neutrality. Discounting of that sort is not relevant to the social welfare function, since it places
no particular significance on the *time* at which benefits are received, nor which
generation receives the benefits, but only the relative welfares of those who might,
prospectively, enjoy them. For example, this argument provides no reason for
choosing a positive value for $\pi$ in equation (4.4).

Given an equal probability of existing in either generation, there is no
reason why an agent in the initial position described by Mueller should choose a
positive discount rate. There is nothing in the description of the model which
distinguishes later generations as ‘later’ and earlier ones as ‘earlier,’ so any
distinction made between the two must be based on some criterion other than time. It
is as likely, on this model, that an agent would choose a *negative* discount rate as a
positive rate, since all that matters is the relative productivity of the economy in the
different periods. Since this is so, such an agent would either choose not to discount
at all, or would choose to discount for reasons which are compatible with the
principle of temporal neutrality. But there is another problem with Mueller’s model,
one which will become significant as we develop an account of the way in which
distributive principles should apply across generations. As we will see, in spite of
the fact that Mueller’s model is consistent with the principle of temporal neutrality,
the way in which it is constructed it implies that time *is* morally significant.

Any theory of distribution must answer at least three questions: First,
there is the question of currency: what is it that principles of distributive justice
should distribute? Second, what pattern of distribution, if any, is required by
justice? And finally, how are the individuals to whom we distribute individuated? In
most discussions of distributive justice, the last of these questions never arises. It is
simply assumed that distribution is measured with respect to *individual persons*. However, in the context of intergenerational justice, most writers assume without discussion or argument that patterns of distribution apply to *generations*, not to the individual persons who comprise them. However, generations are constituted by individuals, and it is only individual human beings who can be the objects of obligations or the beneficiaries of our choices. Defining the model for choice in terms of generations, as Mueller does, is as arbitrary from the moral point of view as defining the model in terms of gender or race. Unless we have an *argument* to the effect that intergenerational distribution should define patterns across generations rather than individuals, we may not simply assume it. We must conclude that the intertemporal interpretation of the discounted social welfare function cannot be justified by reference to an intertemporal choice from an initial position.

Discounting welfare at a regularly compounded rate is not an alternative to the investment criterion, but an additional and unjustified sort of discounting. A social welfare function is supposed to reflect the degree to which a society is healthy and good. Including a discount factor which applies to individual welfare (or 'felicity' as Dasgupta identifies it) in such a function implies that a society may be optimally healthy and good even if the welfare of the coming generations, or the stock of goods and resources available to them steadily and avoidably diminishes toward zero. Noting this, Dasgupta writes: "If the felicity discount rate is positive (no matter how small), consumption in the long run tends to zero along the optimal path, even when it is feasible to avoid decay in consumption." It is one thing to

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accept a social choice function which, under tragic circumstances, would allow future welfare to diminish toward zero at a regular rate. It is quite another thing for a social welfare function to describe such a situation as optimal, even in circumstances in which an acceptable sustainable minimum could be maintained.

As noted earlier, adopting a discounted social choice function makes it possible to construct a precise-looking mathematical model of an ideal society. If we don't discount, it has been argued, then it is impossible in principle to form an intertemporal social choice function which can be maximized. Indeed, this problem is not trivial, and cannot be dismissed as merely a difficulty in formalization— if our views concerning intergenerational justice cannot be formalized, this should cause us to question whether they are coherent. But neither does this problem with formalization provide an adequate justification for the practice of discounting. "It is better," writes Amartya Sen, "to be vaguely right than precisely wrong."\textsuperscript{114} The discounted social choice function gives a very precise account of the problem of intertemporal choice. Since we have found no way to justify the precise-seeming solution it offers, and since that solution seems to have unacceptable consequences, we should avoid discounting social welfare.

4.12 A Decision Procedure for Discounting

If the discussion above is correct, then discounting future costs and

\textsuperscript{114} Sen (1987).
benefits is justified only under certain circumstances, and under those circumstances, discounting is consistent with a principle of temporal neutrality. If we are relatively certain what the effects on future generations of our current choices will be, the mere fact that they are distant from us in time in itself gives us no reason to discount their interests. To avoid discounting in ways that cannot be justified, we must keep in mind our reasons for discounting, and should discount only in ways that are consistent with those underlying justificatory reasons. First, as I have argued in section 4.5, discounting is sometimes justified when it reflects increasing uncertainty concerning the effects of our current choices on future benefits, or on the possibility that there will be future persons who will enjoy those benefits. Second, as argued in 5.2, it may sometimes be justified on grounds of decreasing marginal utility, but only in circumstances in which we can be quite sure that those whose interests are 'discounted' really will be better off than current people. Third, discounting according to the investment criterion may be justified when there is full comparability (or 'tradability') between the currency of the future payoff being discounted, and the currency of the alternate present payoff. We found no adequate argument to justify discounting social welfare on any of the various interpretations we considered.

Unjustified discounting of future costs and benefits may place undue burdens and costs on the future, and may deprive future people of benefits they would otherwise enjoy. Under such circumstances, inappropriate and unjustified discounting may harm future persons, by the criteria set out by Feinberg, and
discussed earlier: The choice to discount the value (or disvalue) of future eventualities is a choice, and is thus the kind of action which may harm others. When discounting is unjustified, it involves a faulty choice, in that it creates risks or imposes undesirable consequences on those whose interests are discounted. Such a choice may be indefensible, and may have an adverse effect on the interests of future people. Since the obligation not to discount the interests of future people are appropriately linked to determinate persons, whose interests and welfare are the underlying justification for the obligation not to discount inappropriately, unjustified discounting may be a violation of the rights of future people. And finally, the personal interests of those whose interests are discounted may as a result be in a worse condition than they would have been had policy makers not chosen inappropriately.

To avoid the risk of harming future people as a result of unjustified discounting, it would be valuable to have a decision procedure which would insure that future eventualities are evaluated appropriately. Unfortunately, if my discussion is correct, discounting in the right way is a much more complicated problem. Appropriate evaluation of future eventualities will typically depend on specific features of the choice at hand. Still, it is possible to provide a rough recipe for justified discounting:

First, consider which form or forms of discounting apply to the decision at hand. Is there uncertainty associated with the payoff to be discounted? Are those
who would receive that payoff in the future better off than those who would enjoy
the smaller present payoff, if current resources are not invested for the future? Is
there an alternate investment (for example the market) which would provide a greater
overall benefit (in a comparable currency)? Any of these features may justify
discounting of a sort, and since they are independent reasons, they may justify
discounting of several kinds simultaneously. For example if a future payoff is both
uncertain, and would be enjoyed by people who will be better off than we, we may
be justified in discounting for both uncertainty and diminishing marginal utility.\textsuperscript{115}

Second, for each, what is the currency of the payoff? Is the value of the
future payoff (or cost) full compensation for the present cost (or payoff) if
discounting is adopted, or is it only market compensation? Discounting is
unjustified, for example, if it balances a present monetary payoff against the value of
the lives of future individuals.\textsuperscript{116}

Third, what is the intertemporal form of the discount function? The form
of the discount factor will reflect different features of the choice situation depending
on the underlying justification. For example, when discounting for uncertainty, the

\textsuperscript{115} For example, consider a payoff with a real (non-discounted) value of \(v\), arriving
at time \(t\). If the uncertainty discount factor is \(u\) and the discount factor associated
with the increasing living standard of future persons is \(r\), then the present value of the
future payoff will be the product of \(u, r\), and \(v\).

\textsuperscript{116} Comparisons are not so easily made if money is a necessary means to the
preservation of present lives, however.
discount factor should reflect the degree of uncertainty, not merely a compounded rate of some fixed discount rate. Only when these three considerations have been examined are we in a position to evaluate future eventualities.

Literature on discounting abounds with horrific examples, intended to illustrate the terrible consequences that might arise if policy makers discount future benefits. Talbot Page cites an imaginary case in which current discounting practices lead to an unacceptable decision:

You are the director of the Office of Management and Budget. A proposal reaches your desk about a riskless project which will extract energy from the sun at an increased rate for 200 years. New production processes could use the energy to triple our GNP every year until 2180. Total project costs are negligible with one exception. The sun will explode [because of the project] and end life in 2180.

You reach for OMB circular A-94, THE word since 1969 regarding "Discount rates and procedures to be used in evaluating deferred costs and benefits." Sure enough, after discounting the benefits and costs, the project's net present value is phenomenal! Within weeks, our government heeds the unanimous advice of investment analysts and commences the project. You sleep with comfort at having lived in the twentieth century."'

Page presents this example as a general objection to the practice of discounting. While the scenario described may be unlikely, he notes, it is not theoretically 'silly.' But the problem arises only if discounting is done indiscriminately. To see this, consider how the procedure described above would

apply. In this context, we need to balance the prospective benefits over the next 200 years against the cost to those who will die in 2180. It should be obvious that merely discounting the future cost at the OMB standard of 10% per year is unjustified.

Under the circumstances described, do any of the legitimate arguments in favor of discounting apply? Clearly the investment criterion provides no support, nor does marginal utility argument.

The only argument in favor of discounting which applies here is the one from uncertainty: perhaps if the probability that the sun really will explode were low enough, we would be justified in discounting for our uncertainty. However, in this case the prospective 'cost,' the end of all life in the year 2180, is very weighty- if we count the moral significance of this cost as infinite, then even the discounted disvalue of the policy will be infinite.

But this is not an adequate response. After all, we do take risks that place the continuation of life in question. Some people believe that our willingness to generate power by burning coal, with the resultant pollution and strip-mining damage, provides a ready example of the fact that we are willing to take such risks, but more common examples are available. If we would be willing to risk an infinitesimal probability that life would be extinguished if doing so would enable us to achieve some great benefit, like solving the problem of poverty and destitution, then we cannot be placing an infinite disvalue on the potential cost.\textsuperscript{118} It would appear that even if we discount only in ways which seem justified, we may seriously

\textsuperscript{118} Page makes a similar argument: Page (1977) p. 250.
risk the well-being of future persons for the sake of current benefits.

However, it is not clear that this provides an objection to uncertainty discounting, even in the case Page cites. For under such circumstances, our decision should be guided by our beliefs concerning the probability that an undesirable (or even horrible) outcome may arise. Taking such information into account is simply a part of making a rational, well-considered decision. And in the case described, if the choice is made properly, it is likely (that is subjectively likely, from the perspective of the decision maker) that the risks we take will benefit people in the long run.

There is, finally, the issue of comparability between potential costs and benefits. In the example at hand, the costs are human lives, and the benefits may be less important. For example, the increased energy availability might simply be used by the proximate generation to heat their swimming pools and race their porches. Clearly it would be unjustified to risk the well-being of the more distant generations for trivial benefits. The case is less clear if the benefits to be enjoyed by more proximate generations have greater moral significance. If these benefits would feed the hungry, heal the sick, and comfort the miserable, then it is possible that costs and benefits are comparable.

4.13 Conclusion

In this chapter we have considered the different arguments in favor of discounting, and analyzed the practice of discounting as it is used and discussed by economists and social theorists. None of these arguments supports the claim that
future persons have diminished moral standing by virtue of the fact that they exist in the future, and none provide any justification for indiscriminately disregarding, or diminishing our regard, for those who don’t yet exist.

Early in this chapter, we considered a principle of temporal neutrality: the time at which a person exists is not relevant from the moral point of view. This principle implies that future persons have the same moral standing as current persons. We are now in a position to provide a positive argument in favor of this principle: In chapter two, I argued that future persons may be the object of current obligations, and in chapter three that future persons may have rights. In considering the arguments for discounting, we have found no argument to support the claim that obligations to future persons are less weighty than obligations to current persons. Without such an argument, we should accept that future harms are equally important, from the moral point of view, to present harms. Future persons, those actual persons who will exist in the future, but don’t yet exist, are persons, and in general, the same moral constraints which limit the risks we may impose on currently existing persons also govern the risks we may impose on future persons.

However, this argument in support of temporal neutrality does not provide an argument against all forms of discounting. Some forms of discounting discussed by economists and philosophers do not violate temporal neutrality. If the argument of this chapter is correct, only discounting of that sort is justifiable.
Chapter 5
MARKETS AND INTERGENERATIONAL OPTIMA

5.1 Introduction
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5.1 Introduction

The aim of the previous chapters has been to establish three central claims: First, even though future persons do not exist, moral relations may hold between present persons and members of distant generations. Specifically, present persons may have obligations to those who do not yet exist, but will exist in the arbitrarily distant future. Second, in spite of the fact that current choices may determine the very identities of those who will come to exist in the future, our obligations to future persons may be based on the rights of those who will actually exist at some point in the future. Specifically, future persons have a general right that their interests be given due weight in the context of any present-day decision in which they have a morally significant stake. Finally, the moral significance of future persons is not diminished by the fact that they exist in the future. Since the time at which a person exists is not significant from the moral point of view, future persons
merit the same degree and kind of concern merited by persons who presently exist.

The question arises, then, whether the institutions of society suffice to meet the claims of the future, or if there is any set of institutions which could both provide for the legitimate claims and needs of present persons while also giving future persons their due. A view which has been gaining increasing popularity among economists and political theorists claims that the ideal way to structure social institutions is to minimize their size as well as their influence on the free interaction of those who live under them. According to this libertarian strain of the classical liberal tradition in political theory, the function of government should be to keep the peace, protect the negative rights of citizens (including especially property rights), and to enforce those contracts that individuals freely make with one another. As long as these conditions are met, it is claimed, society will 'take care of itself.' In a recent book, David Schmidtz eloquently characterizes this view:

Society runs itself. As long as a system of property rights protects and gives meaning to people's right to be left in peace, individual initiative will produce the essential elements of human flourishing.\footnote{Schmidtz (1991) Chapter 1. The passage goes on to discuss exceptions to this rule produced by market failure.}

In general, there are two main lines of support for this claim. The first is basically utilitarian, and is based on several results of contemporary microeconomic theory. The first theorem of welfare economics shows that pareto optimal outcomes will arise from the free operation of a perfectly competitive market, in which contracts and property rights are protected, but in which the institutions of...
government play the minimal role assigned by libertarian theory. If, as many economists believe, pareto optima are the best index we have for utilitarian maximization of human well being, and if markets approach such optima as they approach the conditions of perfect competition, then this constitutes a utilitarian argument for libertarian institutions. The second line of argument in favor of the libertarian view is founded on a conception of personal autonomy. On this second view, social institutions violate individual rights when they limit people's individual liberty, or place restrictions on people's right to own and use their property as they see fit. The minimal libertarian state is a state which protects individuals' negative rights to liberty and property, but does not require participation in the production of public goods, or the provision of social benefits. Those who appeal to these arguments for support of a libertarian social order argue that public institutions more extensive than those described by the minimal state will violate the rights of those who live under them. Such institutions, it is argued, will exceed their authority by impermissibly infringing individual autonomy, and individual rights to private property. In arguing for the libertarian view in this way, it is crucial to show that there is an extremely strong connection between individual autonomy and the right to

120 The conditions of a perfectly competitive market involve other restrictions as well, such as the absence of externalities and public goods. For a full specification, see Varian, (1984), Kreps, (1990) and Bator (1968). Buchanan (1985) has a detailed discussion of the relation between markets, utilitarian consequences, and individual rights.
private property, such that any interference with the negative rights individuals have in the free use of their possessions, including the right to trade and contract with others, impermissibly interferes with autonomy.

The first of these lines of support is important not only to libertarians, but to anyone with an interest in economic markets and their ability to respond to the needs and valid claims of those who participate in them. Recent economists have been at pains to show that those institutions are best which provide maximal liberty to contract and trade, and which minimize bureaucracy and the influence of public institutions and legislative restriction of individual liberty. In many current economic discussions, the main aim is to show how the elimination of restrictions and trade barriers will promote the general welfare. In such discussions, the conditions of the perfectly competitive market are often presented as a kind of social ideal which we should endeavor to approximate in our real-world social institutions.

In general, we should be sympathetic with these efforts. If social problems can be solved without adding bureaucracy, and without restricting individual liberties, this clearly should be preferred over more intrusive and costly solutions. Whenever public goods (like roads and lighthouses) can be provided and public "bads" (like pollution) avoided without the imposition of liberty limiting legislation, other things being equal, such solutions should be preferred to more restrictive (and therefore more costly) solutions.

The benefits afforded by markets are also relevant from the perspective of non-libertarian theories of justice. Many economists argue that competitive
markets are best for literally everyone, including the worst off members of society. If this were true, it would not follow that libertarianism is the best theory of justice available, but it would follow that libertarian institutions and policies would be required by a theory like that of Rawls, who insists that justice requires that we structure the basic institutions of society so as to provide the greatest benefit for the worst off members. Reciprocity-based theories of justice, like those of Hobbes and Gauthier, hold that justice just is the result whenever self-interested agents freely contract with one another. The plausibility of such theories depends centrally on the ability of markets to produce outcomes which we can recognize as just.\[121\] In this chapter, I consider the ability of markets adequately to account for the claims of the future. If ideally free markets represent a social ideal, then it must be shown that they result in optimal distribution and investment of goods and resources over time as well as at individual points in time. I will argue that they do not. The results of current microeconomic theory are inappropriately atemporal. The proof of the first theorem of welfare economics shows only that ideal markets will produce 'optimal' results at a given time, but the conception of 'optimum' employed fails to meet the most minimal requirements for an acceptable intertemporal distribution. If successful, this argument undermines the libertarian account of justice by removing one of the strongest lines of support: unless

\[121\] See Buchanan (1990) for a discussion of the conception of justice as reciprocity as opposed to broader conceptions of liberal justice.
libertarian institutions can yield desirable outcomes over time as well as at a given
time, libertarians cannot claim that their view is supported by the findings of 
microeconomic theory. In addition, Hobbesian theorists like Gauthier will have 
more difficulty convincing us that ‘justice as reciprocity’ is a theory of justice if 
markets cannot yield desirable results over time.

However, if this argument succeeds, it does not necessarily follow that 
more restrictive non-libertarian institutions would be justified. It is possible that 
there are nonrestrictive institutions which could be designed to solve the problems 
outlined here,\textsuperscript{122} and it will remain to be shown that nonmarket solutions are likely to 
fare better than markets. However, unless such noncoercive solutions are 
discovered, the conclusions I will support undermine arguments for libertarian 
institutions which are based on the ability of markets to achieve optimal results, or 
utilitarian consequences.

5.2 Paradise

Economists often describe the conditions of perfect competition as a kind 
of economic paradise which can only be approximated in the relative purgatory of the 
real world. To begin this discussion, I will describe an idealized situation in which 
markets really will produce desirable consequences both over time and among those 
who live at a given point in time. Later, we will relax some of the conditions of this

\textsuperscript{122} For example, Schmidtz (1991) describes how conditionally binding contracts 
can, in some cases, provide a noncoercive solution to public goods problems.
economic paradise, to make it reflect more accurately the situation of the real world. Those who are suspicious of the assumptions of neoclassical microeconomic theory may be uncomfortable with the description which follows. However, my argument should be interesting even to such skeptics. What I hope to do is to grant advocates of the market those assumptions most propitious for the case they need to make. If markets do not achieve desirable results in these circumstances, then this provides the strongest argument against the claim that markets will have desirable consequences.

Consider an isolated two-person economy, in which the two participants, Adam and Eve, have mutually recognized property rights in two different kinds of productive resources: manna-producing fields and wood-producing forests. The initial endowment of each is a mixture including both field and forest, and each needs manna to eat and wood to keep warm during the cold Eden winters (we depart, somewhat, from the biblical account). However, neither Adam nor Eve is fully self sufficient. Each year, Adam's fields produce insufficient manna to meet his needs, while his forests produce more wood than he can use. Eve has a similar problem: her forests produce too little wood to keep her warm, while her fields produce more manna than she can eat. Clearly Adam and Eve can make a mutually advantageous deal: Adam can trade his surplus wood for Eve's surplus manna, and both will be better off as a result. Microeconomic theory predicts that they will trade wood for manna until they reach an allocation which is pareto optimal-- that is, an allocation from which neither can be made better off without cost to the other.

123 In my choice of participants in the economy of paradise, I follow Gauthier (1986) as well as the Bible.
It will be valuable to have a more formal model of the situation described. For the purposes of this model, we will assume that Adam and Eve have preferences which fit precisely the assumptions of current microeconomic theory. Specifically, the structure of their preferences over wood and manna can accurately be captured by indifference curves, representing the rate at which they are willing to trade one of these commodities for another. In the graph below, (figure 5.1) each point represents an allocation of manna and wood, and the curves which are convex with respect to the origin are Adam’s indifference curves. Adam is indifferent between allocations which lie on a single curve, but prefers allocations which lie on indifference curves which are ‘higher’ to those which are lower.

Figure 5.1
Eve’s preferences can be represented similarly. Combining the two, we can represent the entire two-person economy in the context of an edgeworth box:

**Figure 5.2**

The width of the box represents the entire amount of manna grown in the fields of Eden in one period (both Adam’s and Eve’s manna fields), while the height represents the amount of wood produced in the forests. Adam’s indifference curves are convex with respect to the origin A, while Eve’s indifference curves are concave with respect to A, convex with respect to E, the alternate corner. The initial allocation, that is, the point achieved before they trade with one another, is point x.

The disk-shaped area described by the indifference curves passing through point x is called the lens. From allocation x, both Eve and Adam prefer
allocations which lie within the lens. From x, such allocations would improve the situation of each, since any allocation within the lens leaves each on a higher indifference curve. Accordingly, if nothing prevents them from doing so, they will trade wood and manna, and both will benefit. At point c, their indifference curves are tangent to one another; there is no lens. Therefore, there is no way, from point c, to move one to a higher indifference curve without moving the other to a lower. Allocation c is therefore pareto optimal. The collection of points at which Adam and Eve's indifference curves are tangent, that is, the set of pareto optimal allocations, called the core of the economy, can be represented by a line AE (not necessarily a straight line), running from the south-west corner of the box to the north-east corner. The first theorem of welfare economics states that in conditions of perfect competition, participants in an economy will freely trade with one another until they reach an allocation in the core. Since 1) core allocations are pareto optimal, and since 2) without interpersonal comparisons of utility, pareto optima are the best index we have to utilitarian optima, and finally since 3) people will reach pareto optimal distributions if we just leave them alone, it seems to follow that if we want utilitarian consequences, we should just leave people alone. By minimizing barriers which would prohibit people from doing as they please with their resources, we make everyone better off.\textsuperscript{124}

\textsuperscript{124} While the discussion here involves only two participants, it is possible to prove that the same result will obtain for larger numbers of participants as well. For a proof that the first theorem applies generally to an arbitrarily large economy, see Varian (1984), Kreps (1990), or Bator (1968).
In the real world, we can determine to some extent the amount of productivity in the economy. To reflect this in our model, we may suppose that Adam and Eve have different productive options, and that their choices include not only the way in which they will trade with one another, but also the amount of labor they will put into their fields and forests. We can represent the choice of a production option as a choice of a point on a graph in which the two commodities are represented as axes.
Each point in the coordinate system represents a production option: an amount of wood and manna. The production possibility frontier (PPF) is a line representing the maximal productive choices available. From a point on the PPF, it is impossible for the economy to produce more manna without diminishing the production of wood, and vice versa. Since each point on or within the PPF represents a possible production rate for this economy in a given period, we can find an edgworth box for any point within the PPF. This represents 1) a production point, specifying the amount of manna and wood available for trade, 2) an initial allocation point, indicating the amount of manna and wood possessed by Adam, and the amount possessed by Eve, and 3) the set of efficient points within the lens from the initial allocation, toward which they will trade if nothing prevents them from doing so.

The production point for this period is not chosen by either Adam or Eve, rather it is a result of the production possibilities of each, and the individual choice each makes to produce so much manna and so much wood in this period. In deciding how much to produce, each will consider both 1) the amount of each commodity she will need (or want) in this period, and 2) the amount she can expect to get by trading with the other. As long as each chooses strategically, the economy will be optimally productive. For example, if it is more costly for Eve than for Adam to produce manna, and more costly for Adam than for Eve to produce wood, then Eve will produce more wood than she would prefer to consume, planning to trade her excess wood for Adam’s manna. Similarly, Adam will rationally choose to produce more manna. The economy will follow the law of comparative advantage."
The advantages of perfect competition are piling up: not only does a perfectly competitive market leave people free to trade with one another until they reach a pareto optimal allocation, it also provides participants with incentives to make production choices in a way that is mutually beneficial. Whoever has lower marginal production cost will choose to produce until marginal costs are equalized. This will result in a situation in which total production in the economy will reach a point on the PPF: a perfectly free economy of this sort will be maximally productive. Further, these facts about perfectly competitive markets can be known, it seems, a priori. Proofs of the results we have been discussing depend only on the way the agents are described. These results are true of any of the possible worlds in which the assumptions hold: the actual world, economists tell us, is simply a special case.

It is surprising that markets achieve optima in the way we have described here, and many have been justifiably impressed by these results of microeconomic theory. David Gauthier writes:

The great discovery of our society is, of course, the discovery of the social value of self-interest. The triumph of the science of economics was to demonstrate that under appropriate conditions, those of perfect competition in a free market, if each person acted purely self-interestedly, to maximize his own utilities, then the outcome would necessarily be optimal, the particular optimum depending solely on the initial positions of the persons in the market. Instead of repressing self-interest, our society has harnessed it. The benefits have been striking; critics of our society would argue that the costs have been overlooked.

125 For a clear explanation of this notion, see Mabry and Ulbrich (1989) p. 49-55.

It is easy to see why Gauthier is so impressed by markets, and by the results of free competitive interaction. Many economists consider the proof that perfect competition yields a pareto optimum to be the most important result contemporary economic theory has to offer.

5.3 Extending the Model Over Time: Paradise Lost?

But so far, our model describes the workings of an economy within a single production period. In extending the model over time, we will assume that production periods are discrete: each year, Adam and Eve choose what they will produce, and plan to trade with one another to achieve an optimal distribution. The economic activity of each period can be represented by a production point, an initial allocation, and a pareto optimal point which will result from free trade between Eve and Adam. Assume also that manna and wood rot between periods, so that neither can store supplies for the future. Over time, we can represent the economy in terms of a three-dimensional graph:

Figure 5.4
In each period, Eve and Adam choose their respective production levels, and trade to achieve an optimum. However, the series of optimal distributions they achieve can itself be evaluated. For example, it would be undesirable if the PPF shrank in each successive period. However, the terms used so far to describe the economy provide no ground for criticizing such steady economic decline. It is possible for the economy to reach a pareto optimal outcome in each period, and yet for the succession of optima achieved to represent an ever declining production rate, moving toward famine and want. The fact that competitive markets achieve pareto optimal distributions at every point in time seems irrelevant if the succession of optima achieved is itself obviously sub-optimal. The preliminary description of markets provides no reason to believe that the succession of pareto optimal distributions achieved by the market will not lead to intertemporal disaster.

But the conditions of paradise described above can be extended over time, but we must add assumptions and enrich our description of the situation if we are to extend it in this way. Specifically, we can enrich our description of the way in which they use the productive resources allocated to them: Initially, Eve and Adam have both fields and forests. Over time, we may suppose, they must reserve some manna from each year's harvest for the following year's planting, and must leave some wood in the forest for next year's harvest. However, suppose that they have another alternative. Suppose the resources they possess can produce at a higher rate, but that this increased production has a cost: increased production will degrade their resources, and in 80 years, they will be unable to produce anything more. Their choice, then, is whether to reap a relatively short term gain for long-term cost.
Should Eve choose a) to enjoy 80 years of increased prosperity with the costs described, or b) to endure a lower level of production and consumption which doesn't degrade her productive resources, and which can be sustained indefinitely? For simplicity, suppose that the choice in the first period will determine the pattern of production and consumption to be followed over the next 80 years. The social choice can be represented in terms of two production streams. 'A' represents the choice of a short term gain at long term loss, 'B' represents a sustainable production pattern:
Figure 5.5

A:

B:
Clearly B is preferable to A. The question then is, what conditions must we add to the description we have so far to make it individually rational for Adam and Eve to choose sustainability? I suggest that we must make at least two assumptions: first, Adam and Eve must have sufficiently long lifespans to ensure that they should expect to be around to endure the resultant hardships if they choose A. Second, they must not discount future payoffs at a sufficiently high rate that it would make it worthwhile for them to take the risk. If they are economically rational, then they will choose B just in case the long term costs are sufficiently severe that they outweigh the short term benefits.

Before the Fall, we are told, Adam and Eve were immortal.127 As students of Sidgwick, they would not discount their own utilities at different times in their lives, and we can build into our model certainty in their expectations concerning future consumption and production, given their choice (perhaps they get this information from God Herself). If we describe Adam and Eve in this way, then we can be sure that they would not be willing to accept the short term benefits of increased production. Proximate benefits would not be compensated by the cost of privation in the more distant future. Eve and Adam will prefer to choose a sustainable rate of consumption, even when they could reap short term benefits for long-term costs.

Obviously, people who make analogous choices in the real world are not immortal, and in many cases, they cannot justifiably expect to live long enough to

127 Ramsey (1928) assumes infinite-horizon maximizers. This is roughly equivalent to an assumption that the participants in the economy are immortal.
experience the consequences of their choice to reap a short term gain. In addition, real people probably do discount future eventualities, and it is likely that they do so in an undisciplined way. It is difficult to tell whether people discount felicity or merely uncertainty, but if the rate of individual discounting were sufficiently high, then it would make economic sense to choose depletion. In the economy of the real world, as in this richer description of paradise (or perhaps purgatory) future production possibilities are determined, in large measure, by production and consumption choices made at present. At any time, our ability to choose how much to produce in the following year is determined not only by our present decisions, but by our earlier decisions as well. This fact is important, because standard welfare economic theory shows only that optima will be achieved as a result of free exchange from an initial allocation point. It is more difficult to provide an account of optimal production, or the choices which would lead to it.

If Adam and Eve are not immortal (perhaps the economy described is the world economy after they are expelled from Eden), they may still have sufficient reason to choose not to deplete their resources. For example, if they exchange more than just wood and manna, they may have children who would benefit, and if they care enough about their children's welfare, they will have reason to avoid choosing production levels that would deplete their productive resources. But even if Adam and Eve do care about their children's welfare, this by itself may not be sufficient to guarantee that they will not choose to deplete. If they are economically rational, they
will consider the benefit they will gain from increased assurance that their children will have adequate resources, and they will weigh this benefit against the benefits they would enjoy if they chose to deplete. Only if their concern for their children’s welfare is sufficiently strong will they choose a sustainable pattern of consumption.

### 5.4 Lessons from Purgatory and Paradise

The first theorem of welfare economics tells us that perfectly competitive markets will achieve pareto optima. Pareto optima achieved by the market are better, in a sense, than the non-optimal initial allocations which precede them: when markets move from a non-optimal allocation to an optimum, some participants are made better off, and no one is made worse off. But one of the things we can learn from the fanciful example above is that this may not be enough to guarantee that markets will achieve a distribution which is desirable over time. Even if markets achieve pareto optima at every point in time, this is no reason to think that the succession of optima achieved will itself constitute a desirable intertemporal or intergenerational distribution. Without considering the effect of a given production point $p$ on the intertemporal production stream (specifically, the effect that the current choice of $p$ will have on future production possibilities), we cannot know whether $p$ is consistent with intertemporal sustainability, even in cases in which it would be possible to sustain a very plentiful production stream. The microeconomic account of the way in which perfect competition reaches an optimum does not, by itself, show that perfectly competitive markets will provide for the needs of the future. There has
been much discussion of market failure, and the problems associated with public goods and externalities. But even if these problems could be adequately solved, the intertemporal problems discussed here would remain to undermine the claim that market optima are desirable.

For this reason, it is deceptive to consider the allocations achieved by the market to be 'optimal.' It's not just that real markets won't achieve such optima, the problem is that the conception of optimum is simply too narrow to allow intertemporal and intergenerational comparisons. One clear minimal standard we should adopt for an acceptable intertemporal distribution is this: if it is possible to maintain production at a sustainable level, this must be preferred to production streams that tend toward zero. The conception of pareto optimum by itself gives us no reason to prefer sustainable consumption streams over steadily declining ones. For this reason, it cannot by itself be adequate as a normative criterion for evaluating the behavior of the economy.

However, there have been attempts to extend the microeconomic account of markets over time. Economists have been eager to show that competitive markets are likely to yield desirable intertemporal consequences as well as momentary optima. As we have seen, if the arguments in favor of free competitive markets are to carry any normative force, it is necessary to show this. For example, arguments for a policy of unimpeded economic freedom must show that adoption of this policy will not lead to gratuitous and unacceptable environmental damage, will not result in
unacceptably high rates of depletion of necessary resources, and so on. It might seem that such a discussion might involve a careful examination of our resource stock, the likelihood that we will discover efficient substitutes, and projections concerning the rate of increased energy efficiency due to technological advances. Such a discussion might be out of place in a philosophical analysis of economic theory. But surprisingly, a number of arguments in favor of the intertemporal effects of markets seem almost \textit{a priori}, and do not seem to depend on any empirical information concerning our resource stock. Theorists such as Harold Hotelling, Julian Simon, Wilfred Beckerman, and David Gauthier have argued that the terms of free interaction in the context of competitive markets will ensure that resources will not be used at excessively high rates, and that adequate provision will be left for the benefit of future generations.

In the remainder of this chapter, I consider three arguments for the claim that markets will produce desirable intertemporal results. First, I consider a famous discussion by Harold Hotelling, who argues that an ideally rational monopolist, who owns a stock of nonrenewable resource like coal, should be expected to husband that resource in a way that will be maximally beneficial to society. Next, I consider a common, and closely related argument that the interplay of supply and demand will guarantee that we will never deplete our stock of resources. Finally, I discuss an argument given by David Gauthier, in which it is claimed that rational, self interested utility maximizers would never agree to a contract that involved the depletion of resources needed by later generations.
5.5 First Argument for the Market:
Hotelling on the Optimal Intertemporal Use of Nonrenewable Resources

Virtually all discussions of resource economics and market optima begin with Harold Hotelling’s famous analysis. Although economic theory has changed a great deal since 1931 when Hotelling’s paper appeared, his work still represents a cornerstone of the received view among proponents of neoclassical economic analysis. Hotelling’s intention was to show that monopolists who have control of a stock of a nonrenewable resource (like coal, or oil) have a strong motivation to conserve their resource in the interest of keeping the price high, and maximizing overall profit. Because of this, resources will often be held from the market (conserved) even when it would be economically desirable to have them sold. He argues that conservationists may sometimes unwittingly serve the interests of monopolistic mine owners, who have an interest in keeping current supply low, and price high. However, later economists have taken other aspects of his model as more centrally important than this point. Implicit in Hotelling’s analysis is a concept of intertemporal efficiency, and an argument to the effect that free markets with enlightened monopolists in control of the stock of nonrenewable resource, should be expected to reach intertemporally efficient allocations. Under such circumstances, free competitive markets should be expected to yield the best outcome without coercive taxation or restriction by the state.

According to Hotelling, a rational monopolist will want to introduce her product into the market in a way that will maximize the total profit. So she will want
to sell when the price is highest, and the cost of extraction is lowest. Over time, the supply of any nonrenewable resource will diminish, and as it does so, demand will increase. The rational monopolist will therefore wait to realize the greater profits to be achieved later. At every point in time, and for each unit of resource extracted, the mine owner has a choice either to extract and sell the ore, or to leave it in the ground. Left in the ground, its value will increase at the market rate, as scarcity increases demand. If extracted, the profits could grow at the market rate of interest. So the owner is best off extracting ore until the rate at which its value increases when it is left in the ground equals the market rate of interest. The mine owner, by maximizing the present value of her resource, will behave like a conservationist. As Page characterizes Hotelling’s view, "Future scarcity, reflected in the expectation of higher future prices, leads each mine owner separately to act like a conservationist in order to maximize the present value of his profit stream."

As Page points out, this result can be approached from the perspective of social benefit as well as the perspective of individual profit maximization on the part of the mine owner. In this interest, Hotelling calculated the present value to society of the stream of resources flowing into the economy from a mine controlled by a rational monopolist who reasons as stipulated above. Because times of greatest consumer demand reflect the times at which the prices will be highest, it is socially

optimal, he argued, to release the resource when demand is highest. But at such
times, price will also be at a maximum. Monopolistic mine owners, in the interest of
maximizing their own profits and not from any altruistic conservationist motives, will
release their resources during times of greatest social need.\(^2\)

In fact, Hotelling argues that the problem faced in a competitive economy
is not that of over exploitation of resources, but of under exploitation. Those who
control resources have a strong motive to release them at rates below the social
optimum. In part, this is simply "part of the general tendency for production to be
retarded under monopoly."\(^3\) But even if monopoly is imperfect, and there is a small
number of independent mine owners, these problems can still arise:

[In a market with a limited number of sellers and many buyers,] if one seller
increases his price moderately, thus making some immediate sacrifice, the
other will find his most profitable course to lie in increasing his own price;
and then, if the original increase is not too great, both will obtain higher
profits than at "equilibrium."... With an exhaustible supply, and therefore
with less to lose by a temporary reduction in sales, a seller will be particularly
inclined to experiment by raising his price above the theoretical level in the
hope that his competitors will also increase their prices. For the loss of
business incurred while waiting for them to do so he can in this case take
comfort, not merely in the prospect of approximating his old sales at the
higher price in the near future but also in the fact that he is conserving his
supplies for a time when general exhaustion will be nearer and even the
theoretical price will be higher. Thus a general condition may be expected of
higher prices and lower rates of production than are given by the solution of
the simultaneous characteristic equations [i.e. at the social optimum].\(^4\)

\(^3\) Hotelling (1931) p. 152.
\(^4\) Hotelling (1931) p. 173.
Rather than a problem of over exploitation, Hotelling's model supports a prediction that we won't use our nonrenewable resources fast enough. If so, it might be economically optimal for the government to subsidize consumption, so as to keep the market price artificially high! If Hotelling is right, then conservationists, far from serving the interests of the public or future generations, are merely dupes, helping resource owners to maintain their monopoly rents.

5.6 Hotelling's Assumptions and Optimum Concept

Over 60 years after the publication of Hotelling's fascinating analysis, many discussions of resource economics end with a presentation of his argument, taking it to have shown that, provided that a properly functioning price mechanism exists, "no collective provision need be made by society for future generations either in respect of wealth in general, or in respect of finite resources in particular." But this is not the final step in the argument. There are two general ways to dispute Hotelling's result: if his argument fails, it must either be because his account of 'optimum' is too weak to carry normative force, in which case the achievement of a Hotelling-Optimum may not be intertemporally desirable, or because markets will not in fact reach the optima his theory predicts" because the conditions of the actual world are misrepresented by the assumptions of the model he adopts.

132 This characterization of the view is presented in an admirably clear discussion in Mishan (1981). Mishan states the view without advocacy.

133 Actually, as we have seen, Hotelling himself predicted that markets would lead to the underexploitation of resources, and that nonrenewable resources would be used
Hotelling’s optimum concept relies on what have become standard assumptions in neoclassical economics. According to Hotelling, greatest consumer need is represented in high prices, and since a rational monopolist will hold out for the highest prices, she will conserve resources to release them during times of greatest economic need. Of course, high prices may not always be correlated with actual consumer needs unless we simply redefine the term ‘need’ to conform to economic criteria. Market prices are high when people are both able and willing to pay them. To a large degree, people’s ability to pay depends generally on the behavior of the market: when the market is strong and at least some people are doing well, the well off members of society may think nothing of spending a little extra to get what they want or need. People’s willingness to pay depends more centrally on their individual welfare level. One who is destitute might be willing to pay almost anything to get what she needs, but may be unable to do so.

When the economy is in a general slump (or a more frightening steady decline) people might be willing to pay almost any price, but may not have the resources to do so. In such cases, ‘need,’ as measured by a consumer’s willingness to endure significant sacrifice in order to procure the resources she needs, may be at a slower rate than would be optimal. But in the discussion of many subsequent economists, the basic structure of Hotelling’s argument is used to show that competitive markets will achieve optimal rates of extraction. See Page (1977), Beckerman (1974a) and (1974b), Simon (1986), and Fisher (1990).
serious (or "high"), even though the market price may still be quite low. In fact, it may be that the market price of a particular resource may be more sensitive to changes in the overall strength of the market than it will be to changes in the degree to which people need available resources in order to live adequately decent lives. In general, the problem is that market prices are determined by a variety of different factors, and it is possible to describe cases in which the price of a given resource is low, but social need for that resource is nonetheless high. The clearest case of this is the case in which those who are in need are the poor or underprivileged members of society. In such cases, market prices will not accurately reflect social need for resources. Since Hotelling's conception of an intertemporally optimal distribution looses its normative force whenever real human need for resources is not accurately measured by the market price of resources, this would seriously undermine the claim that Hotelling-optimal intertemporal distribution of resources represents a desirable intertemporal distribution.  

134 I have argued here that the Hotelling-efficient time path is not necessarily a desirable intertemporal distribution, since it fails to accommodate commonsense ideas about social welfare. E.J. Mishan has also argued that Hotelling's conception of an intertemporal optimum fails to meet minimal normative standards. For a characteristically clear and penetrating argument that this time path is not intergenerationally pareto optimal, and that, therefore, it fails to meet standard economic criteria for efficiency, see Mishan (1981) pp. 501-505.
But this is not the most important criticism of Hotelling’s argument, or at least the use of Hotelling’s argument to support the claim that competitive markets will yield desirable intertemporal distributions. For as I will argue, even if Hotelling’s conception of an intertemporal optimum did reflect a desirable intertemporal distribution, there are important reasons to think that real-world markets will not approach a Hotelling-optimum as they approach conditions of perfect competition. The first of these reasons reflects the role of interest rates in Hotelling’s model. The second reflects the assumptions about persons which are implicit in that model.

First, in Hotelling’s model, a rational monopolist will conserve resources as long as the rate at which their expected value increases is lower than the market rate of interest. So when the market is strong, the motive to conserve is weaker, not only, as argued previously, because people will have the money to pay a higher price, but also because money is simply much more valuable at such times. Conversely, if the market is weak, then the motive to conserve is stronger. So in times of economic boom, we should expect to see more exploitation of resources not because the social need for these resources is highest, but only because money is relatively valuable. Since the motive to extract resources is not exclusively tied to social demand for that resource, but also to the market rate of interest, if the interest rate is high, it’s better to have cash to invest rather than capital already invested at a fixed rate.
rate is high enough, then the motive to extract will be high as well, even if the price is relatively low. This would lead us to predict that social waste resulting from over exploitation of resources would be greatest when the market is strongest.\textsuperscript{136}

There is a second important respect in which the real world does not conform to the assumptions of Hotelling's model. Hotelling's model works only if the problem facing a resource owner is maximizing the total present value of the resource under her control. He explicitly assumes that such a person will be indifferent between a payoff $p$ at time $t$, and a payoff $p(1+\pi)^t$ at time $t+n$, where $\pi$ represents the market rate of interest.\textsuperscript{137} But the problem of resource use over time is a problem for which the time horizon may be very distant, perhaps many lifetimes away. Even if a person were indifferent between receiving market-adjusted payoffs at different times within her own life, it is quite unlikely that a person would be indifferent between receiving a payoff of $p$ at $t$, or having someone else receive a payoff of $p(1+\pi)^t$ at $t+n$. The problem is, there are circumstances in which the maximization of a person's value function will differ from the maximization of the present value of her holdings. Hotelling's argument applies only in cases for which these two functions are the same. An important reason why these values diverge is

\textsuperscript{136} Perhaps this is partially reflected in the increased extraction rates during the economic boom of the Reagan presidency. Of course, there are alternate explanations for this as well, such as increased efficiency of extraction resulting from technological advances.

\textsuperscript{137} Hotelling (1931) p. 140.
that the people who control resources are human beings, and they have a finite lifespan. If they aim to maximize personal value, then they won’t wait for times of greatest social need, rather they will reap profits when those profits will provide the most individual benefits. As we noted earlier, people’s savings habits are likely to change over the course of a life time, since a rational investor may borrow during youth, save during middle age, and spend savings after retirement. The market interest rate represents the value of money within the economy, but in a sense, individuals must consider their own internal interest rates, representing the value of money for them. The value of a dollar to an individual is likely to be very different at different points within her life, and these differences will not reflect the market rate of interest or the market price of holdings.

But an even more important reason why maximization of personal value will not be the same as maximization of present market value is that those who control resources will anticipate their own death. It is absurd to think that I should be indifferent between a payoff of p at time t, and an alternative payoff of p(1+n)^t at t+n if I am not likely to be alive at t+n. The value to me of a payoff that won’t arrive until after I die depends on the degree to which I care about the welfare of the person who will receive the payoff. On the other hand, payoffs that will arrive while I am still alive to enjoy them have, of course, a very different value to me. Since people cannot be expected to be indifferent between market adjusted payoffs which arrive before their deaths and those that arrive after they have died, the conditions implicit in Hotelling’s model will obtain only within the time frame of an individual life-span.
But any potential solution to the problem of the use of finite resources over time must be capable of at least taking into account the possibility that at least some resources should be conserved for use in the distant future. As we have seen, even if high prices for resources did reflect serious human need for those resources, we should not expect monopolistic mine owners to conserve until periods of great social need except when they, as individuals, will still be alive to realize benefits. Because of this, it is unlikely that rational, discriminating monopolists in real world markets will come close to achieving Hotelling optima.

A final, closely related problem makes it even less likely that real-world markets will approach Hotelling optima. People discount future eventualities, and they do so within their own lives as well as with respect to the lives of future persons. We need not claim that discounting is rational, or morally justified, only that it accurately describes people's behavior. If those who control resources discount future payoffs within their own life-times, and do so beyond the market rate, then they are more likely to release their resources earlier than later, so as to receive an earlier payoff. Combined with people's propensity to value more highly payoffs received ante mortem than those received post mortem, this will tend toward a situation in which resources are used at a faster rate than Hotelling's criterion would recommend. Even if the Hotelling optimum did represent a desirable intertemporal distribution, it is unlikely that real-world competitive markets will reach such a distribution. If we incorporate individual time discounting, and finite
lifespan (with the resultant implications for time preference) into a Hotelling-type model, the inadequacies of that model become clear. It is possible to describe circumstances under which it would be individually rational for a person in control of an infinitely renewable resource to exploit it at a non-renewable rate: if I expect to die soon, what reasons would motivate me, an individual utility maximizer described by the assumptions of an economic model, to conserve my renewable resource for the future? I will not be there to enjoy the benefits, so the only motive available seems to be my altruistic concern for those who will live in future generations. Acceptance of Hotelling’s model as a defense of the intertemporal-distributive effects of competitive markets, relies on the bare altruistic beneficence of those who currently own resources. Nothing but their concern for the welfare of future persons insures that future generations will receive from us a world capable of responding to their needs. 138

Hotelling’s brilliant argument cannot be taken, as it quite often is in contemporary discussions of the problem of intertemporal distribution of resources, as a defense of competitive markets. His theory should not be taken to support the complacent view that free markets will optimally provide for the needs of the future. What Hotelling has shown is that there are conditions under which markets will reach a kind of intergenerational optimum. He has not shown that these optima represent a

138 If Sen is correct about the isolation paradox, then they may be unable to look after the interests of the future even if they are so motivated. See Sen (1967).
desirable intertemporal distribution, nor that the conditions of the real world are such
that we should expect our markets to reach these optima. For a defense of free
competition as a viable social policy, we need more than this.

5.7 Second Argument for the Market: Supply, Demand, and Substitution

Hotelling believed that the world was eventually destined to run out of
resources. The problem, then, was to find a way to use those resources in a way that
would be most likely to produce the greatest utilitarian total of human felicity. But
more recent economists139 claim that the world's stock of resources is literally infinite,
and more surprisingly, that this can be proven within the bounds of economic theory.
As long as the competitive price system is functioning adequately, increased demand
will create economic circumstances propitious for the development of new
technology to hoist us out of any predicament we find ourselves in. The basic idea is
this: as a resource r becomes increasingly scarce, its price will rise. When this
happens, producers who use r to make their product have an economic motive to
search for some way to do without r, either by finding some alternate substance
which works almost as well, or by finding a way to bypass a step in their
manufacturing. Further, there is a strong motive to be more efficient in the use of
any r which can't be done without. The result of scarcity then, is an economic
environment which rewards certain kinds of technological advance.

Some of those who advance this argument claim that it shows that we will

never run out of energy. Here is a concise and fairly representative statement of the view:

...it makes little sense to speak of the country or the world as "running out" of energy. When the supply flow thins, prices increase, consumption declines, and, aided by new technology, the supply of the commodity in question, or a workable substitute, increases. A new equilibrium emerges at which supply and demand are brought into balance at a higher price.

Thus the world will not run out of oil, but it will have to pay more for it. As oil becomes more costly to find, extract, and transport from remote places, its use will decline. Customers will abandon it for other sources of energy, or use less energy altogether by substituting other goods (blankets, insulation), or both. Oil will continue to be used by those who value it enough at the higher cost not to go without. It pays them to buy at the higher price. If the market works-- a proposition one should not take for granted-- the transition should not be too painful and petroleum will be used efficiently, that is, in uses where it has the highest value to the user. 141

If the market works, these writers claim, certain results will come about. First, equilibria will still be reached, at which supply and demand will be "brought into balance." Second, we will never run out of our supposedly finite resources like oil, rather the price will rise as scarcity sets in. Third, the economic climate created by these higher prices will provide an economic motive for the search for substitutes. As substitutes for our finite resources are developed, we will go through a 'not too painful' transition to an age in which different resources supply our needs. We will consider each of these three claims.

First, the authors comfort us by assuring us that new equilibria will

continue to emerge even though the price of finite resources may rise. Reflection on the nature of such equilibria undermines any comfort this might seem to provide. There are, after all, describable circumstances in which supply and demand come into balance and an equilibrium is achieved, but for which there is widespread famine and want. We have practical concerns quite beyond the ability of markets to reach equilibria; we need to know some characteristics of the equilibria to be achieved.

But perhaps Simon’s famous argument that our resources are infinite would provide support for the conviction that the equilibria reached will not be characterized by famine or want? Simon famously (or infamously) argues that the notion that we may run out of resources is based on a false conception of the term ‘finite:’

The word "finite" originates in mathematics, in which context we all learn it as schoolchildren. But even in mathematics the word’s meaning is far from unambiguous. It can have two principal meanings, sometimes with an apparent contradiction between them. For example, the length of a one-inch line is finite in the sense that it is bounded at both ends. But the line within the endpoints contains an infinite number of points; these points cannot be counted, because they have no defined size. Therefore the number of points in that one-inch segment is not finite. Similarly, the quantity of copper that will ever be available to us is not finite, because there is no method (even in principle) of making an appropriate count of it, given the problem of the economic definition of "copper," the possibility of creating copper or its economic equivalent from other materials, and thus the lack of boundaries to the sources from which copper might be drawn.\textsuperscript{42}

Hotelling also played with the idea that finite resources could be extended infinitely if the price mechanism works in a certain way:

\textsuperscript{142} Simon, (1981) p. 47. Herman Daly cites and discusses this argument in Daly (1991) p. 263.
In order that the time of working a mine be infinite, it is necessary not only that the price shall increase indefinitely but that it shall ultimately increase at least as fast as compound interest."

What can this mean? It will be valuable to present as sympathetic a reading as possible of Simon's argument (and Hotelling's comment) from the start. Surely, one will say, the amount of copper that exists is finite in many important ordinary senses: for example, there is some finite (though unknown) number that accurately represents the mass of all the copper in discovered and undiscovered deposits on our planet (or even in the universe). But there are two ways in which this seemingly finite amount may be conceptually expanded. First, like the one-inch line in Simon's example, we may continue dividing our resources by half (or less), using ever smaller amounts of copper. According to Hotelling's example, cited above, this is precisely what a rational mine owner will do under conditions of extreme inflation. But this will not be sufficient to stretch our resources literally to infinity. If nothing else, we will not be mining copper any more after we reach the point at which there is only one molecule left to exploit.

To some Simon's argument may suggest the paradoxes of Zeno. Herman Daly writes:

...Simon begins with a correct distinction regarding infinity of distance and infinity of divisibility of a finite distance, and then as soon as he moves from one-inch lines to copper with nothing but the word "similarly" to bridge the gap, he forgets the distinction. It would be a wonderful exercise for a class in freshman logic to find the parallel between Simon's argument and Zeno's

143 Hotelling (1931) p. 156.
paradox of Achilles and the tortoise. Recall that Zeno "proved" that Achilles could never catch up with a tortoise that had a finite head start on him. While Achilles traverses the distance from his starting point to that of the tortoise, the tortoise advances a certain distance, and while Achilles advances this distance, the tortoise makes a further advance, and so on, *ad infinitum*...

...Those who are loud in their praise of Simon are the same people who would have bet on the tortoise, and are now betting on infinite resources.144

But in the second stage of his argument, Simon suggests that we should redefine "copper" according to economic criteria rather than chemical composition. It is on the second that Simon pins his hopes, and on which the strength of his argument depends. Simon recommends that we adopt functional definitions for the resources we consider to be 'finite."145 That is, for the purposes of social policy analysis, such resources should be defined according to the services and benefits we receive from them rather than by their chemical composition. So defined, argues Simon, the extent of our resources is limited not by their physical mass, but only by our ability to develop substitutes capable of serving the same functional role as the resources we currently use. So defined, "copper resources" are limited only by our inventiveness in discovering new materials to use as conductors (perhaps alternate metals) or developing alternate technology which doesn't require conductors (like fiber optics), as well as alternative materials to use in place of copper in other contexts in which it is currently used.

We have no way to measure or accurately predict the ability of human innovation to create substitutes. Simon explicitly assumes as a premise of his

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argument that if prices for resources rise, economic motives will in fact inspire people to find substitutes, and further, that they will be able to do so, provided only that they have proper economic motivation. He raises this assumption to the status of principle: the "principle of infinite substitutability."

If we wish to take the moral claims of future persons seriously, and to give them their proper weight, how should we regard Simon's view? Without more support, it is far from obvious that we should be as ready as he seems to be to accept a principle of infinite substitutability. Presumably, our ability to find substitute materials and resources is limited in ways we cannot now know by the properties of the physical world, and limited in quite a different way by the inventiveness and practical imagination of technologists. Even if we have great faith in human imagination, and firm belief in the necessity of technological advance, it seems excessive to place infinite or absolute trust in our ability to techno-think our way out of any resource scarcity we may bring upon ourselves. But in the end, this seems to be the thrust of Simon's argument, an argument which is widely accepted among economists. As the United States Government has discovered in its dealings with NASA, the "can-do attitude" of many technologists often leads them to foster unreasonable expectations in those who depend on their products discoveries and inventions.

To be fair, one of Simon's aims is to respond to naive catastrophist predictions which simply make estimates of the stock of resources and project the

146 Actually, this principle is adopted by Simon from an earlier article by Goeller and Weinberg (1976) p. 684.
amount of time left for civilization if we maintain present usage rates. Simon is right about this: if predictions about resources and their ability to respond to human need do not include some consideration of the ways in which this resource base can be extended, then their predictions will be flawed. If the argument we have been considering really does boil down to a simple prediction that technology will ultimately be capable of solving our problems, it is surely too weak to bear much weight. But perhaps this reading is too unsympathetic: perhaps we can find alternative grounds to support Simon's claim by considering different ways in which technological advance can increase our energy supply. In general, there are three ways in which technology can extend our resource base: First, technology can help us to find better, cheaper, more efficient ways to discover and extract existing resources (more efficient coal-digging machines which don't require strip-mining). Second, it can help us to use our resources more efficiently. (More miles per gallon of gas...) And finally, technology can help us by offering real substitutes for resources we currently use (more efficient hydrogen or solar cars instead of gas guzzlers).

Obviously, increased efficiency in extraction, will not increase the size of a resource, and ultimately cannot support the claim that our energy base is infinite. But in theory at least, consideration of the ways in which technology can extend our resource base presents a theoretical possibility that our resource base could be
extended infinitely. For example, if the efficiency of automobiles continues to increase exponentially, so that each generation can afford to use (and actually uses) only half of the total amount of fuel used by the previous generation, then in theory we will never 'run out.' But as we noted, physical resources are limited, if by nothing else, by molecular composition. Without substitute energy sources, it is difficult to believe that the members of any later generation will be able to support their energy needs with a single molecule, and the problem they leave for their descendants will be even more perplexing. The functions economists use in their models assume infinite divisibility of money and resources, but actual resources may not cooperate with such assumptions. Neither increased efficiency in extraction, nor increased efficiency in usage can support Simon's claim that our resource base is infinite. His argument, then, really does seem to rest entirely on his dubious principle of infinite substitutability. The entire argument rests on faith that we will be able to invent our way out of any problems we may face.

Should we share Simon's faith? It is not clear where we should look to find confirmation. We may be justified in believing that people are remarkably clever and inventive without being justified in believing that cleverness and inventiveness are infinite, or that they support the principle Simon needs. Simon's own support for this principle comes largely from an article by Goeller and Weinberg (1976), in which the authors exhaustively consider different mineral resources we currently use, and discuss specific alternatives which may be developed. Their own "principle of infinite substitutability" is somewhat more modest than that required for
Simon's conclusion: they argue that there is a surprisingly high probability that we will be able to find effective substitutes for all our 'finite' resources provided that we are able to discover "an inexhaustible, non polluting source of energy."  This is somewhat weaker than Simon's principle, since the antecedent conditions are crucial. Goeller and Weinberg seem to have been confident, in 1976, that we would perfect cold fusion, or discover efficient ways to harvest large amounts of energy from the sun. It is possible that we will do so. However, we should have no more confidence in Simon's principle than we have confidence that we will solve these specific technical problems.

There is another important variable missing from Simon's argument. Often technological solutions, and the development of substitutes for previous technology bring unanticipated problems. In developing his technological substitute for the horse drawn carriage, Henry Ford cannot have imagined that his efforts would ultimately create serious smog problems in Los Angeles and Mexico City, or that it would lead to destructive oil spills throughout the world's oceans. Substitutes are a net gain for human society only if the problems they solve are more extensive and serious than the new and often unanticipated problems they raise. For this reason, it is usually prudent to be warier than Simon seems to be, of technological solutions to our problems. Problems like air pollution might not exist as problems at all, were it not for previous technological "solutions." It may well be that automobiles are a net gain for human society, and that the benefits of ready

transportation outweigh the costs of pollution and environmental damage. There are, of course, people who would not agree, but it is likely that most economists and policy analysts would view such persons as fuzzy-minded radicals whom they can safely ignore. But it seems equally fuzzy-minded and just as radical to ignore, in general, the unanticipated costs of newly developed substitute technologies. Simon's discussion assumes without argument that the problems associated with new substitutes will be outweighed by the benefits they provide. When the cost of error is especially high, as it is in the case at hand, we are justified in demanding an argument.

It is important to note that this discussion has left the realm of theory, and come to rest on empirical claims. Specifically, Simon's argument that resources are infinite has been found to depend entirely on his optimism about technology, and the ability of technology to solve any environmental problems we may create. This has two important consequences for the received view as he defends it. First, the economic dogma that we need not worry about resources for the future, and that the free competition of the market will adequately account for the needs of future people is not supported by economic theory alone, but by economic theory combined with factual assumptions about human innovation and the value of technology. This gives these claims a very different epistemic status than, say, the claim that perfectly

148 While he does not address this question in particular, Simon does address the problem of pollution. See Simon (1981) pp. 127-143. For a convincing response to Simon's arguments, see Daly (1991) p. 265-267.
competitive markets will achieve pareto optima. This latter claim can be proven within the assumptions of perfect competition, and doesn't rely on specific empirical assumptions. Second, our confidence in the claims made by those who accept these dogma should be only as great as our confidence that human imagination and ingenuity is not only a wonderful resource, and a source of hope for the future, but that it is actually infinite in its ability to solve the practical environmental problems we face as a species. Julian Simon is quite confident. He is so confident that he is willing to wager the well-being of the future on the claim that he is right. It is far from clear, however, that his confidence would be comforting to our distant descendants. And if Simon is wrong, he will not be the one who pays the price for this bad wager.

5.8 Third Argument for the Market:

Gauthier and the Impossibility of Unfair Intergenerational Contracts

The arguments we have been considering were offered by economists interested in demonstrating that free competitive markets are capable of accommodating the needs of the future. David Gauthier's project is importantly

149 Of course, this is not to say that the claim that 'actual markets will achieve pareto optima' has a different status from Simon's dogma. In each case, the usefulness of the theory depends on whether the assumptions of the model are reflected in the real world.
different, but just as importantly related to these arguments for the market. Gauthier’s aim is not to develop a theory of political economy, but a moral theory and theory of justice based on roughly Hobbesian premises. Gauthier’s view is based on the premise that moral behavior must be rational behavior, and that moral requirements must be requirements of reason. However, morality also involves the constraint of bare individualist maximization of utility, else it would be impossible to explain how rational individuals could achieve cooperative benefits in the context of public goods and prisoners dilemmas. Gauthier’s problem, then, is to show how the theory of rationality can generate moral constraints on action.

But this is not as distant as it may initially seem from the concerns of the economists we have been considering here. For the conception of rationality Gauthier adopts is imported from economic theory, and like many economists, Gauthier is concerned to show that morally desirable consequences will follow if people are left freely to interact and to contract with one another. He explicitly cites the result of the first theorem of welfare economics: the claim that free competitive markets will achieve pareto optimal results. He views this as a consideration which supports his conception of morals by agreement.150

Gauthier’s conception of justice is based on a conception of reciprocity as contract and mutual advantage. But we have already discussed the problems reciprocity-based theories have in accounting for obligations to future persons: full reciprocity is, as we noted, impossible between persons who currently exist and

others who will not come into existence for some time, and whose lives will not overlap those of present persons. For this reason, Gauthier’s theory seems to leave future generations beyond the pale of justice and morality. Gauthier recognizes this in a passage worth quoting at length:

Relations among persons of different generations may seem to fall outside the scope allowed to rational morality by our theory. While supposing mutual unconcern, we have nevertheless generated impartial constraints on the maximization of individual utility by appealing to the benefits of cooperation. But cooperation is possible only among contemporaries who actually interact. Although an individual can do much to benefit or harm his descendants, only those whose lives overlap with his can benefit or harm him in return. He has then no reason to concern himself with others. In maximizing his utility without regard for future persons whose lives will not overlap with his own, he runs no risk of attaining a sub-optimal outcome. Any constraint he might accept would result in a simple transfer of utilities from himself to future persons; it could not lead to mutual benefits. Any costs that his actions impose on future persons are strictly incidental to the benefits he receives. (…) So an individual does his descendants no injustice in not concerning himself with them. If the world is not left a fit place for their habitation, much less their well-being, this merely characterizes the circumstances in which they find themselves; their rights are not affected."

Gauthier notes that if this conclusion must be accepted, it forces an advocate of reciprocity-based ethical theory to admit the existence of a great difference between our intuitive conception of morality and the morality of rational choice. This might, he claims, lead one to reject the assumptions of economic rationality implicit in his view: "Rejecting the assumption of mutual unconcern, we might explore the morality of feeling. Characteristically persons do take an interest at least in their immediate descendants. And this interest expresses in a desire to

leave the world a better place, or at least no worse a place, than they themselves found it." However, Gauthier believes that there is a way to make the morality of rational choice more intuitively appealing, by showing that it can take into account the interests of the future.

It might seem impossible to extend the conception of justice as 'mutually beneficial reciprocal contracts among rational self-interested agents' to future persons. As noted earlier, we can not make pure reciprocal contracts with future people who are not here to agree to them. Free agreement is the binding moral force behind contract, so present agreement cannot, it would seem, bind the will of the future. It was in response to this observation that Thomas Jefferson suggested that the constitution should be re-written every nineteen years, so that it would continue to represent the free agreement of those who live under it. Jefferson writes:

Can one generation bind another, and all others, in succession forever? I think not. ... A generation may bind itself as long as its majority continues in life; when that has disappeared, another majority in its place, holds all the rights and powers their predecessors once held, and may change their laws and institutions to suit themselves. Nothing then is unchangeable but the inherent and inalienable rights of man.153

Jefferson believed that the binding moral force of the constitution depended on the contractual agreement of the popular majority who framed it: according to Jefferson, the constitution is a reciprocal contract, and binds only those who agree to it. But while Jefferson was willing to recognize, in addition to moral

restraints based on reciprocal contract, a set of "inherent and inalienable" individual rights, which provide pre-contractual constraints on individual choice. Gauthier's theory recognizes only those constraints which are based on enlightened individual advantage." Prima facie, it would seem that Gauthier's theory provides no safeguards for the interests of future persons.

However, Gauthier argues that this claim ignores the significance of the fact that generations overlap. Unlike generations of mayflies, and paulo verde beetles, the persons who constitute individual human generations do not all die before the following generation comes into existence. Gauthier believes that this has important consequences for the nature of contracts we may hope to strike with one another:

The generations of humankind do not march on and off the stage of life in a body, with but one generation on stage at any time. Each person interacts with others both older and younger than himself, and enters thereby into a continuous thread of interaction extending from the most remote human past to the furthest future of our kind. Mutually beneficial cooperation directly involves persons of different but overlapping generations, but this creates indirect cooperative links extending throughout history. Each person, in considering the terms on which he is to co-operate with those in an earlier generation than himself must keep in mind his need to establish similar terms

154 Of course, Gauthier argues that the Lockean proviso, his version of which prohibits bettering one's situation through interaction that worsens the situation of another, [Gauthier (1986), p. 205] does generate pre-contractual rights. But unlike Jefferson's 'Rights of Man,' Gauthier's rights are still generated by the principle of individual advantage. In this sense, Gauthier's view is closer to that of Hobbes, while Jefferson's reflects the influence of Locke.
with those of a later generation, who in turn must keep in mind their need to co-operate with members of a yet later generation, and so on. Thus, although each individual might be prepared to agree with his contemporaries that they should exhaust the world’s resources without thought for those yet to be born, the need to continue any agreement as time passes, to extend it to those who are born as it ceases for those who die, ensures that, among rational persons, the terms must remain constant, so that exhaustion of the world’s resources does not present itself as an option. No matter when one lives, one should expect the same relative benefits from interaction with one’s fellows as were enjoyed by one’s predecessors and as will be enjoyed in turn by one’s successors.15

If Gauthier is correct, the interests of the furthest distant future generation are reflected in the terms of any agreement we make in which their interests are relevant. The argument seems to go something like this: 1) As a member of generation G₁, when making a contract with a member of the previous generation G₀, I will bear in mind that I will also need to contract with members of generation. G₂. 2) If I make a current agreement with members of G₀ which fails to give proper weight to the interests of those members of G₁ with whom I will later need to contract, then they will be unwilling to cooperate with me, so I will lose out. 3) But I know that when members of G₁ will contract with me, they will bear in mind that they will later need to contract with members of G₀. 4) If members of G₁ make an agreement with me which fails to give proper weight to the interests of those members of G₀, with whom they will later need to contract,… and so back to step 2, mutatis mutandis.

And so on, ad infinitum, until the interests of the most remotely distant future are represented in the current contracts made today. Because this chain never

ends, or if it does end, ends with the last generation of human beings who may be expected to exist, Gauthier believes that present bargains must be made in a way that takes into account the interests of the furthest distant future. And not only does it take these distant people into account, it does so in an ideal way: they would agree, were they now here, to the contracts made in the present. Gauthier optimistically claims that this will guarantee that earlier generations will not exhaust the world's resources: the possibility "does not present itself as an option." Since future persons would not agree to it, we cannot rationally do so either.

We may take this argument in either of two ways. Either Gauthier is presenting a claim about the way people actually behave in our world, or he is making a claim about the way in which ideally rational agents would behave. Either way we construe the argument, I will argue, it fails.

If we take Gauthier to be making a claim about the behavior of actual persons, then we may agree that his argument is ingenious, but we must also conclude that it is not successful. It is simply implausible to think that lawyers for oil companies, in negotiating a contract to tap a petroleum deposit, consider whether those who will live in the furthest distant future would agree to the contract. It is equally unlikely that the owner of the land under which the deposit sits considers, in taking a given offer, whether the price received reflects the interests of the distant future. In the real world, such people seem to maximize their individual profits without compunction about the future.

It we take Gauthier to be claiming that "depletion will not present itself
as an option" only for ideally rational agents, then two responses suggest themselves. First, this would seriously diminish the normative social relevance of his theory. Real people are not fully rational as his theory assumes, and any theory which requires the assumption that they are must seem unrealistic and utopian. The assumption of individual rationality is usually justified by a companion claim that the behavior of semi-rational people will be importantly similar to the behavior of ideally rational agents, or at least that the aggregate behavior of many people will yield results as if the individuals responsible were choosing rationally. This seems to be a case where the companion claim fails to hold, and therefore the assumption of perfect rationality is unhelpful and inapplicable. Perhaps there are possible worlds to which his theory applies, but it cannot help us in this one.

But even more importantly, it is difficult to see why Gauthier should believe that perfectly rational agents would reason in the way he describes. In Gauthier's view, 'rationality' is merely the maximization of individual utility. So to show that a perfectly rational agent would reason as Gauthier describes in the passage cited, we would need to show that reasoning in this way would maximize individual utility.

But perfectly rational agents will not maximize individual utility by taking into account the interests of the distant future. Gauthierian contracts result from bargaining among those who agree to them, and they apply only to participants. The outcome of a bargain is acceptable to each participant just in case it puts her in at
least a marginally better position than she was before. This improved position will, in many cases, increase her bargaining power, so that in subsequent agreements she will be able to exert more weight in the bargaining process. Absent inheritance and luck, when members of subsequent generations come on the scene, they face us from a position of relative weakness, since they have not yet had the opportunity to improve their situation through contract. The contracts we make with members of subsequent generations are different contracts from those we make amongst ourselves, and it is individually rational for each contractor to attempt to increase her power and threat capacity, so that later bargains will come out better for her. Facing us from a position of relative weakness, later generations are not in a position to refuse to make agreements and contracts with us. Contrary to Gauthier’s assumption, the possibility that they will refuse presents no potential threat to us. Since we have prior claims and enforceable entitlements, they must in many cases accept the world not on their own terms, but on our terms, on the terms of those who currently have claims and rights. Gauthier’s argument fails to recognize that there is a vast difference in power between present and future (especially distant future) persons, and this power difference can be used by present people to gain individual benefits at the expense of the future.

Further, Gauthier’s argument inappropriately ignores the effects of uncertainty on current willingness to contract. We may be uncertain both about the effects of our current choices and contracts, and also about what we can convince subsequent generations to agree to. As consequences recede further and further into
the future, contractors may be able justifiably to convince themselves that they may be able to talk subsequent generations into making a certain deal in spite of the fact that such a deal would have consequences which would be unacceptable to yet more distant future persons who won't come into existence for many hundreds of years. Rational contractors might, quite plausibly, be able to get together now and make an agreement, fully cognizant of the fact that the harms which will result from this agreement will not occur for ten, or a hundred generations. There may be no reason for such contractors even to consider whether those distant future persons who will suffer harms would agree if they could.

There is an additional important reason why Gauthier's argument fails to show that guaranteeing free economic rights to members of current generations will provide for the interests of future people. If it succeeded in other respects (as I have suggested it does not), Gauthier's argument would only show that fully rational agents would not agree to contractual arrangements which fail properly to take the interests of future persons into account. But often resource depletion and destruction are not the result of contracts people actually make, but rather the result of agreements they are unable to reach. The problems of public goods and externalities are only one example of cases in which failure to achieve a contract can cause depletion or destruction of resources needed by the future. For example, suppose Irait and Kuwaque have both drilled into the same oil deposit. Unless they are able to come to an agreement concerning property rights in the oil, the situation is similar to a "tragedy of the commons." In such a context, it is individually rational for

156 Hardin (1968).
each to extract oil as fast as possible until the deposit is exhausted. In circumstances like these, the interests of future generations, and the need to extend current contracts to them, is not a necessary rational consideration for either party.\textsuperscript{157} This is not to say, however, that we would be justified in ignoring their interests under such circumstances.

5.9 Conclusions

In a quote cited earlier in this chapter, David Gauthier claims that the "triumph of the science of economics" was the demonstration that the conditions of a perfectly competitive market will necessarily produce optimal outcomes.\textsuperscript{158} In a similar vein, David Schmidtz writes that "Society runs itself,"\textsuperscript{159} and encourages us to hope that free competitive markets will create circumstances in which people will flourish. This chapter contends that these optimistic claims are somewhat overstated.

Market solutions to social problems have two crucial advantages: First, they respect individual liberty, since they do not involve coercion. The second advantage is closely related: market solutions are self-enforcing in an important way. In the market, individuals make contracts in order to improve their situation, so

\textsuperscript{157} David Schmidts (1990) convincingly argues that there are situations in which such tragedies might be solved by an appropriate allocation of property rights.

\textsuperscript{158} Gauthier, (1990) p. 349.

\textsuperscript{159} Schmidtz (1991).
market contracts (provided that they are made by rational, well-informed persons) will be mutually advantageous. In such circumstances, since it is in the advantage of each contractor to comply with the terms of the contract, no external coercion is necessary. If it can be shown, then, that free markets provide desirable outcomes, this provides an additional strong motive to try to make our own institutions mirror the conditions of perfect competition implicit in economic models.\footnote{Provided, that is, that actual markets approach market optima as the conditions of actual markets approach those of perfect competition. This is not to be taken for granted. But this consequence will follow if (as economists argue) all indifference curves are smooth, continuous, and differentiable. See Varian (1984).}

The arguments of this chapter undermine the optimistic claims of those who celebrate the ability of markets to achieve economic optima. The remarkable proof that markets reach pareto optimal outcomes, the surprising and hopeful claim of the first theorem of welfare economics, is insufficient to show that markets yield desirable consequences over time. To show this latter claim, it is necessary to make further, much less plausible assumptions about the ability of technology and innovation to provide substitutes for the materials we use, and for the products and resources which are responsible for our current level of social well-being. At best, economic theory allows us to conclude that there are describable conditions under which society will run itself. It is far from obvious that we live in such conditions. When participants in the market have a finite lifespan and limited altruism toward
subsequent generations, when market conditions are such that resources can produce short-run economic gains at long term environmental and productive cost, free markets should be expected to lead to excessive exploitation of non-renewable resources, and to deprivation and gratuitous waste. Free markets are not likely to provide safeguards for the interests of distant generations, and in fact they are likely to run roughshod over those interests.

In closing, I would like to raise an additional doubt about the ability of human innovation to solve the problems we may face as we deplete our resources and pollute our environment. Technology may be able to provide perfectly adequate substitutes for materials like copper (Simon’s example), but it seems less likely that it can provide substitutes for other aspects of our environment which may be crucial to the quality of our lives. Consider the way in which technology has created substitutes for previous forms of entertainment and enjoyment: books and hikes have, in the lives of many people who live in technologically advanced societies, been replaced by television and computer games. These new technologies are, by some economic criteria, ‘improvements’ over what they replace: after all, they are addictive, and with time, it seems that people come to choose the technological substitutes over previous sources of enjoyment. They do this even when both are available. According to the economic theory of preference and utility, this shows that they are better off than they would have been without these substitutes. But to many, this will indicate the limitations of economic theory, not that people are really better off. 161

161 This is not to deny that some substitutes seem to be obvious improvements.
Finally, pace Gauthier’s ingenious argument, we seem to have no reason to think that current contracts will incorporate adequate safeguards for the interests of the future. Rational contractors may take the interests of the future into account in the way they formulate the terms of cooperation with others, but there is no particular reason to believe that they will do so. Further, even if current agreements did reflect the interests of future persons, this would not solve the problem, since resource depletion and environmental degradation often result from the inability of parties to reach contracts, not their ability to reach bad contracts. The case of the tragedy of the commons illustrates a clear example of such a situation.

The arguments in this chapter undermine one line of support for the view that protection of negative rights is all that is necessary to insure social justice. For many, acceptance of this view is at least in part supported by the claim that institutions which provide these minimal protections for the individual, and which allow free competitive markets, will have consequences which are desirable from the utilitarian perspective. This is less plausible if, as I have argued here, markets are unlikely to achieve utilitarian results over time. But the other line of support for the minimal state is based on a conception of property rights and autonomy. In the following chapter, I will discuss this conception of property rights.

Word processors seem much better than quill pens, and I am pleased that, unlike Hobbes, I have not needed to endure the latter.
Chapter 6
CURRENT PROPERTY RIGHTS AND FUTURE CLAIMS

6.1 Introduction
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6.1 Introduction

I have argued that future persons have a general right that their interests be given due moral consideration in the context of any current decision in which they have a morally significant stake. By implication, no social institution or set of such institutions is justified if it fails adequately to accommodate the interests of future persons. But by itself this very general right cannot show that future persons have rights to more specific goods they may need for survival, or goods they will need if they are to be able to satisfy human needs beyond bare survival. If the argument of the previous chapter is sound, then free competitive markets will not, by themselves, adequately accommodate interests of future persons. This provides a prima facie argument against the unrestricted capitalism advocated by some libertarian theories of justice. But the negative rights which constitute the foundation of the libertarian
theory are of undeniable importance. We might be willing to grant the more modest
classical liberal claim that an acceptable system of political organization must
recognize and protect individuals' negative rights to liberty and property. If these
rights have moral significance independent from their conduciveness to social utility,
and if curtailing the free operation of markets will limit individuals in their ability to
do as they please with their endowments and possessions, then any obligations we
have to protect the interests of the future may come in direct conflict with the
standing rights of those who currently exist. What is to be done when an individual's
right to the free use of her property comes in conflict with the interests of future
persons?

Some have argued that this is an easy question. Rights, they argue, have
a special moral status, and as a result, claims of right simply 'trump' claims of need,
utility, or interest. In fact, the view that claims of right serve to trump claims based
on considerations of well being is widely accepted by non-libertarians like Ronald
Dworkin\textsuperscript{162} and Judith Jarvis Thompson\textsuperscript{163} as well as by libertarians like Nozick\textsuperscript{164} and
Narveson.\textsuperscript{165} And while future persons may have some rights, as I have argued, it
seems clear that they do not have current rights to property. If the interests of future
persons merely represent utilitarian, or other non-rights moral considerations, they

\textsuperscript{162} Dworkin (1978).
\textsuperscript{163} Thompson (1986).
\textsuperscript{164} Nozick (1974).
\textsuperscript{165} Narveson (1988).
may simply be 'trumped' when they come in conflict with the property rights of current persons.

Property rights, in Hart's terminology\textsuperscript{166}, are 'special rights,' since they arise through conventions, agreements, and transactions between particular people. As Becker writes, "the existence and content of such rights is contingent on the particular history of the identifiable individuals who create them."\textsuperscript{167} Since future persons, as yet, have no histories, they cannot have any special rights of this sort. In general, property rights arise either as a result of specific contractual agreements among persons, or by discovery or invention, or from direct gift or bequest. Future persons are not yet here to contract for property, and while they may inherit property from those who currently exist, the things they will inherit are currently owned by other persons. If, as this suggests, future persons cannot now possess property rights against current people, then what is the status of their claims on resources in which people do have current property rights?

The question, we will find, is not an easy one. In spite of the fact that future persons do not have property rights, I will argue that they do have claims on some resources owned by present persons, and that these claims are at least as fundamental as the property rights with which they conflict. In cases of conflict, claims based on current property rights will \textit{not} always take priority over the claims of the future. The needs of future persons do constitute utility claims, but when

\textsuperscript{166} Hart, (1955).

weighed against claims and rights of present persons, they are not mere utility claims. In fact, I will argue, the status and validity of current property rights depends importantly on the way in which the institution of private property is likely to influence the welfare of future persons. To see why this is the case, we will need to consider some of the traditional lines of argument in support of the institution of private property.

6.2 Property and Ownership

As W.N. Hohfeld shown, rights are not simple atomic moral concepts on which to build a moral theory. On the contrary, rights are conceptually complex, and can be analyzed into more basic constitutive elements, like claims, liberties, and powers. In this respect, property rights are no different from other kinds of rights. To show that a person P has a property right in an object O is not, then, a simple task. First, it is necessary to analyze the elements of property rights in general, and to articulate the more basic normative relations that would constitute P’s property right in O. Then an independent argument must be given in support of each of these basic relations.

A.N. Honore has provided the most famous analysis of the basic normative relations involved in property rights. Honore’s analysis has been

168 Hohfeld (1919).

169 Hohfeld’s analysis includes more fundamental elements than those listed here. See Hohfeld (1919).
expanded by Lawrence Becker, who offers a list of thirteen constitutive elements of what he calls a right of "full-blown ownership." According to the Honore/Becker analysis, having a right of this kind entails:

1) The right (claim) to possess-- that is, to exclusive physical control of the thing. Where the thing is noncorporeal, possession may be understood metaphorically.
2) The right (liberty) to use-- that is, to personal enjoyment of the benefits of the thing (other than those of management and income).
3) The right (power) to the income-- that is, to the benefits derived from forgoing personal use of a thing, and allowing others to use it.
4) The right (liberty) to consume or destroy-- that is, to annihilate the thing.
5) The right (liberty) to modify-- that is, to effect changes less extensive than annihilation.
7) The right (power) to alienate-- that is, to carry out inter vivos transfers by exchange or gift, and to abandon ownership.
8) The right (power) to transmit-- that is, to devise or bequeath the thing.
9) The right (claim) to security-- that is, to immunity from expropriation.
10) The absence of term-- that is, the indeterminate length of one's ownership rights.
11) The prohibition of harmful use-- that is, one's duty to forbear from using the thing in ways harmful to oneself or others.
12) Liability to execution-- that is, liability to having the thing taken away as payment for a debt.
13) Residuary rules-- that is, the rules governing the reversion to another, if any, of ownership rights which have expired or been abandoned. This category includes rules as various as those for determining the reversions of rights on expiration of leases, for determining the heirs in cases where the power to devise or bequeath does not exist, for determining the disposition of property left by intestate deaths, and for determining the disposition of abandoned property.

The Honore/Becker analysis is not, and is not intended to be, a specification of necessary and sufficient conditions, such that all and only property rights include each of the elements of full blown ownership. Many theorists,

170 Becker, (1977) and (1980).
following Locke, believe that persons have ownership rights in their bodies, but not all of these would also hold that this right is liable to 'execution,' as in provision 12, for payment of an ordinary debt. Becker gives a somewhat more intuitive example: "A trust fund... can be one's property even though one does not have the right to manage it, consume the capital, or bequeath the income to others."\textsuperscript{171} Property rights, then, may be \textit{limited} to some degree. They may be less extensive than rights of 'full blown ownership' without ceasing to be property rights at all.

All property rights, however, include certain claims against the interference of others. If a person owns something, she must have claims against others' interference with her legitimate use of it. Similarly, it is commonly supposed that property rights are exclusive: if a person has a property right, she has a right (claim) to exclude others from using what she legitimately owns. One's "liberty to use" and to "possess" an object are not enough to support a property claim unless they also imply claims against the interference of others, and against others' claims to use that object. This exclusive feature of property rights was clearly articulated by Locke, who notes that the legitimate assertion of a property right by one person, to what previously was owned communally "excludes the common right of other men."\textsuperscript{172} Kant holds that this claim against the interference of others is the essential element of property and ownership: "...something \textit{external} would be mine only if I may assume that I could be wronged by another's use of a thing [without my consent]
even though I am not in possession of it."

Some writers have assumed that the exclusive aspect of property rights is universal and unconditional. That is, it embodies a claim against all other persons, and the priority of this claim in no way depends on the circumstances in which it is asserted. Such assumptions play an important role in Nozick's view, and the view of other libertarians who base their libertarian political theory on the absolute priority of negative rights to liberty and property. As will become clear, I do not believe that these assumptions survive careful analysis of the nature and source of property claims. As I will argue, the claims implicit in property rights do not apply in the same way to all persons and all situations, and they may not always take priority when they come in conflict with the claims of future persons. To see why this is so, we need to consider how property rights could legitimately arise. In this interest, we need to consider the influential theory of John Locke.

6.3 Building from Locke: Property and Initial Acquisition

Locke's project, in part, was to show how rights to private property could arise from a state of nature in which no one has such rights. It was important to Locke to show that property rights do not derive their justification from social or political institutions, since other theorists had used this premise as justification for a monarch's right to dispropriate his subjects at will. It was explicitly in response to

this view that Locke wrote the Two Treatises on Government, in which he argued that property rights could arise naturally from a pre-social state of nature.

Locke’s famous account of property and initial acquisition first appeared in 1689, and it is legitimate to ask why we should look to it for assistance in developing a contemporary theory of property, or to discover the nature of current property claims. After all, we are not in the state of nature, and it is not clear that anyone ever has been. It is extremely unlikely, one might argue, that actual property rights came into existence in a way consistent with the strictures of Locke’s theory. And if actual property claims do not have a Lockean pedigree, then what reason do we have for believing that we can discover anything about the validity of actual property claims by looking at an idealized theory like Locke’s? Locke’s assumptions may be quite different from our own, and many aspects of his analysis have seemed questionable. So, one might argue, Locke’s theory cannot tell us anything about the nature or justification of actual property claims made in the real world. Considerations like these have led some writers to regard Locke’s theory as outdated and irrelevant.174

I believe that there are good reasons to look to Locke, in spite of the fact that we may not accept all of the assumptions of his work, nor the details of his analysis, and in spite of the fact that his theory clearly does not describe an accurate historical account of the evolution of actual property claims. There are a number of reasons for this: First, virtually all subsequent discussions of acquisition and

property rights start with Locke’s view. Because of this, Locke’s theory represents a deeply entrenched aspect of the theory of property implicit in our legal system as well as our philosophical tradition. Second, as I will argue, Locke’s theory can plausibly be interpreted as being based on a set of key moral notions, the essential members of which, I will argue, should still guide our thinking on the issue of property. In the end, the proof is in the pudding: I hope that my argument will itself show that we can gain an understanding of the nature of current property claims by considering the conditions of legitimate initial acquisition described by Locke.

The main aspects of Locke’s account are well known: according to Locke, individuals have property rights in their own bodies, which rights imply a duty in others not to interfere. Self-ownership, according to Locke, implies ownership of one’s labor. So when people ‘mix’ their labor with external objects, they acquire claims in these objects:

Whatsoever then [a person] removes out of the state that nature hath provided, and left it in, he hath mixed his labor with, and joined it to something that is his own, and thereby makes it his property.\(^\text{175}\)

A person’s right to exclude others from using what she has legitimately appropriated is extension of her right to exclude others from interfering with her use of her own body.

There have been many objections to the notion of self-ownership as well as Locke’s claim that acquisition results from mixing one’s labor with things in the commons. About the former, Proudhon writes "to tell a poor man that he has

property because he has arms and legs... is to play upon words, and to add insult to injury.\textsuperscript{176} And regarding the latter, Nozick famously suggests that mixing what we own with what we don't might as easily be understood as a way of losing property rather than gaining it: "If I own a can of tomato juice and spill it into the sea so that its molecules (made radioactive, so I can check this) mingle evenly throughout the sea, do I thereby come to own the sea, or have I foolishly dissipated my tomato juice?\textsuperscript{177} Sanders suggests that Locke's view may be as arbitrary as the suggestion that "'One justly acquires title to whatever land one can cover with little chocolate Easter-bunnies;' or 'One acquires title to whatever one can run around three times without stopping, so long as one is dressed in a frog costume and does not stop whistling the love-death duet from \textit{Tristan and Isolde}' (perhaps four times would be more appropriate); or finally, the relatively simple 'One acquires title to whatever one is first to hop across blindfolded.'\textsuperscript{178}

As the subsequent discussion should make clear, I believe that these critics overlook important features of Locke's own argument. However, it is not my primary purpose here to defend Locke from his critics, but to gain an understanding of the elements of property rights. In this interest, I will critically examine Locke's

\textsuperscript{176} Proudhon (1966), cited in Thompson (1976).

\textsuperscript{177} Nozick (1974) p. 175.

\textsuperscript{178} Sanders, (1987) pp. 390-391. Sanders goes on to consider reasons why Locke's criterion might not be similarly arbitrary, but finds himself at a loss.
view, and show that it can be interpreted and reconstructed as reflecting a limited set of quite plausible moral principles. I will then argue that these principles have important implications concerning the nature and normative structure of current property rights, particularly property rights in productive natural resources like land, in which future persons have important interests.

Much has been made of the fact that Locke starts with common ownership, unlike other state of nature theorists like Hobbes and Nozick, who start with no ownership at all. While there is a significant difference between these two alternative conceptions of the state of nature, the difference between these two starting points is not as great as it might seem. According to a Hobbesian view, the state of nature is a state in which "everyone has a right to everything." This, according to Hobbes, is the fundamental law of nature. The usual interpretation of this law is that in the state of nature, every person is at liberty (in Hohfeld's sense) to do as she likes. Since no moral laws apply to human relations in the Hobbesian state of nature, the liberties people have are not accompanied by any claims against the interference of others. So in a Hobbesian state of nature, everyone has a 'right' (that is, a bare liberty) to appropriate what she will. But before the institution of private and exclusive ownership rights, the situation is quite similar in a Lockean state of nature. It is difficult to see what can be made of the claim that everyone owns everything. It was earlier suggested that ownership of a thing implies some right to exclude others from the use of it under at least some circumstances. But as

in the Hobbesian state of nature, no such claims against others seem to exist in Locke's commons. The condition of common ownership is similar, in this respect, to the condition of no ownership: in either case persons seem to have no initial claim against the interference of others.

The difference between common ownership and no ownership becomes important, however, in the context of exclusive initial appropriation. In appropriating something from the state of nature, it becomes my property only if I thereby gain the right (in this case, a Hohfeldian claim) to exclude others from its use. According to Hobbes, there are no prior moral requirements which could provide normative reasons against such appropriation. But for Locke, there are prior moral requirements implicit in the common ownership rights of others. If goods are owned in common in the state of nature, then it would seem necessary to get permission from others before exclusive appropriation could be legitimate. But clearly it would be impossible to get permission from literally everyone. This creates a problem: legitimate appropriation seems to require the impossible. This problem is unique to theories of initial appropriation which begin with common ownership, and it has led some to conclude that Locke cannot have meant what he said:

If Locke had really thought that resources were communally owned before private acquisition, then he would have been driven to the conclusion that everyone's permission must be asked before an individual's labor was mixed with such resources. Since this conclusion plays no part in his theory, he cannot have thought that resources were communally owned in the first place.180

Can Sanders have failed to notice that Locke addresses this issue

specifically in the Second Treatise? There he considers the case of a person who has gathered apples or acorns in the forest:

And will any one say, he had no right to those acorns or apples, he thus appropriated, because he had not the consent of all mankind to make them his? Was it a robbery thus to assume to himself what belonged to all in common? If such a consent as that was necessary, man had starved, notwithstanding the plenty God had given him. We see in commons, which remain so by compact, that it is the taking any part of what is common, and removing it out of the state nature leaves it in, which begins the property; without which the commons is of no use. And the taking of this or that part, does not depend on the express consent of all the commoners. The grass my horse has bit, the turfs my servant has cut, the ore I have digged in any place, where I have a right to them in common with others, become my property, without the assignation or consent of anybody."

Locke recognizes here that the assumption of common ownership creates a presumption in favor of the claim that permission must be given by all before anything can be exclusively appropriated from the commons. This presumption is rebutted in the case at hand, however, in part because the cost of gaining everyone's permission is too great, but also because some property rights are necessary for survival. Initial appropriation is justified in this context by universal necessity: if the goods of the earth are to be useful to anyone, then it must be possible for particular individuals to appropriate them. "The fruit or venison, which nourishes the wild Indian, who knows no inclosure, and is still a tenant in common, must be his, and so his, i.e. a part of him, that another can no longer have any right to it, before it can do him any good for the support of his life."182 In this regard, all are in the same


situation. Things in the commons are of no use to anyone unless it is possible for individuals to use them, but use implies certain exclusions: if I eat an apple, then it will no longer be there for others to use. It must be possible to appropriate, else the virtuous among us (those unwilling to 'appropriate inappropriately') would starve amid plenty. The requirement that permission from all commoners be acquired before appropriation would make appropriation impossible. Therefore, it is not necessary to gain the consent of all before appropriating.

As I said earlier, I believe that there is a significant difference between state of nature theories which start with communal ownership and those which start with no ownership. Locke's own reasons for starting with common ownership are strongly associated with his belief that God gave the earth to all human beings-- an assumption many of us are unable to swallow. But there are also important aspects of the theory of initial acquisition which will not depend on the difference between communal ownership and absence of ownership. None of the central claims I hope to defend here depends in any way on the assumption that unappropriated goods are the common property of all.

If appropriation were permissible only in conditions of extreme necessity, such that without it we would "starve amid plenty," then very little appropriation indeed would be justifiable. A reasonable theory of property should be capable of justifying at least some appropriation of goods required for less basic needs than bare survival, else property could legitimately be acquired only by those who are at
death's door. As Locke develops his view, it is, of course, much more 'liberal' than this in the appropriation it permits. According to Locke, initial appropriation is allowable provided that two conditions are met: First, a person may not rightly appropriate more than she can use before it spoils. This would prohibit, for example, hoarding ripe tomatoes and allowing them to rot in the Arizona sun. Second, and most importantly, appropriation must be done in such a way that there is "enough and as good" left for others. The first of these conditions is usually called "the spoilage proviso." For our purposes here, however, it is the second which is crucial. Whenever I refer simply to "the proviso" it should be understood that I am referring to the second condition.

6.4 Locke's Proviso

Locke includes the proviso in the first statement of his labor theory of property acquisition. He writes:

§.27. Though the earth, and all inferior creatures, be common to all men, yet every man has a property in his own person: this nobody has any right to but himself. The labour of his body, and the work of his hands, we may say, are properly his. Whosoever then he removes out of the state that nature hath provided, and left it in, he hath mixed his labour with, and joined to it something that is his own, and thereby makes it his property. It being by him removed from the common state nature hath placed it in, it hath by this labour something annexed to it which excludes the common right of other men: for this labor being the unquestionable property of the labourer, no man but he can have a right to what that is once joined to, at least where there is enough and as good left for others."

Here, as in other places in the Second Treatise, the proviso seems to be included almost as an afterthought. The central argument here is the highly
questionable argument from self-ownership." But the context here also implies that Locke regards satisfaction of the proviso as a sufficient, though perhaps not a necessary condition for appropriation by labor mixing: such appropriation is justified when the proviso is satisfied, even if there are other contexts in which mixing one's labor with unowned goods would not create exclusive property rights.

The best way to understand the significance of labor in the creation of property rights may be that mixing one's labor with an unowned object creates a presumptive claim on that object. This presumption can be rebutted only if others have an adequate reason for claiming the object or interfering with one's appropriation of it. Clearly Locke believed that the proviso provides ground for the obligation to respect legitimate property claims:

§.34. God gave the world to men in common; but since he gave it them for their benefit, and the greatest conveniencies of life they were capable to draw from it, it cannot be supposed he meant it should always remain common and uncultivated. He gave it to the use of the industrious and rational, (and labour was to be his title to it;) not to the fancy of covetousness of the quarrelsome and contentious. He that had as good left for his improvement, as was already taken up, needed not complain, ought not to meddle with what was already improved by another's pains, which he had no right to, and not the ground which God had given him in common with others to labour on, and whereof there was as good left, as that already possessed, and more than he knew what to do with, or his industry could reach to. 186


184 See also Locke (1980) p. 21.

185 For objections to the idea of appropriation by labor-mixing, see Thompson (1976) and Sanders (1987).

It is not, as many seem to have thought, simply that the appropriator has mixed her labor with her property, and thus "annexed" the property in question to herself—by itself, that might have as little relevance as covering the property with "little chocolate Easter bunnies," to echo Sanders’ imaginative example. Nor is it simply that labor adds value to things removed from the commons, though Locke also uses this claim to support his theory. On the strongest and most plausible interpretation of Locke’s theory (and why consider any other?) the argument from labor-mixing and the argument from added value are neither necessary nor sufficient conditions for legitimate appropriation. Rather, as I will argue, they are best understood as providing support for Locke’s assertion that there are conditions under which people have a duty to respect the appropriation of others, and to forbear from interfering with the use of what has been appropriated. In order to show how property rights could arise from a state of nature, this is all Locke needs to show. An example may help to clarify this:

Two children are alone in an endless sea of identical, unowned or commonly owned marbles. Each needs a limited number of shiny marbles, but those underfoot are dull. The First Child picks up one among the innumerable marbles underfoot, and polishes it on her sleeve, so that it shines. Seeing the shiny marble in his companion’s hand, the Second Child snatches it from her, and puts it in his pocket.

Is this a robbery? Only if the Second Child had a duty to respect the appropriation of the First. What legitimate reason could this Second Child have for grabbing the marble his companion shined rather than picking up another marble and
shining it himself? The only difference between this marble and the others is that it shines, and he is perfectly capable of polishing one of the others at his feet. If the labor of polishing it improved the marble, then snatching it away simply deprives the First Child of the fruits of her labor. If the labor made the marble worse, or at least does not improve it, then the only reason he could have for snatching it away would be jealousy or spite. In neither case does he have a claim on the polished marble which can override the First Child's weak presumptive claim, based on the fact that she mixed her labor with it, and perhaps by the mere fact that she has it in her hand. As many have pointed out, labor-mixing creates at best only a weak, presumptive claim to the object with which labor is mixed. But as long as the proviso is satisfied, no one else will have a claim capable of rebutting this presumption. When the proviso is satisfied, this claim can constitute a legitimate property right.

The significance of labor-mixing, on this reading, is almost negligible. The only role this notion plays is to support a presumptive claim (in this case quite a weak one) on behalf of the appropriator. It is arguable that a presumptive claim of this sort (though perhaps an even weaker one) is created by mere physical possession. Perhaps even covering the object in question with chocolate Easter-bunnies would

187 Nozick (1974 p. 175) considers the possibility that labor might decrease rather than increasing the value of an object. He imagines a person "spraying pink enamel paint on a piece of driftwood."

188 Nozick (1974), Sanders (1987), Thompson (1976), to name only a few.
create a weak presumptive claim of some sort, though such a claim might be easily overridden. Locke himself discusses a range of other ways in which one may acquire a presumptive claim of this sort: The claim of need, for example, plays such a role in the passage we considered earlier. Elsewhere Locke refers to the idea that all may benefit from some kinds of appropriation, and seems to point toward (without ever clearly articulating) an argument to the effect that if everyone would, if consulted, consent to a given appropriation then this creates a presumptive property claim.

The function of the proviso, on this interpretation, is merely to stipulate conditions under which this presumptive claim is not over-ridden by the competing claims of others. When the proviso is satisfied, no one else’s competing claims will be weighty enough to override the presumptive claim of the appropriator to appropriate.

But even if one agrees that the proviso guarantees that no one will have a weighty enough competing claim, it is not clear that the proviso is a reasonable limitation on initial appropriation of goods. The earth is finite. We do not live in an endless sea of unappropriated goods, waiting to have labor mixed in. Is it possible to appropriate land or other goods in the real world, and still to leave enough and as

189 See Locke (1980) p. 23, §37. The suggestion that mutual advantage creates only a presumptive claim does not come from Locke, but makes the Lockean view more palatable. Elsewhere, (p. 29, §50) he argues that this claim is based on tacit consent. Those who reject the notion of tacit consent as ground for the obligation to uphold political institutions and to obey the law, however, will find no further justification for the idea here.
good for others? Locke seems to have thought so. Further, his reason for thinking this seems to have been a false belief that the world is far too extensive ever to be fully exploited by its population:

§.33. Nor was this appropriation of any parcel of land, by improving it, any prejudice to any other man, since there was still enough, and as good left; and more than the yet unprovided could use. So that, in effect, there was never the less left for others because of his inclosure for himself: for he that leaves as much as another can make use of, does as good as take nothing at all. No body could think himself injured by the drinking of another man, though he took a good drought, who had a whole river of the same water left him to quench his thirst: and the case of land and water, where there is enough of both, is perfectly the same. 190

At any point in time, a river carries a finite amount of water, but the amount of water one might drink from a river is just insignificant. There is effectively the same amount left after appropriation as before. But is it possible that Locke could have believed that the same analogy applied to land? Locke writes:

...I dare boldly affirm, that the same rule of propriety, (viz.) that every man should have as much as he could make use of, would hold still in the world, without straitening any body; since there is land enough in the world to suffice double the inhabitants... 191

Locke seems to have believed that the amount of land in the world was so extensive that we would never be able to use it all. But it is far from clear that Locke’s pronouncement is still true of our world, if indeed it could ever have been true. As Malthus pointed out, the world is finite, and if population growth increases at a sufficiently rapid rate, there will not be enough. Some argue that we are in, or

at least close to, such a situation now. Many scholars have argued, in this vein, that
the proviso is an impossible requirement, and that it cannot be met.\textsuperscript{192} David
Schmidtz claims that the view that Locke's proviso is an impossible requirement
"comes as close to reflecting a genuine consensus as views in political philosophy
ever get."\textsuperscript{193} Since the earth is finite, any appropriation at all makes the sum total of
unappropriated land smaller, so there is less for others to appropriate. This leads to a
'zipper' argument, which threatens to undermine the legitimacy of any appropriation,
since eventually there will be no way to leave 'enough and as good' for others. The
ultimate illegitimacy of later appropriation 'zips back' to make the first act of
appropriation similarly illegitimate. While this 'zipper' argument has been
articulated by many, Nozick's version is perhaps the most familiar:

Consider the first person Z for whom there is not enough and as good left to
appropriate. The last person Y to appropriate left Z without his previous
liberty to act on an object, and so worsened Z's situation. So Y's
appropriation is not allowed under Locke's proviso. Therefore the next to
last person X to appropriate left Y in a worse position, for X's act ended
permissible appropriation. Therefore X's appropriation wasn't permissible.
But then the appropriator two from last, W, ended permissible appropriation,
and so, since it worsened X's position, W's appropriation wasn't permissible.
And so on back to the first person A to appropriate a permanent property
right.\textsuperscript{194}

\textsuperscript{192} Schmidtz (1991) cites a number of people who have argued that the proviso is
unreasonable and impossible to fulfill, including Thompson (1976), Waldron (1979),

\textsuperscript{193} Schmidtz (1991) p. 18. Schmidtz himself does not accept the consensus view.

Since there will be some point after which appropriation would not leave enough for others, no initial appropriation is consistent with the proviso. How then can we make sense of the right to property? If there is no way initial appropriation could have been justified, then our actual claims, as descendants of prior illegitimate takings, cannot be justified either. This problem has led scholars to look for an alternate interpretation of the proviso, which would allow some appropriation, while still limiting indiscriminate or unjustified appropriation.

6.5 Including Future Persons Under the Protection of the Proviso

The problem may be even worse than Nozick recognizes. How many persons, and which ones are included among the ‘others’ for whom enough and as good must be left? Earlier I argued that the actions of current persons may sometimes harm, and violate the rights of future persons. If the intent of the proviso is to protect people from the unjustified appropriation of others, then it should provide protection for future as well as present persons. But the number of future persons is potentially infinite. If the zipper argument is sound, then there may be no way to satisfy the proviso even for a finite population. John Sanders raises this question in formulating what he takes to be a decisive argument against accepting any version of the proviso. Who, he asks, are the members of the class of persons for whom "enough and as good" must be left?

Is it just the presently living members of your society? All presently living people? Why one choice rather than another? What about future generations?
Perhaps there is no need to consider the unborn in making decisions about what to acquire, but this position requires some defense if justice demands that other people be left "enough" land after you have mixed your labor with some of it. What possible argument could at the same time require that the present generation have scruples about leaving enough for one another while shrugging off such concern for future generations? This is not necessarily a question of "rights of the unborn." It is a question of what is just, and if it is the preservation of humanity, or of individual persons, that requires that enough be left to one's peers, then it is hard to see why that same argument would not require similar consideration concerning people who have not yet been born.

But if you consider all future generations, and if you must leave enough and as good for every future human being, then it is hard to imagine that the Proviso would allow you to mix your labor with much more than an infinitesimal slice of land. If not all future generations, then which ones? And why those in particular?

Sanders argues that there are no good reasons for excluding future persons from the class of those whom the proviso protects. The discussion in earlier chapters of this essay supports Sanders' claim. Since the actions of currently existing persons can set back the interests of future persons, and under some circumstances can harm them, they are, in this respect, on the same moral footing as presently existing persons. Perhaps the strongest argument in favor of the proviso is that it is necessary if initial appropriation is to avoid unjustifiably harming and worsening the position of others. The minimal moral requirement against harming others, combined with the argument that future persons are among those who can be harmed, and whose interests can be set back by present appropriation, provide a strong presumptive case in favor of including future persons under the protection of the proviso: the same basic moral principle (the prohibition of harm) supports the claim

that we should protect both present and future persons. The important claim here is not that we have any evidence that Locke himself believed that the proviso should apply to future as well as present persons, rather that a well grounded contemporary Lockean theory should include protections for future as well as present persons.

But the proviso was already in trouble without this additional strain. If, as Nozick’s argument suggests, it is impossible to leave enough and as good for a finite number of currently existent persons, how can we possibly hope to leave enough and as good for a potentially infinite number of future persons as well? Sanders believes that this will be impossible. He can see no non-arbitrary reason for excluding future persons from the class of persons protected by the proviso, but sees no way to satisfy the proviso if future persons are included. On this ground, he argues that the proviso is just too stringent a requirement to put on appropriation. We have no alternative, he believes, but to abandon it altogether, else we will be forced to conclude that all appropriation is unjustified.

But Sanders’ argument is too quick. Before we will be justified in concluding, with Sanders, that the proviso should be dropped, we need to consider alternative interpretations of the proviso which might be capable of solving the problem. An adequate interpretation should first, be able to explain why at least some initial appropriation is justified, and in this interest it must provide a response to Nozick’s ‘zipper’ argument. Second, it must provide adequate and appropriate safeguards for the interests of those whom the proviso is intended to protect. And finally, it should be based on moral principles which are as well supported and
uncontroversial as possible. In what follows, I will consider alternate interpretations of the proviso, and suggest that there is a way to protect people from having their interests unjustifiably set back by the appropriation of others without prohibiting appropriation altogether.

As I mentioned earlier, my aim is not to defend Locke’s view against his critics, but rather to develop a more plausible Lockean view. Nothing in my argument depends on the textual adequacy of my interpretation of Locke. However, I will also argue that there is reason to think that the view I will defend is consistent with Locke’s text, and may well represent a sympathetic reading of Locke’s own view. But Locke’s discussion in the Second Treatise is quite rich, and there is also good reason to think that he did not systematically analyze the various principles which he uses to support his argument. This lack of systematic analysis has led, in part, to a variety of misinterpretations of his view, and as many have argued, it may reflect some confusion on Locke’s part as well. On this interpretive issue, the reader will have to decide for herself.

6.6 Two Hopeful Observations

At this point in the argument, prospects for the Lockean theory of property may seem grim. It may be simply impossible to meet Locke’s requirement that enough and as good must be left for others. However, the arguments considered so far fail to recognize two important features of the institution of private property. The first feature is that appropriated resources may be productive. The second is that
the institution of private property, under some circumstances, provides people with an economic incentive to protect and to conserve the resources they own. Each of these features can provide an argument in favor of the view that some appropriation can, in principle, leave the overall stock of resources undiminished. This can be true even in circumstances in which an indefinite and potentially infinite number of persons have morally significant interests in a finite amount of appropriable resources. If this argument succeeds, it may undermine Nozick's zipper argument, even when future persons are considered to be among those protected by the proviso.

6.6.1 First Observation: Productivity of Resources

If I use what I appropriate in such a way that it produces benefits for others, then they are, in that respect, better off than they would have been had I not appropriated. Cultivated land is often more valuable to society as well as to the individual than it would be if it were left uncultivated. This is not, of course, to deny that there are cases where uncultivated land is more valuable than cultivated. It is unlikely that it would benefit humankind, for example, to turn the Amazon rain forests into farmland, or to cover the Arizona desert with condominiums. The point is that there are some cases where appropriation can be done "without straightening anyone" not because there is still more land for them to appropriate, but because appropriation provides overall social benefits. 196 Locke clearly recognized this:

196 Or, as economists would say, positive externalities.
...let me add, that he who appropriates land to himself by his labour, does not lessen, but increase the common stock of mankind: for the provisions serving to the support of human life, produced by one acre of inclosed and cultivated land, are (to speak much within compass) ten times more than those which are yielded by an acre of land of an equal richness lying waste in common.\(^{197}\)

Given the productivity of resources, Nozick's zipper argument does not show that a literal interpretation of the proviso would prohibit all initial appropriation. For those who appropriate will realize profits from working their land, and they may be able to compensate others whose interests may have been set back by the initial appropriation of common resources. When Eve appropriates a plot of land, and it is no longer available for Adam to appropriate, but Adam may be no worse off provided that Eve fully compensates him for his loss. If Eve uses the appropriated land to grow beans or potatoes, she may be able to do this by providing Adam with food. One way to leave non-appropriators with enough and as good is by compensating them for the initial appropriation. Provided that what one gets in compensation is enough, and is as good as what was initially appropriated, it may be possible to satisfy even the strictest interpretation of the proviso.\(^{198}\) In fact, there may be circumstances in which appropriation and production may be the only way to insure that others will have enough.

\(^{197}\) Locke (1980) p. 23.

\(^{198}\) Joel Feinberg has pointed out that this turns the proviso into the "first crude formulation of a principle of tort law." See also Coleman (1992), p. 342 on compensation and respect for individual rights in tort law.
6.6.2 Second Observation: Protection by Propertization

When a person owns something, she has a strong motive to protect it, and prevent it from being destroyed. But when resources are held under common ownership, owners may be unable to protect their holdings, since it may be individually rational for each owner to get maximal advantages before the commons is destroyed. This is the 'tragedy of the commons,' described by Garrett Hardin,\(^9\) and it really is just a special application of the problem of public goods. When pasture land is held in common, each commoner will do best if she grazes the maximum number of cattle she can, but if all do what is in the best interest of each, then the pasture will be grazed beyond its carrying capacity, and all will be worse off. This is a frequent problem in our world. Schmidtz cites a poignant example:

...the coral reefs of the Philippe and Tongan islands are currently being ravaged by destructive fishing techniques. Where fishermen once used lures and traps, they now pour bleach (i.e. sodium hypochlorite) into the reefs. Partially asphyxiated, the fish float to the surface and become easy prey. Unfortunately, the coral itself suffocates along with the fish, and the dead reef ceases to be a viable habitat. ("Blast fishing," also widely practiced, consists of using dynamite rather than bleach.) What goes through the minds of these fishermen as they reduce some of the most beautiful habitats in the world to rubble? Perhaps some of them think, quite correctly, that if they do not destroy a given reef, it will shortly be destroyed by someone else, so they might as well be the ones to catch the fish.\(^{200}\)

All would be better off if no one practiced blast or bleach fishing, since then the reefs would remain a sustainable environment for the fish these people all

\(^9\) Hardin, (1968).

\(^{200}\) Schmidtz (1990) p. 513.
need to survive. But given that the reefs are being ravaged anyway, each individual has the strongest motive to get as much as she can before they are gone. Unfortunately, the best way to do this is to blast or bleach the reefs for oneself. If the situation continues, soon there will be no reefs left for the subsequent generations of Phillipinos and Tongans who will then be unable to support themselves in the traditional ways. Nor will the reefs be there to attract an economy of tourism to the islands, cutting off yet another way which they might have benefited future inhabitants of the islands.

The underlying problem, we are encouraged to conclude, is that no one has private property rights in the reefs, and because of this, no one has a special interest in protecting them. While it may be impossible to assign individual property rights in some resources, there are at least some cases for which commons tragedies can be avoided by the institution of individual rights. The incentive structures which exist in the context of commonly owned and unowned resources, may explain as David Johnson puts it, why "whales and turtles, but not herefords and hogs, are becoming extinct:"

The key to private conservation of resources is private ownership, if it is feasible. If private goods are not owned by individuals, private market forces cannot work because no one can reap direct benefits from conservation. If resources are privately owned, there are strong forces working toward the efficient intertemporal utilization of resources. Unfortunately, there are many resources that are not subject to private market ownership. It is too costly to assign and defend private property ownership rights to such resources as highly migratory species of fish in the ocean, so their use needs to be restricted through political market decision making which might involve

In the case of the Tongan reefs, it may be that the only way to preserve a precious resource in which future persons have a significant stake is to institute private property rights in it. If an individual owns a limited area of the reef, and has exclusive fishing rights in that area, then she will have a strong incentive to protect it and guard it against the destruction of others. In such circumstances, the only way to guarantee that the interests of future generations will be protected may be to institute property rights. However, this does not by itself show that we have an obligation to appropriate, as Schmidtz claims. We have such an obligation only if we have an obligation to protect the interests of others, and in this case, the interests of future persons. A more modest conclusion would be more appropriate: the argument shows not that there is an obligation to appropriate, but that appropriation under such circumstances is permissible, since the protection of the interests of future persons would provide relatively strong grounds for a presumptive property claim.

Some advocates of what has come to be called "free market environmentalism" have argued that propertization will always be the best way to protect resources for future generations. However, the argument presented here

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203 Under some circumstances, public ownership might be capable of accomplishing the same goals. But see Taylor (1992) for a powerful list of arguments against the claim that public institutions will be able to manage such resources well.

204 For an excellent discussion of free market environmentalism, including
underdetermines this radical libertarian conclusion, since it has not yet been shown that propertization will be better than other policies for protecting the interests of the future.

6.7 'Worsening' and the Paretian Interpretation

The hopeful observations above indicate that there are circumstances under which it would be possible for people to appropriate without, overall, leaving others worse off. Given that the proviso is intended to protect people from the appropriation of others, this suggests an alternative version of the proviso: on this interpretation, appropriation is justified provided that no one is made worse off by it. This version is recommended by Geoffrey Miller\textsuperscript{205} and Robert Nozick,\textsuperscript{206} among others. Our primary reason for considering it, however, is that this interpretation has seemed to many the most plausible and least controversial way of developing a Lockean theory. One reason for this is that appropriation which makes no one else worse off seems inoffensive. No one needs to be protected from such appropriation, so it seems uncontroversial to present this requirement as a sufficient condition for the justification of appropriation. Further, this interpretation has at least some support from Locke's text as well as prima facie support from common sense: Locke

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\begin{itemize}
\item \textsuperscript{205} Miller, (1987).
\item \textsuperscript{206} Quite a complete bibliography, see Taylor (1992).
\end{itemize}
clearly thinks that justified appropriation will not "straighten" anyone, and that when such appropriation takes place there really will not be less left for others. I will not dispute the claim that appropriation which makes no one worse off is justified. But I will argue that this is not a necessary condition for justified appropriation. I will argue that there are circumstances in which appropriation is justified even though some people will be worse off as a result.

In considering this interpretation, we must be careful to analyze the sense of "worse off" relevant in this context. For after appropriation, others may well be worse off in that they can no longer use what has been appropriated. If a person is worse off in the relevant sense merely because she can no longer appropriate what once she could, then this version of the proviso will also be subject to the zipper argument. When does appropriation make others worse off in the sense prohibited by the proviso?

Miller argues that the proviso can best be interpreted as a two-step principle. First, he argues that the proviso limits each person's initial appropriation to her pro rata share. That is, for a state of nature populated by N persons, each person is entitled to appropriate 1/Nth of the available resources. Were it not for the existence of future persons, that alone would be sufficient to avoid the zipper argument. But Miller recognizes that there are circumstances in which appropriation of more than 1/Nth would be permissible. According to Miller, appropriation of

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207 See especially §31 in the *Second Treatise* Locke (1980).

208 This assumes that all plots of land are equally valuable, which may not be the case. In such cases Miller recommends that appropriated parcels should be
more than one's pro rata share is permissible provided that everyone whose interests are set back by this more extensive appropriation is fully compensated for the loss. Miller claims that this interpretation is consistent with Locke's intention, and also that it reflects the economic requirement of pareto efficiency:

The effect of the proviso is to require that the transfers of excess property (that is, property in excess of the appropriator's pro rata share) out of the commons into private hands is permitted if the state of affairs resulting from the transfer is pareto superior to that which subsisted before. Transfers will be permitted if they result in at least one person being made better off and no one being made worse off than he or she was before. Transfers that are ruled out by the Proviso are those that are pareto-inferior, in that even though the appropriator may be better off as a consequence of his or her action, others will be worse off.  

209 Miller (1987) p. 410. Actually Miller seems to waffle between the pareto criterion and a quite different criterion of overall social benefit. Later on the same page he writes: "It is permissible under the law of nature to acquire unowned property by mixing one's labor with it, so long as the value of the property that one has taken in excess of one's pro rata share is less than or equal to the benefits to others that flow from the appropriation of this excess land." But unless those who suffer costs as a result of excess appropriation are the same people who realize the resultant social benefits, this second formulation would permit appropriation which failed to satisfy the pareto criterion. Even within this quote, Miller fails to recognize that it is one thing to prohibit appropriation which results in a pareto inferior distribution, and quite another to require that appropriation result in a pareto superior distribution. In my view, the strongest version of the paretian proviso only prohibits pareto inferior moves without requiring that post-appropriate distributions be
Like many advocates of the economic analysis of Law, Miller regards the pareto criterion as the basic principle which defines the appropriate scope and structure of property rights.

First, we need to consider the first portion of Miller's analysis: the claim that *ceteris paribus*, one is justified in appropriating a *pro rata* share of the commons. This first stage criterion certainly does not reflect the pareto criterion. For clearly there are describable circumstances in which appropriation of one's *pro rata* share might be worse for others. For example, consider a state of nature containing a 20 acre commons, and ten participants. If sustainable ranching requires the existence of a 20 acre commons, and if nine of the ten participants in the state of nature would prefer to ranch, then their interest in doing so is not merely set back, it is blocked if the tenth participant fences in a two acre plot to grow beets. Beyond this, their situation seems worse simply because the commons is smaller than it previously was, limiting their opportunities to use what previously they were free to use. I would be much worse off, and in a very direct way, if my favorite hiking trails were appropriated, even if there were other areas where I could still hike. While many may find it morally unobjectionable to suppose that the beet farmer in the example above has a right to fence in her two acre lot, the proviso, as we have been interpreting it, would prohibit such appropriation.

 pareto superior.
The paretian interpretation of the proviso seems more obviously inadequate when we consider the way in which the proviso protects future persons. In this context, the problem is not that the proviso permits harmful appropriation, but that it prohibits appropriation which may be necessary if the interests of future persons is to be adequately protected. The paretian interpretation of the proviso would prohibit, for example, appropriating coral reefs in order to guard them against blast and bleach-fishing. For it may be, in these circumstances, that those who would otherwise blast-fish will be made worse off if the reefs are protected. This would be true if either 1) there is not enough reef available for each person to appropriate a sustainable portion of reef, or 2) the deleterious economic effects of blast-fishing are long-term costs, and will not strike until the following generation arrives. Under these conditions, appropriation of the reefs would be prohibited by Miller's proviso, even if they were the only way to preserve the reefs for future generations.

It is possible to describe circumstances under which 1) appropriation and propertization are the only acceptable way to preserve renewable resources for future generations, 2) appropriation would leave some people worse off than otherwise they would be (those who would benefit in the short run from destruction of a renewable resource), but 3) none of those who would be worse off have a morally significant claim against those who would appropriate and protect the resource in question. In such circumstances, any paretian interpretation of the proviso would prohibit
appropriation. If we accept Miller's interpretation, then it seems to follow that we must sit by and do nothing while the great ocean reefs are destroyed. To many, this will suggest that Miller's criterion is just too strong. The fact that appropriation makes some worse off merely because they are no longer free to benefit from the needless and self-defeating destruction of a renewable resource is not a good reason to prohibit it.

Other ways of making others worse off may also be irrelevant from the moral point of view. For example, each beet farmer must consider whether or not to grow beets each season. The choice to grow beets might make other beet farmers worse off if the price of beets dropped (even a very little) as a result. But an adequate interpretation of the proviso should not consider this cost to be morally significant. How can we determine which ways of making others worse off are relevant? Nozick takes a short, and rather vague step toward a more adequate criterion. According to Nozick, a person cannot claim to be worse off in the relevant sense merely because she can no longer use freely (without appropriation) what once she could.210

This approaches a more adequate account, but without a clearer criterion telling us when people are worse off in the relevant sense, it is very little help. Nozick only tells us when others are not worse off in the relevant respect, not when they are. There are two ways to interpret Nozick's enigmatic account: either 1)

People are not worse off in the relevant respect if they can no longer use freely what once they could, or 2) People are not worse off in the relevant respect if the only respect in which they are worse off is that they can no longer use freely what once they could.

It should be obvious that Nozick can not have intended the first of these interpretations. It would imply that people are not relevantly worse off as long as the fact that ‘they can no longer use freely what once they could’ is among the ways in which they are worse off. So it would seem to follow that appropriation which 1)leaves me unable freely to use my arms and legs, though previously I was able to use them and which 2)also had the undesirable (for me) effect of detaching my arms and legs from my body, does not leave me worse off in any relevant respect. This can hardly be what Nozick intended.

So Nozick must have meant that appropriation is permissible if the only way it makes others worse off is in that they cannot now freely use what previously they could. But this is also clearly inadequate. For any appropriation is bound to affect the interests of others in a variety of different ways. If someone appropriates my favorite hiking trail (or, for what may be a better example, a hiking trail I have never used, but firmly intend to use in the future), I can no longer freely use what once I could, but this does not exhaust the ways in which I am worse off. For example, it might simply make me sad. Under some circumstances, I may be worse off simply because I know that such a hiking trail is no longer available for me (or my children) to use, even though none of us ever uses it. Current economic theorists
sometimes call this kind of valuation 'existence value.' Rain Forests, for example, are sometimes said to have 'existence value,' since people are willing to pay to preserve them even though they themselves may never reap concrete benefits from this preservation.  

In the case of the appropriated hiking trail, the legitimacy of the appropriation seems to depend on the relative weight of the various claims different persons have to the land in question. In the example described, my claim against the person who would appropriate my favorite trail is based in part on my prior use (I've hiked this trail frequently) or on any other costs I may incur as a result of this appropriation. These claims may be quite significant, and may carry significant moral weight. My claim may be strong or weak: for example, if my hiking causes irreparable damage to a fragile ecosystem, if others have a stake in the preservation of this ecosystem, and if appropriation would be an efficient way to preserve it, these facts would combine to make my claim relatively weak. Under such circumstances, it is not at all clear that my claims will override those of other people. On the other hand, the claims of the would-be appropriator might also be relatively weak. If she simply enjoys bulldozing down saguaros, and wants to appropriate this trail merely to indulge herself in this destructive pastime, then her claim might be quite weak.

211 Of course, existence value is not the only kind of value rainforests can have, even for those who will never see them. They may have practical value for future persons, and may therefore be valuable for present persons who have a current interest in the welfare of these future persons.
Under such circumstances it might be overridden by my claim to hike, or even a claim based on the existence value, to me and others, of pristine and undeveloped desert land. Her claim would be weightier if undeveloped desert were in endless supply, or if she wanted to build and live on the land instead of simply destroying it.

If we accept the second interpretation of Nozick's account, we would be led prematurely to conclude that such appropriation is illegitimate merely because there are some respects in which I am worse off which are not adequately captured by the assertion that "I can no longer freely use what formerly I could." But the situation is much more complex than Nozick's criterion would suggest. It seems clear that we need to consider the competing claims of those who have a stake in the land's appropriation before we can determine whether appropriation would be justified.

In sum, weakening the proviso to prohibit appropriation that worsens the situation of others will not do. If formulated precisely, according to Miller's paretian version, it would inappropriately prohibit appropriation even in circumstances where 1)propertization would be the only way to preserve renewable resources for future generations, and 2)none of those who would be worse off have a strong claim against those who would appropriate, and 3)those who would appropriate have a strong moral claim to do so. The problem of blast fishing in the Tongan reefs arguably describes such a situation. When appropriation occurs in such circumstances, the result is not pareto efficient\(^{212}\), but this seems to be very slender
support for the claim that it would be unjustified. Revising the ‘worsening’ interpretation of the proviso in the way Nozick suggests leaves the status of such appropriation unclear," but would also seem to prohibit it. And in general, Nozick’s suggestion fails to account for the varying weight of different claims which are relevant for determining whether appropriation is legitimate. Since he considers only the claims of those whose position might be worsened by appropriation, and not the claims of those who would be better off as a result of appropriation, his weakened proviso fails to account for all of the morally relevant features of the situation.

6.8 An Alternative: The Proviso as a Harm Principle

Unless, like Sanders, we think that the proviso should be eliminated entirely, we need to find an alternative version. An adequate interpretation of the proviso should tell us when we are justified in appropriating, and should provide people with adequate protection against the potentially harmful appropriation of appropriated, this criterion cannot compare the case where they are protected by appropriation and the case where they are left to be blasted and bleached. These two situations are pareto incomparable, since some will be worse off and others better off no matter which comes about.

213 Nozick’s examples (1974, pp. 178-182) do not make his principle less vague and mysterious.
others, while not prohibiting appropriation which would safeguard the relevant interests of those whom the proviso protects. It should be capable of taking into account the complexity of appropriation in circumstances in which there are competing claims of the different persons (including future persons) who have a morally significant stake in the object to be appropriated, and the consequences of propertization. An adequate interpretation of the proviso should be capable of accounting for appropriative acts under circumstances in which there is no way to avoid making someone worse off. The forgoing discussion, in fact, suggests that no account of the proviso will be adequate which fails to take into account the fact that many different people, both current and future, may have competing, and morally significant claims at stake in the context of a given instance of appropriation. In what follows, I will present an interpretation of the proviso which, I will argue, is capable of accomplishing all of these varied tasks. The principle I recommend has the additional virtue of reflecting a widely held and relatively uncontroversial moral commitment reflected in the works of philosophers from Mill to Feinberg, and widely accepted by political philosophers in the liberal tradition: people should be left alone provided that their actions are not harmful to other people. I suggest that the proviso is best interpreted as prohibiting only appropriation which is harmful to persons other than the appropriator.

According to the account of ‘harm’ defended in Chapter Three,\textsuperscript{214} a person A harms a person B just in case A indefensibly performs an act (or omission)

\textsuperscript{214} From Feinberg (1986).
which is defective or faulty with respect to the risks it creates for B, and which violates B’s rights, and which in addition causes an adverse effect on B’s self-interest such that B’s personal interest is in a worse condition than it would be in had A acted as s/he should have instead of as s/he did. As Feinberg argues, an act is "defective or faulty" in the relevant respect just in case "it is done with the intention of producing the consequences for B that follow, or similarly adverse ones, or with negligence or recklessness in respect to those consequences."^215

If the proviso is to protect future persons as well as present persons, as we have argued it should, then the conception of ‘harm’ adopted must be capable of application across generations, and must specifically be capable of protecting future persons in the context of different person choices. As argued in Chapter three, it is crucially important in applying this intergenerational account of harm, that we adopt appropriate principles for the individuation of persons. There it was argued that future persons should be identified as those who will experience the consequences of our choices, and not by more specific criteria as, for example, genetic makeup. Unless this criterion for the individuation of future persons is adopted, this interpretation of the proviso will never prohibit appropriative acts which influence the identities of future persons, no matter how dire the consequences will be for them. In fact, the more dire the consequences of an appropriative act, the more likely it will be to be a different person choice. As argued earlier, the only interpretation of the harm principle which adequately protects the interests of the

^215 Feinberg (1986).
future in such contexts is an interpretation which incorporates appropriate principles for the individuation of persons.

Clearly this is a minimal proviso, in the sense that it presents a strong presumption in favor of the right to appropriate. It is minimal since it is based on what may be the most basic and uncontroversial of moral presumptions. Even those who reject the existence of positive obligations and positive rights accept the moral prohibition against harming others, so basing the proviso on the harm principle should be acceptable even to the most parsimonious libertarian. And if this minimal proviso can be shown to provide adequate protection for the interests of others, as I will argue, then it should be acceptable to less parsimonious liberals as well.

It must be recognized that this interpretation of the proviso imposes a heavy burden on anyone who would show that a given appropriative act is unjustified. It is even stronger, in this respect, than the interpretation recommended by Jan Narveson, according to which one has a right to appropriate provided that appropriation does not violate anyone's rights:

...[In a state of nature 'unsullied by positive rights'] People may... take what they please, so long as what they take,... does not adversely affect the rights that people already have. That my acquisition of a given plot thereby disenables you from having that plot is true enough, but nothing to the point, since you had no right to that plot, any more than I did. I acquired the right by getting there first and doing things with it. I did not activate a claim I already had, for I had none. Acquisition limits opportunity, to be sure. But nobody had a duty to provide you with that opportunity, nor even maintain it for you. You simply didn't have a right to it.216

Narveson's proviso permits more appropriation than Nozick's. According to Narveson, appropriation that worsens the position of others is justified provided that it does not also violate their rights. Since not all worsenings are rights violations, there is a class of appropriations which would be prohibited by Nozick and which are permitted by Narveson. 217

On the analysis we have employed, the violation of rights is only one of six features of harms. Recall Feinberg's analysis of 'harm' cited earlier: According to this account, A harms B if and only if

1) A's acts (in a sense wide enough to include omissions and extended sequences of activity).
2) A's action is defective or faulty with respect to the risks it creates to B, that is, it is done either with the intention of producing the consequences for B that follow, or similarly adverse ones, or with negligence or recklessness in respect to those consequences.
3) A's acting in that manner is indefensible, that is, neither excusable nor justifiable.
4) A's action is the cause of an adverse effect on B's self-interest (a "state of harm").
5) A's action is also a violation of B's right.
6) B's personal interest is in a worse condition... than it would be had A acted as s/he should have instead of as s/he did. 218

If there are appropriative acts which infringe the rights of others but which are not harms, 219 then the interpretation of the proviso I am recommending

217 Of course, if it could be shown that those 'worsenings' allowed by Nozick are just those which don't violate rights, this would cause Nozick's interpretation to collapse into Narveson's. If Nozick's position were less ambiguous, it might be possible to argue that this is its most sympathetic interpretation.

would permit an even larger class of initial appropriations than Narveson’s interpretation.

On this understanding of ‘harm,’ there are six conditions which must be satisfied before we can say that appropriation is harmful to others. In the present context, the first of these conditions is trivial: any act of appropriation is an act in the relevant sense. In the context of appropriation, the second requirement concerns the attitude and intentions of the appropriator. If A appropriates O without considering the effects of appropriation on others, or with inappropriate disregard for any such effects, then her act may be negligent or reckless. It should be regarded as negligent or reckless just in case 1) this act of appropriation is likely to have an adverse effect on the interests of others, and 2) A would have understood that this was true had she taken reasonable precautions before appropriation.\footnote{Like many legalistic accounts, there is a key variable at stake here: what is it for precautions to be \textit{reasonable}? Different persons may accept different standards of reasonableness, and it will not matter for my analysis which of them turns out to be most justified. The most common such standard, used in legal as well as philosophical discussions,\footnoteref{footnote:218} It is arguable that there are not. See Rainbolt (1990) for a theory of rights which might support this view.\footnoteref{footnote:219}} Such a person would be judged "reckless" if she consciously disregarded an unreasonable risk to the interests of others, "negligent" if she was not aware of the risk, but ought to have been aware of it.
is the "reasonable person standard." According to this standard, one has taken reasonable precautions just in case one has done what a reasonable person would be expected to do in relevantly similar circumstances. This may be quite a bit like explaining the efficacy of a sleeping draught in terms of its dormative virtues. But the reasonable person standard is not a theory of reasonableness, rather it is a stand-in for such a theory. For our purposes here, it is neither necessary nor possible to provide more.

The third condition is that the appropriator must have no legitimizing excuse or adequate justification for her appropriation. For example, if I need to appropriate an unowned turkey in order to prevent myself from starving, then even if my appropriation sets back the interests of others, this setback of interests may not constitute a harm, since it may be excused. Necessity of this sort may sometimes even constitute an adequate excuse if it (somehow) violates others' rights, since it is widely accepted that there are circumstances in which a person may be justified in infringing the rights of others, and that the claims based on extreme necessity are among those circumstances. For those who hold that rights may never be permissibly infringed, this condition will be irrelevant, since the only appropriative acts to which it applies will be prohibited by condition five. Trivially, if it is never permissible to infringe the rights of others, then no one ever has an adequate excuse or justification for having done so.

In Chapter Three I argued that given a proper understanding of condition four, condition six may be unnecessary, and perhaps redundant. I argued that a
person’s prospects for future benefits should be counted as one dimension of her current level of ‘welfare,’ broadly construed, and that when future persons suffer harms as a consequence of a different person choice, the fact that ‘they would not have existed otherwise’ may be irrelevant to the question whether they were harmed. If this argument is accepted, the counterfactual test is unnecessary. But nothing in my present argument depends on that premise. Those who believe that we must retain the counterfactual condition need not reject the argument presented here. However, in applying that condition in the context of different person choices, it is important, as argued in Chapter Three, that we adopt broad principles for the individuation of future persons. They should be identified simply as "those who will experience the consequences of current appropriation." A narrower criterion for the individuation of future persons, as I argued earlier, would lead us to the absurd conclusion that no one is harmed by any acts which do not set back the interests of any present person, and which affect the identities of future persons.

In the context of the proviso, the fifth element of the analysis of harm is crucial. What is the status of the rights, violation of which would render appropriation unjustified? One might think that all relevant rights must be generated by the proviso itself. If so, then the first act of appropriation would automatically be justified, since no prior rights could be in place to be violated. But few would accept this. Antecedent to any appropriation, most theorists would at least admit the existence of basic negative rights and *prima facie* moral claims. As Russell Hardin

221 Gauthier (1986), and in general, those who believe that moral claims can only be supported as rational constraints which would result from bargaining and mutual
writes, there are two alternative ways to introduce rights which are not based on the proviso: "either rights may be asserted from direct intuition, as they are in many libertarian theories, or they can be derived from other considerations."²²² Often libertarians refer to their view as a "rights based" theory.²²³ If we take rights to be basic in this sense, they must function as premises in moral arguments, supporting all-things-considered moral claims, rather than being supported by all-things-considered judgments.

An example of such a view is that of Robert Nozick. In Anarchy, State, and Utopia, Nozick recognizes the fact that he has given no account of the underlying moral rights on which he builds his view, and with which he starts his defense of libertarianism. Rights, for Nozick, are the normative ground in which political theory is planted. Recall the first sentences in his book:

Individuals have rights, and there are things no person or group may do to them (without violating their rights). So strong and far reaching are these rights that they raise the question of what, if anything, the state and its officials may do.²²⁴

advantage, would not accept the existence of such claims. So my argument here will not convince, for example, those who believe that Gauthier is successful in showing that morality arises from bargaining and self interest. Fortunately such persons are not too numerous.


²²³ Some non-libertarians as well: see Sumner (1984).

This approach may be supported by some of our intuitive notions concerning rights. One such widely shared intuition is that rights are categorical in the obligations they impose on others. If a person has a right, that right constitutes a claim which cannot be overturned, without consent, by other competing moral considerations. If rights are based on deeper principles, as the second of Hardin’s alternatives would suggest, then these deeper principles may have a kind of ultimate priority, and rights claims might be overturned when they would not serve the foundational values embodied in these deep principles. This is the problem commonly faced, for example, by attempts to support rights on utilitarian principles: for such views, when rights come into conflict with the utilitarian principles which justify their recognition, utilitarians have difficulty explaining why there are moral reasons for respecting rights rather than appealing directly to the deeper principles which generate them. Libertarian views often assert inviolable rights to liberty and property. If these rights are defended as foundational principles, this removes the possibility that they could be justifiably infringed in circumstances in which they come in conflict with other values.

While this feature may provide an ideal starting point for a libertarian view like Nozick’s, it leaves the normative structure of rights, and their foundation

225 Of course, many utilitarians (Mill and Sidgwick, for example) offer an institutional response to this problem. My discussion here is not intended to do more than refer to this debate. For more, see especially Rawls (1955), and Hardin (1990).
simply mysterious. Nozick recognizes that he has given no account of the normative assumptions underlying his view. He notes that this would be a crucial task, and adds that "the gap left without its accomplishment [is] so yawning, that it is only a minor comfort to note that we here are following the respectable tradition of Locke, who does not provide anything remotely resembling a satisfactory explanation of the status and basis of the law of nature in his Second Treatise."\(^{226}\)

But it seems to me that we should be dubious about the existence of basic rights which are absolute, inviolable, and basic, as Nozick implies. Until we have strong arguments and good reasons to believe in such things, it seems to me that we should be skeptical. Nozick provides no such reasons or arguments, and in general, Libertarian theories like Nozick's do not offer analysis of this sort.\(^{227}\) At any rate, I will argue that the property rights which arise from initial appropriation, in the context of a properly understood Lockean view are not basic in this sense. The Lockean view is also incapable of supporting the claim that such property rights are absolute and categorically inviolable, or that they constitute rights of "full blown ownership" as described by Honore and Becker. If our confidence that 'rights to liberty and property are absolute' were bolstered by the self-evident plausibility of the political theory growing from them, or if there were no alternate and less mysterious account of rights available, then this "yawning gap" in Nozick's view


227 See, for example, Narveson (1988).
might be unproblematic. But many people do not find Nozick's view self-evidently plausible, and there is an alternate account of rights.

According to the second alternative, rights are not basic or foundational. Rather they function as conclusions of more basic moral arguments, though they may function as premises in higher-level moral discussion. Understood in this way, rights can be analyzed into the more basic moral relations which constitute them. Understanding rights in this way, as analyzable conclusions of moral arguments rather than as basic premises of arguments, has important advantages. For one thing, if rights can be analyzed into more basic constituents, they can be more readily discussed. In understanding the constituents of rights, and the way in which these constituents are supported by more basic moral considerations, we can more readily determine which claims take priority when rights conflict. It is helpful, in such a context, to distinguish prima facie rights from all-things-considered rights: In cases where rights come in conflict with one another, they must be considered to be prima facie rights. Once these prima facie rights have been analyzed, and the relative priority of the claims on which they are based has been considered, we will be in a position to make an all-things-considered moral judgment concerning which of the conflicting rights should take priority in the case at hand.

For example, suppose two persons have competing prima facie claims. The claims of person A are based on the principle of utility, while the claims of person B are based on the value of autonomy. If autonomy is always more important than utility, we would have ground for claiming that A's prima facie claim is
defeated by B's claim. Under such circumstances, B's claim constitutes a right. This provides a more specific account of the second conception of rights: on this conception, rights are undefeated *prima facie* claims.

It is impossible to provide a full defense of this conception of rights here, but others have taken important steps toward that defense, and in fact, this conception of rights seems to me to be the best justified conception under serious philosophical discussion. While I will not provide a full defense, the justification for such a conception must rest partly on the uses to which it may be put. I hope that the use to which I put this 'second' conception of rights will itself constitute a step toward its philosophical defense.

One further comment is in order: advocates of the first conception of rights considered here believe that there are some rights which are more robust than the rights described by the conception I have recommended here. It is incumbent on such people, of course, to provide an account of such rights, including an argument for their existence, and an account of their role in moral reasoning. As the above discussion indicates, I am pessimistic about the prospects of this view, and I am inclined to think that the burden of proof lies on the proponent of such rights. But my point here is quite different: even those who believe in more robust rights may recognize the moral significance of claims based on non-rights moral considerations.

228 For more complete discussions of this conception of rights, see Feinberg (1992) chapters 8 and 9, Buchanan (1984), Raz (1986), Rainbolt (1990), and Wellman (1985).
For example, those who argue that 'rights trump claims of utility,' need not also believe that claims based on utilitarian considerations are morally irrelevant. If there are more robust rights, their existence may be consistent with the existence of the less robust rights described by the second conception. Believers in such rights may therefore judge my discussion to be incomplete without dismissing it entirely.

On the conception of rights I have advocated here, appropriation of unowned or communally owned goods will violate the rights of others just in case the claim to appropriate is defeated by the relevant, morally significant claims of others. If, for example, one wishes to appropriate an unowned water source, this appropriation will be justified provided that the claim to appropriate is not defeated by others' claims to use the water. If the source one wishes to appropriate is the only one in the vicinity, if it has for centuries been commonly used by members of the community, if the water has special curative powers required by many members of the community, then one's claim to appropriate may conflict with significant claims of others, and may therefore be defeated. If there are many such sources, if the only way to keep the water pure over generations is to propertize and protect it, if one needs to appropriate this source in order to survive and to maintain one's family, then the claim to appropriate may also be supported by relatively weighty and significant moral principles.

The conclusion we should draw from the previous discussion and from this example is this: it is impossible to judge whether a given appropriative act violates the rights of others without considering the nature and weight of the claims
others may have both in the object to be appropriated, and in the consequences of propertization of that object. The second conception of rights allows us to take such considerations into account, while the first cuts off discussion before these considerations can be raised. For those who regard such considerations as morally significant, this should provide a strong argument in favor of the second conception of rights.

6.9 Conclusion

In this chapter I have presented preliminary arguments in favor of a theory of property rights in the Lockean tradition. At this stage in the argument, this position can be summarized in four central claims: First, since future persons are among those who have an important moral stake in appropriation which takes place, and since Locke’s proviso is intended to protect people from unjustifiably having their interests set back by the appropriation of others, Locke’s proviso should be understood to protect future as well as present persons. Second, because resources are productive, and because propertization often has beneficial side effects, some appropriation may actually leave literally enough and as good for others, and sometimes appropriation may be the best way to preserve resources for the benefit of future persons. Third, I have argued that the most popular way of interpreting Locke’s proviso, whether presented as a requirement of pareto efficiency or as a requirement that appropriation must not ‘worsen’ the position of others, is simply
inadequate. However, while most of those who reject this interpretation do so on the ground that it would permit too much appropriation, I have argued that this interpretation would unjustifiably prohibit appropriation, even in cases where it would be beneficial and would violate no one's rights. Finally, I have argued that the proviso is most productively interpreted in terms of a 'harm' principle: that is, appropriation is justified provided that it does not harm persons other than the appropriator. Since 'harm,' as the term has been used here, necessarily implies the violation of rights, I have also outlined the conception of rights implicit in the interpretation I recommend.

In the following chapter, I will extend my defense of this interpretation of the proviso. I will analyze the circumstances in which appropriation can constitute a harm, and show that this interpretation of the Proviso has important implications for our conception of property rights.
Chapter 7

PROPERTY RIGHTS, USUFRUCTORY RIGHTS, AND THE DUTY TO CONSERVE

7.1 Appropriation and Harm: Strategic Considerations
7.2 The Harm Principle allows some appropriation
7.3 Needs and Rights: When is appropriation Harmful?
7.4 The Structure of Usufructory Rights
7.5 The Current Relevance of Usufructory Rights
7.6 Harm, Usufruct, and the Protection of Individual Liberty
7.7 Conclusion

7.1 Appropriation and Harm: Strategic Considerations

I have argued that we should interpret Locke's proviso as prohibiting only appropriation which harms others. Since harm, as we have used the term here, necessarily implies the violation of rights, I have (briefly) argued that we should accept a conception of pre-appropriative rights according to which rights are 'bundles' of more basic normative elements (claims, powers, liberties, etc.), each of which must be supported by an independent moral argument. Armed with this interpretation of the proviso, and with this conception of rights, we must now defend it as an adequate interpretation, by considering the structure and foundation of the property rights which can come into existence without harming others.

Interpreting the proviso as a harm principle is, as we have noted, very liberal toward potential appropriators. This interpretation permits appropriation in a broader range of circumstances than any other interpretation we have considered here. It might be argued that this interpretation of the proviso is the most minimal
which could possibly be consistent with our deepest considered moral judgments. For surely the prohibition against harm is near the center of any plausible moral conceptual scheme. Like "there have been black dogs" (Quine229) and "slavery is wrong" (Rawls230), the statement "it is morally wrong to cause harm to others" may well function as a kind of fixed point in our reasoning. It is not clear what evidence could cause us to relinquish such a fundamental principle.

But a common criticism of the alternate interpretations of the proviso we have rejected is that they are not restrictive enough, and that they therefore fail adequately to protect people from the appropriation of others. In defending the interpretation of the Lockean proviso as a harm principle, we must accomplish five important tasks. First, it is necessary to show that it is possible to justify at least some initial appropriation using this interpretation. Second, we must show that there are circumstances in which appropriation can be harmful to others, and in which the protective role of the proviso may be invoked. This will involve, among other things, explaining how the appropriation of resources in which no one has an exclusive claim, can violate the rights of others. Third, we need to give at least some analysis of the nature of the rights which are generated by such a process. As will become clear, this aspect of the defense is especially important, and has been neglected in most discussions. Fourth, we must show that this analysis of the conditions of initial appropriation has relevance to contemporary political life.

229 Quine (1960) p. 66.
Finally, it is necessary to show that this interpretation of the proviso provides people with adequate protection against having their interests unjustifiably set back by the appropriation of others, and also that the conception of property rights generated by this interpretation provides property owners with adequate protection against the interference of others.

In what follows, I will argue that the interpretation I recommend does justify appropriation (7.2), and I will analyze the circumstances in which appropriation constitutes a harm to others (7.3). I will argue that this interpretation provides a conception of property rights far less extensive than the concept of full-blown ownership (7.4), but a conception which is plausible in its own right, and which has clear relevance to contemporary political life (7.5). Finally I will argue that this conception of the proviso provides adequate protection for both property owners and for those who stand to have their interests set back by the appropriation of others (7.6).

7.2 The Harm Principle Allows Some Appropriation

In the case at hand, it is relatively trivial to show that at least some initial appropriation can be justified if we interpret the proviso as a harm principle. Since this interpretation is so liberal, it permits appropriation in a very broad variety of cases. To show that the interpretation at hand allows some appropriation, all we need to show is that there are some circumstances in which initial appropriation harms no one. This might be because it sets back no one’s interests, violates no
one's rights, or because though it does these things, it does them excusably." If the institution of property is itself evil and necessarily harmful, as some Marxists have claimed, then it might be argued that appropriation initiates a harmful institution. However, most political theories regard the institution of property as necessary, even if some regard it as a necessary evil, and it would be impossible to respond here to all the concerns about the institution of property in general. Unless property is generally harmful, the interpretation here presents no special problems. For example, as interpreted here the proviso provides at least *prima facie* support for the appropriation of the Tongan reefs described in an earlier example, since those whose interests are set back would not have their rights violated by this appropriation. Their claim to blast fish is defeated by the claim of the appropriator to protect the reefs from destruction so that it is more likely that they will be preserved for future generations.

### 7.3 Needs and Rights: When is Appropriation Harmful?

The second aspect of the defense of this interpretation, however, is both more interesting and more important: to some, it may seem counterintuitive that appropriation of goods in which no one has any exclusive claim could constitute a

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231 This is not to equate "excuse" with "justification." On the view I articulate here, satisfaction of the proviso is sufficient to justify appropriation. But no one is harmed (and therefore the proviso is satisfied) only if any violation of rights or setback of the interests of others is itself *excused.*
harm. Consider the situation of an early descendant of immigrants from East Asia, her ancestors having crossed into North America by crossing the ice across the Bearing Straight. Arriving in the fertile hills of land which will (in what to her is the very distant future) become Kentucky, she decides to appropriate a valley of fertile pasture land from the unowned heath. Other contemporary residents do not have their interests set back by this initial appropriation, since at this point in time there really is enough and as good for them to appropriate if they wish. In considering what claims can validly be asserted, we must consider whether these claims are consistent with the prohibition against harm. But no one had ever asserted prior claims on the fertile valleys of ancient Kentucky. Harm implies the violation of rights, but in the absence of prior claims, how could it be possible that such early appropriation could violate anyone's rights?

Before we will be in a position to answer this question, we need to consider circumstances in which the appropriation of unclaimed goods might constitute a harm. Consider the following example:

**Desert Island One:** Robert and John are alone and entirely destitute on a barren island. A crate washes ashore, and both simultaneously amble over to investigate. As it turns out, the crate contains exactly enough food and supplies to keep both of them alive and comfortable over the course of their lives, but only if they divide the contents with precise equality. An unequal division could make one considerably better off, but the other would ultimately starve (We may suppose that the probability that more goods will arrive is very near zero).

Deciding that mere survival and comfort are not enough, Robert is the first to speak up. He asserts a claim to 5/8 of the contents of the crate. Unfortunately for John, Robert is big and powerful. He is able to enforce his claim. He enjoys a long and exceptionally happy life, while John finally
dies in miserable destitution. Robert suffers from regret about John’s Sad Fate, but the happiness he enjoys more than compensates him for these regrets.

Prior to Robert’s claim, the contents of the crate are unowned. Can this claim constitute a valid property right? To show that it does, we would need to show that John has a corresponding obligation to respect it. But in this context, it would be absurd to suppose that John has an obligation to respect Robert’s claim, though he may be forced to respect it even in the absence of obligation. Robert’s claim effectively dooms John to ultimate destitution and starvation, and his reason for dooming John is not necessity, but simple greed: he wants to live a little better than he could otherwise live, even though he could be comfortable without causing John to starve. Many will agree that Robert’s claim fails adequately to take into account John’s morally significant interests, and reflects negligent lack of concern for those interests. If John has a general right to due moral consideration, that right is clearly violated. More to the point, John’s claim to the excess 1/8 of the crate’s contents is based on his most basic need to survive, while Robert’s claim is based only on his desire to live a little bit more comfortably than otherwise he could. So from the moral point of view, John’s claim is weightier than Robert’s, and should defeat it. In the sense we described earlier, an undefeated prima facie claim constitutes a right, so in the circumstances described, John has a right to the excess 1/8 claimed by Robert. Robert has no excuse for the violation of this right, and his action needlessly makes John worse off than he would otherwise have been. So Robert’s claim to the excess 1/8 of the crate’s contents constituted a harm to John, and therefore did not constitute
a property right. John had no moral obligation to respect Robert's selfish appropriation, and only Robert's strength allowed him to enforce it.

It is important to recognize that this is not simply an issue of fairness, or the supposed value of equality. We have described a case in which divergence from equality is not simply unfair, it constitutes a harm. Now consider a slightly different case:

**Desert Island Two**: Robert is alone and destitute on the same barren island. He knows, with a certainty very near one, that the moment he dies, John will arrive to live a lonely life on the same island. The island contains the same crate, with exactly enough food and supplies to maintain a long and comfortable life for both Robert and John, provided only that Robert consumes exactly half, leaving the other half for in anticipation of John's nearly certain arrival. The probability that more supplies will be available to John is near zero.

Once again, Robert decides that mere comfort and survival are not enough for him. He appropriates more than half of the contents of the crate. As before, Robert suffers from regret that his actions will doom John to ultimate deprivation and starvation. But once again, the happiness he enjoys more than compensates him for these regrets.

If we accept the argument that Robert's appropriation harmed John in the previous example, can we reject the same conclusion here? As in the previous case, Robert is in a position to enforce his claim to more than half of the contents of the crate. We might also consider the case in which there is only enough for one of the two to survive. Under such circumstances the strength of the claim to appropriate more than half might actually increase rather than decrease, since it (the claim) would be based on a more fundamental value: necessity. Reasonable people might well disagree on the proper course of action to take under such circumstances.
Not having arrived yet, John is not in a position to argue, so in this case Robert does not need to enforce his claim with muscle and bulk. If it is worse to enforce an unjustified claim with physical coercion than without, then this may be a morally significant difference. But this difference is not relevant to the justification of the claim being enforced. In describing why Robert’s appropriation was harmful in the first example, no reference was made to the physical force used, though this may be an additional way in which Robert harmed John in Desert Island One. If we consider only the aspects of Desert Island Two which are relevant to the determination of whether Robert’s claim to the excess 1/8 of the supplies is a justified claim, there seems to be no significant difference between the two examples. Once again, Robert is in a position to enforce his claim to more than half of the supplies which both need. As before, Robert’s appropriation is done with reckless disregard for John’s most basic interests, and is an unjustified violation of John’s right to consideration and respect. And as before, it leaves John worse off than he would have been had Robert acted differently. The conditions of ‘harm’ are satisfied.

Desert Island Two is pure fiction of course, but it is relevantly similar to a very real situation. Like John in the second of these two examples, future persons have a morally significant interest in our choices, but are not in a position to complain if we appropriate in ways that leave them destitute. We could increase the similarity to our own situation by considering a third case:

Desert Island Three: As in Desert Island Two, Robert is alone and destitute on the same barren island. In this case, he knows, with a certainty very near
one, that the moment he dies, John will arrive to live a lonely life on the same island, and after John, Jane will arrive, and after Jane, another person, *ad infinitum*. In this case however, Robert is supplied not with a crate of goods, but with a given stock of a renewable resource. If he chooses to exploit this resource at a sustainable rate, he will be able live a long and comfortable life, and will leave the same opportunity for the Island's next inhabitant. Alternatively, he can choose to exploit this resource at an unsustainable rate. The higher yield he will enjoy will allow him to live better than he otherwise would, but as a result, no subsequent inhabitant of the island will be able to survive.

Once again, Robert decides that mere comfort and survival are not enough for him. He exploits the available resource at an unsustainable rate, and as a result none of the subsequent inhabitants is able to survive. As before, Robert suffers from regrets, but once again, the happiness he enjoys more than compensates him for these regrets.

I submit that the differences among these cases are not relevant from the moral point of view. If we judge that John is harmed in *Desert Island One*, as many people will, then we cannot reject the claim that he is also harmed in *Desert Island Two*, and that the innumerable subsequent inhabitants are harmed in *Desert Island Three*.

To some, this will seem a natural and intuitive conclusion. For those who are still unconvinced, it is possible to provide additional support for the claim that Robert violates the rights of others in the examples we have considered. As stated earlier in very general terms, appropriation violates the rights of others when the relevant *prima facie* claims to appropriate are defeated by the claims of others. In *Desert Island One*, Robert's claim to appropriate what he needs for basic comfort and survival is undefeated, since this claim comes in conflict with no comparably weighty claim of John's. However, Robert's claim to appropriate *more* than this is
based on less weighty moral concerns. John’s claim on the excess 1/8 of the supplies is based on more basic needs for survival and basic comfort: without it, he will not have enough to survive. John needs this excess.

But needs do not, of course, constitute rights. Even those who recognize a basic right to life concede that this right does not entitle a person to whatever she needs in order to survive. But in the context we have described, the relevant basis for the claim to appropriate is one of need, and there are no other basic rights relevant to the case. Both Robert and John may have basic rights to moral consideration. And each, we assume, has the right not to be harmed by the other. But any other rights relevant to the situation must arise out of their competing claims on the resources both need and want. So in this case, in order to determine who has a right to what, we must have a way to arbitrate among different claims all of which are based on need and desire.

In this interest, it will be useful to distinguish among two different kinds of needs. More fine-grained distinctions among needs are, of course, possible, but

233 Judith Jarvis Thompson’s example has become famous: "If I am sick unto death, and the only thing that will save my life is the touch of Henry Fonda’s cool hand on my fevered brow, then all the same, I have no right to be given the touch of Henry Fonda’s cool hand on my fevered brow. It would be frightfully nice of him to fly in from the West Coast to provide it. It would be less nice, though no doubt well meant, if my friends flew out to the West Coast and carried Henry Fonda back with them. But I have no right at all against anybody that he should do this for me." Thompson (1971) p. 55.
this preliminary distinction will be sufficient for the case I aim to make here. In the first class, which I will call simply *basic needs*, there are things that it is necessary for us to have if we are to live adequately decent human lives. If, as many have argued, autonomy (the ability to shape, within reasonable bounds, the course of one's life), is among these prerequisites, then the material and psychological prerequisites for autonomy are among our basic needs. In the second class, which (following Norman Daniels') we may call *adventitious needs*, there are things that it is necessary for us to have if we are to be able enjoy benefits beyond what is necessary to live an adequate and decent human life. Norman Daniels provides an example which may serve to clarify what sorts of needs may be adventitious in this sense:

> If I appeal to my friend's...beneficence in requesting $100, I most likely will get a quite different reaction if I tell him I need the money to get a root-canal than if I tell him I need the money to go to the Brooklyn neighborhood of my childhood to smell pickles in a barrel. Indeed, it is not likely to matter in his assessment of obligations that I strongly prefer to go to Brooklyn. Nor is it likely to matter that I insist I feel a great need to reawaken memories of my childhood-- I am overcome by nostalgia."

234 Daniels (1987) pp. 298-304. The distinction I make here is somewhat different from Daniels' distinction between what he calls 'adventitious needs' and what he calls 'course of life needs.'

235 Daniels (1987) pp. 298-99. In the context of his paper, Daniels refers to the *duty* of beneficence. Like Daniels, I believe that we have such duties, but it is not necessary to appeal to them in the context of the argument I make here.
It is difficult to imagine a reasonable conception of what it is to live a "decent human life" on which Daniels' "need" to smell pickles is a basic need. However, one's conception of what it is to live an "adequate and decent" human life may be spare or flush. It is open for discussion whether arts and music, for example, are basic or adventitious needs. Since there may be reasonable disagreement on just what sorts of lives are adequate and decent, it seems appropriate to leave an element of variability and uncertainty in this aspect of the analysis. But most people will agree that on any reasonable account, many of our identifiable needs will be adventitious rather than basic. The claim I hope to support with this distinction may, I hope, seem relatively trivial. It is this: when there are competing claims on unappropriated resources, and when claims to appropriate are based only on the different needs of the claimants (that is, there are no other morally relevant sources for these claims), claims to appropriate which are justified by reference to basic needs will defeat claims which are justified only by reference to adventitious needs.

On the conception of rights we have adopted, undefeated prima facie claims constitute rights, since other persons will have a corresponding obligation to respect these claims. It follows from this that if Robert appropriates something to which John has an undefeated prima facie claim, then Robert has violated John's rights. In appropriating property under such circumstances, Robert has failed to give John's morally relevant interests their due weight. Since Robert had no undefeated claim on these resources, he has no right to them.
If the argument presented here is accepted, we may conclude that appropriation of resources in which no one has exclusive rights will violate the rights of others and harm them at least when:

1) The claim to appropriate is based only on adventitious needs. That is, the resources in question are not needed for survival, and are not necessary for the enjoyment of adequate comfort in life.
2) The claims of others are justified by reference to basic needs. That is, they need the resources in question to survive and to live minimally decent lives.
3) No other morally relevant claims on these resources exist.

It must be recognized that this is a sufficient condition, not a necessary condition. In general, as we noted earlier, appropriation violates the rights of others when the *prima facie* claim to appropriate is defeated by the relevant *prima facie* claims of others. The three conditions above pick out only one possible set of circumstances in which this is the case.

### 7.4 The Structure of Usufructory Rights

In considering the circumstances in which claims on unappropriated objects can constitute rights, and the circumstances in which appropriation harms others, we can discover features of current property rights. To get back to the example with which we began the previous section, the first person to arrive in ancient Kentucky may claim to appropriate her fertile valley, and this claim may also justify her in clearing the land for cultivation. This claim may be supported by a number of principles: Agriculture may be beneficial to all, so this appropriation may be supported by a principle which recommends actions which will be mutually
beneficial. If others have similar opportunities, then appropriation will 'straighten' no one, so it may be supported by a principle allowing actions which do not 'straighten' others. If agriculture is the only way to survive, then appropriation is permitted by the principle that people have a right to do what they need to do in order to survive, provided that their actions do not have undue costs for others. Even a bare desire to appropriate the land in question may provide the basis for a relatively weak claim to appropriate, since it is better for people to get what they want than to be denied it. But none of these principles is necessary to support her claim to appropriate under these circumstances. As long as no present or future person is harmed by this appropriation, it is permissible according to the proviso.

However, the rights which arise as a result of this process may be far less extensive than rights of full-blown ownership. For in choosing how to use what has been appropriated, we have no valid claim to uses which might prove harmful to others. As argued in the context of Desert Island Two and Desert Island Three, future persons may be harmed when the actions of present persons unnecessarily and inexcusably deprive them of things they will need if they are to live adequately. If the land one wishes to appropriate and to cultivate is needed by future persons for the satisfaction of their basic needs, then the proviso may prohibit cultivating the land in destructive ways (say, by ignoring the effects of erosion, or by irreparably leeching the land of its fertility). At least it will prohibit such destructive use of the land if there are nondestructive alternatives available, and if these alternatives would enable one to satisfy one's own basic needs. In giving the interests of future persons due
moral consideration, we must give their interests sway under circumstances in which their claims are weightier than our own. In general, a person's right to use what she has appropriated "as she sees fit" is restricted by the right of future persons to have their interests given due consideration. This in turn implies that a person has no valid claim to use her land in ways which would be harmful to future persons.

One conclusion we may draw from this discussion may be uncontroversial: clearly it would be wrong for us to cause future generations to suffer basic deprivation merely to afford ourselves greater present benefits, or to satisfy merely adventitious needs. So, for example, if we have an opportunity to use our resources at sustainable rates so that they will be maintained for future persons, we morally ought to do this rather than using our resources in ways that cannot be sustained, and which will leave future persons significantly worse off. The reason such behavior would be wrong is that it harms future persons.

But a second conclusion is less obvious, and in the present context it may be more important: property rights in resources in which future persons have a morally significant stake will not include the right to use these resources in ways that will unnecessarily leave future persons unable to satisfy their basic needs. In such circumstances, the claims we may legitimately assert simply do not include the claim gratuitously or unnecessarily to destroy what we have appropriated. This is not just a conclusion about what it is right for us to do, it is a conclusion about the nature of the claims we can legitimately make with respect to certain of our possessions. It is a conclusion about the constitution of our property rights themselves.
In articulating the elements of full-blown ownership, the Honore/Becker analysis includes, as elements four and five, the "liberty to modify" and "the liberty to consume or destroy" one's property. If our claims on resources needed by future persons are valid, they do not include these liberties. Claims on such resources are not, therefore, claims of full-blown ownership. In fact, our claims on such resources may not be conventional property rights at all. We have valid claims to use and control appropriated resources, and to enjoy the fruits of our land, but we have no claim to use these resources in ways which might inexcusably deprive future persons of what they need to survive and to live adequate lives. Under some circumstances this will imply not simply that we have no claim to destroy or degrade our property, but that we have a duty not to do these things. In this respect, the rights we have to the resources to which this analysis applies are more like usufructory rights than full-blown property rights.

The Oxford English Dictionary defines 'usufruct' as "the right of temporary possession, use, or enjoyment of the advantages of property belonging to another, so far as may be had without causing damage or prejudice to this." It was sometimes argued, for example by Filmer, that British subjects had only usufructuary rights in the land on which they labored, and that this land was actually the property of the King. This implied that the King had the right to dispossess his subjects if he chose. In doing so, according to Filmer, he would not be arrogating

new rights to himself, but simply asserting his claim to property already his own. Locke regarded this view as tyrannical. In fact it was in response to Filmer that Locke developed the theory of property we have considered here. Other writers have variously argued that monarchs possessed all their wealth only in usufruct, the real owners being their subjects, or that all human possession is usufructory, since the earth and its inhabitants are all the property of God. In this vein, J. Howe wrote in 1702 that "God is indeed the only proprietor, Men are but usufructuaries."\(^{238}\)

The view of property we have been considering here is importantly different from all of these views. Nothing in the previous discussion depends on the notion that we are only managers of the property of others, nor does this view put people at undue risk of dispropriation by the government. Our duty not to damage or destroy resources is not based on the property rights of future persons: as argued earlier, future persons do not have property rights, though their interests are relevant to the structure of current property rights. Our obligations with respect to currently owned resources is based only on the general prohibition against causing harm.

\(^{238}\) Oxford English Dictionary (1971) p. 3576. For an alternate, more recent presentation of a similar view, see Michelle Shocked, "God is a Real Estate Developer:" "God is a real estate developer/With offices around the nation/ They say one day he'll liquidate his holdings up on High/But I say it's just speculation./He may be an absentee landlord/This may be a low rent universe/The roof may need repairs/But at least the floor is there/And the rent is not due 'til the first." Shocked (1989).
There is, however, another sense of the term 'usufruct' on which it refers to a limited property claim which affords the claimant the right to use, and to consume the fruits of property while prohibiting damage and destruction of its substance. This second sense of the term includes no implication that the resources in question are being held in trust for an absentee owner. It is in this sense that our rights in renewable resources may be usufructory. While there is no one else whose claims supersede those of persons who currently own resources in which future persons have a stake, the valid claims of current owners simply do not include the claim to degrade, consume, or destroy. It is in this second sense that current property rights in key resources are usufructory. There is no implication, on this second sense of the term, that there is an absent owner who might arrive to expel us from our land.

In many respects, usufructory rights are similar to rights of full blown ownership, so it will suffice to point out the ways in which they are different. Usufructory rights may include all the liberties, claims, powers, and liabilities included in the Honore/Becker analysis of full-blown ownership except the following:

First, the Honore/Becker analysis includes as element four the liberty "to consume or destroy"—that is, to annihilate the thing. Obviously, usufructory rights cannot include this liberty. Persons who have usufructory rights in resources have a duty to conserve them.
Second, element five of the Honore/Becker analysis is the liberty to modify what one owns. If one's right is usufructory, then the liberty to modify is limited to the class of modifications which will not put the interests of others, including future persons, in jeopardy. For example under some circumstances one might have the right to clear and plow one's land, but not the right to cover it with concrete.

Third, the "prohibition of harmful use" described by Honore should be understood to include a prohibition of use which would be expected to harm future persons, not merely that which might harm those who currently exist. This, however, should not be considered a difference between usufructory rights and rights of full-blown ownership, since, as I argued in Chapter Three, the obligation not to harm others can be naturally extended to contexts in which our current actions and choices harm future persons.

7.5 The Current Relevance of Usufructory Rights

The aim of this discussion is to help us to understand the nature of actual property claims. Of course, we do not know the pedigree of actual property rights since we cannot trace them back to initial appropriative acts which removed them from the commons or the unowned heath. And if we did know the pedigree of actual property rights, it is not likely that they would be judged as valid by the criteria expressed here. It may well be that most actual property claims are the result of conquest and extermination of prior claimants, not of initial appropriation from a
commons or heath. If they should be respected at all, it is likely that the reasons justifying this respect refer to practical concerns like the value of social stability, not the false claim that they arose through a justifiable process. We can, however, discover some features of current property rights by considering what sort of rights could possibly come into existence as the result of a process that avoids harm to others.

Current property rights derive from transfers and special relations among people, and only legitimate claims can legitimately be transferred. If there are some claims, or some kinds of claims, which could not come into existence without causing harm, then those claims cannot be constituent elements of current property rights either. If one cannot acquire a legitimate claim to destroy or degrade one's property, no such claim can be passed on to one's heirs, or sold to others on an open market. In this way, we can see that reflection on the conditions of legitimate acquisition can inform us about the nature of our current property claims. If the right to destroy or degrade could not legitimately have been acquired, nor legitimately transferred, then it cannot currently be legitimately claimed. The duty not to use our property in ways likely to be harmful to future persons is implicit in the structure of our legitimate property rights themselves. If we own resources which can be sustained, and which will be needed, we simply do not have a claim to destroy them, nor to use them in an unsustainable manner.

In general, people are at liberty to do as they will with what they own. But the analysis of rights provided here will justify restrictions on people's use of
what they own. If people have no claim to degrade their property, this provides a potential justification for environmental regulations which prohibit the destruction of our nation's wetlands, or impose restrictions on those who would like to build houses in the Adirondack Mountains. These restrictions on individual rights are not based on positive rights of future persons, but only the fact that current persons have no claim to do what would harm future persons. Even libertarians can affirm the right of the government to prevent people from harming others.

Two comments are in order regarding the usufructory rights we have been discussing. First, the claim that rights in certain resources are usufructory is consistent with rights of full blown ownership in what one produces by harmlessly using or exploiting these resources. If I grow apple trees, I will not unduly set back the interests of future persons by eating (and thereby 'destroying') the apples I produce, or selling those apples (along with the right to eat them) to other people. In eating or selling my apples, I harm no one. The set of resources in which people can have only usufructory rights will obviously not include goods which can be consumed or destroyed without harming future persons.

Second, interpreting the proviso as a harm principle can sometimes justify the destructive use of resources even when preservation of these resources would be necessary for the satisfaction of the basic needs of future persons. This would be so if, for example, the resources of the world were simply insufficient to supply the basic needs of both present and future persons. Under such
circumstances, it would be excusable to use these resources to meet the basic needs of current persons, even if using them will make them unavailable for the future. If there simply were not enough for both ourselves and those who will come after us, we would not be obliged to starve ourselves in order to preserve resources for future persons, who would also be obliged to starve themselves for the sake of still more distant future persons, who would be obliged... If we interpret the proviso as a harm principle, we do not thereby commit ourselves to the world of Lewis Carrol's White Queen, in which it is "always jam tomorrow, and never jam today." 239

7.6 Harm, Usufruct, and the Protection of Individual Liberty

Does the account of property rights given here provide adequate protection for individuals? There are two classes of individuals whose protection is at stake in the question: first, there is the class who stand at risk of having their interests set back by the appropriation of others. But second, it is important to show that this account provides adequate protection for the interests of property owners. Their interests might be set back if what now are understood to be full-blown property rights came to be understood as merely usufructory rights. Understood this way, their liberty with respect to their property is restricted. The class of circumstances in which it is justified for the government to interfere with people's use of what they own would be expanded. It must be shown that the interpretation recommended here provides adequate protection for members of both classes.

Some people have found Locke's theory too permissive. According to Arthur, among others, the proviso must be strengthened to prohibit appropriation, since appropriation is seen primarily as a threat to the interests of others. For such people, it has seemed reasonable to protect others from the potentially harmful appropriation of some by advocating an interpretation of the proviso which prohibits appropriation in a wider variety of cases. Thus Nozick and more recently Narveson have been criticized on the ground that the interpretation they offer would justify too much appropriation. If the argument of this chapter is correct, this is the wrong way to protect people from the appropriation of others. The problem is not that Nozick's or Narveson's proviso allows too much appropriation, rather that the rights which may be legitimately claimed are more restricted rights than these authors have appreciated.

In fact, restricting the conditions under which appropriation is justified may, be just the wrong way to protect the interests of others. I have argued that future persons are among those whose interests need to be protected, and that propertization is sometimes the best way to protect those interests. Especially in contexts likely to result in a "tragedy of the commons," the best way to protect future generations from harm may be to allow, rather than restrict, exclusive appropriation. Under such circumstances, restricting the proviso to allow less appropriation will thwart the aim it is intended to serve. John Arthur argues that we need to restrict the proviso in order to protect people from the harms of appropriation. But if 'harms to

others' are what is morally significant, we should simply prohibit harmful appropriation, as the interpretation I recommend suggests. This can better be accomplished by restricting the scope of the rights of appropriators than it could by restricting their opportunities to appropriate.

What then of the concern that understanding property rights as usufructory would inappropriately limit the rights of property owners? Several examples come to mind: In Michigan, developers have argued that their property rights in their land justify them in draining and developing large wetlands regions. Environmental advocates have argued that such development would irreparably harm the swampland ecosystems, and that these ecosystems should be preserved for the benefit and enjoyment of future generations. If the rights of property owners, in this case, are merely usufructory, then it might be justifiable to prohibit these developers from draining and developing in spite of the fact that they own the land to be drained and developed. If future Michiganders have a morally significant stake in the existence of wetlands in upper Michigan, then the view I have been advocating might well imply that property owners do not have the right to develop their land. Is this an inappropriate restriction on the liberty of property owners?

Examples like this might lead some to question whether usufructory rights constitute property rights at all. Loren Lomasky apparently would claim that they are not. He writes "The only bundle of rights that can intuitively be identified with ownership of a thing is the bundle that constitutes complete control over that
thing. Less inclusive bundles are an embarrassment for the property-in-things account. Are usufructory rights of the sort we have described here an embarrassment?

The answer to this question may depend not only on the structure of our concept of 'property,' but also on the theoretical function we want this concept to serve. It seems unlikely that our natural language concept of a 'property right' is itself sufficiently explicit to rule out usufructory rights. Concepts in natural language are usually not naturally detailed or explicit. So if one wanted to support Lomasky's claim by arguing that usufructory rights are not property rights at all, one would need to provide an analytic or reformative definition of 'property right,' and to show that we have good reason to accept this analysis or reformative definition. Then one would need to show that usufructory rights are excluded by this reformative definition. And even this would not show that rights in key resources are more robust than mere usufructory rights, though it would provide support for the claim that we should cease to regard such resources as 'property.' To support the stronger thesis, that is, the thesis that people can and do have full-blown property rights in the resources in question, it would be necessary to show that robust property rights in such resources serve a necessary function in any acceptable political theory. What is the theoretical function of the concept of 'property?'

For some, the central theoretical function of the concept of a property right is to support a conception of individual autonomy and liberty. For those who

have an antecedent commitment to a libertarian political theory, this commitment might preclude them from accepting any notion of property which could not function to justify a libertarian political regime. Less robust conceptions of property are less likely to provide the ironclad safeguards for free markets which are an important element of the libertarian view. Since usufructory rights are less robust than rights of full-blown ownership, and since (in Lomasky's terms) they constitute less than complete control over the objects owned, they are less likely to justify the radical libertarian state. It may be that the appeal, for Lomasky, of the libertarian conception of the state may, in part, be the source of his mistrust for limited conceptions of property rights. Alternately, one might simply be concerned to know whether the conception of property I have defended here would justify too much interference with individual rights. And in general, this worry could be based on well founded doubts concerning the efficacy of state intervention, and the importance of strong institutional safeguards for individual rights.

My response to this worry is three-fold: First, unless the absolute rights which Lomasky and Nozick (among others) use to justify the libertarian state can be justified, we should not use them as the foundation of a political theory. To do so either leaves the basis of political theory mysterious (as in Nozick) or at least insufficiently justified (as, I would argue, in Lomasky's own defense of robust property rights). It would be better to start with a defensible conception of rights, including property rights, and build from that conception. Second, we may recognize that if this conception of property rights failed to provide adequate
protection for property owners, this would indeed constitute a significant objection. But the conception of property I have recommended here would provide justification for interference with individuals’ use of their property only when this use is likely to cause harm. It is therefore based on a principle which is not only consistent with the individual rights Libertarians hold dear, it is a principle essentially designed to protect these individual rights. Finally, adopting a conception of property rights as usufructory rights would not, in practice, justify widespread interference by the government. For many of the arguments against government interference apply with undiminished force in spite of the arguments raised here. It must still be recognized, for example, that under most circumstances individuals will be in a better position to decide how their property should be used than will government experts. In addition, all the economic arguments concerning the inefficiency of centralized authority and the circumstances of ‘government failure’ (as opposed to ‘market failure’) would support the view that we should place careful restrictions on the government’s ability to interfere with people’s use of what they own. The arguments concerning government inefficiency, and the perverse incentives of politicians decrease the likelihood that government intervention on behalf of future generations will succeed in its aims. These considerations should make us wary and suspicious of legislative intervention in general. But our suspicion should make us, as citizens, careful consumers of proposed legislative restriction. It should not provide categorical

**242** See Tullock (1967) for an excellent discussion of the incentives implicit in political bureaucracy.
objection when there is reason to believe that such legislation will effectively protect
the interests of future persons.

What the argument presented here shows, then, is not that government
intervention on behalf of future generations is always a good idea, nor still that all
legislation designed to protect and preserve the environment for the future is good
legislation. There are numerous examples of cases where well meaning fools have
made things worse by acting on good intentions. What we may legitimately conclude
is only this: when legislation designed to protect the basic interests of future persons
functions to restrict the rights of current persons, and the liberty of current persons to
use their property as they see fit, current property rights will not always trump the
interests of future persons. When environmental legislation can reasonably be
expected to increase the probability that the basic needs of future persons will be
met, when such legislation would increase the probability that a desirable inter-
temporal production/consumption path will be achieved, then merely pointing out the
fact that it would also limit people's right to use their property as they see fit will not
be a conclusive argument against such legislative restriction.

7.7 Conclusion

In Chapter Six, I presented some preliminary considerations in favor of
interpreting Locke's proviso as a harm principle. This chapter has considered a set
of additional arguments in support of that interpretation of the Lockean theory of
initial appropriation. I have shown that this interpretation allows at least some appropriation, and have considered the circumstances in which appropriation should be considered harmful. I have argued that this interpretation of Locke's theory implies that the rights current persons have in natural resources needed by future persons do not include a claim to degrade or destroy these resources. That is, these rights do not include this claim at least when 1) destruction or degradation of these resources is not necessary for the satisfaction of the basic needs of current persons, and 2) their destruction or degradation would make it impossible for future persons to satisfy basic needs. In general, people have no claim to destroy or degrade when the claims of future persons defeat their claim to do so. Since future persons can be harmed by the actions of present persons, and since they have the same basic right to have their interests given due weight in the context of present day decision making, these restrictions on current property rights reflect only the basic obligation not to harm others.

The notion that people's rights in land and natural resources are less extensive than full-blown property rights has a long history. Thomas Jefferson was fond of saying that "The earth belongs in usufruct to the generations of the living." While Jefferson's primary concern was the ability of current agreements (like the constitution) to restrict the liberty of future persons, he clearly recognized the need to insure that current persons will not harm those who do not yet exist by destroying the

substance of this usufructory property. In a similar vein, George Perkins Marsh wrote, in 1864, that "man has too long forgotten that the earth was given to him for usufruct alone, not for consumption, still less for profligate waste." And more recently, Bertrand Russell writes "Private property in land has no justification except historically through power of the sword," though he clearly believed that people had a valid claim to use land, and that they had exclusive rights in what they could produce by their labor.

The argument I have given here provides a Lockean foundation for the conception of property rights implicit in these quotes from Jefferson, Marsh, and Russell. This conception is based on a deep conviction that our current institutions, including not only the institution of private property, but other political and social institutions as well, must be responsive to the needs of the future. Social institutions which recognize full blown ownership rights, or even more extensive property rights in land and natural resources would inappropriately place these resources at the mercy of markets. As we have seen (in Chapter 5), there is good reasons to doubt that markets will adequately provide for the morally significant basic needs of future persons. Mercy, regrettably, is not among the virtues of markets.

Unless we had reason to believe that restrictions on markets would impermissibly violate the property rights of current persons, the argument of Chapter 5 would provide a strong *prima facie* case in favor of restrictions on the free

operation of the market when such restrictions could be expected to increase the probability that a desirable inter-temporal production/consumption path will be achieved. The arguments of Chapter 6, and this final chapter, reinforce that case. If current people's claims on resources constitute usufructory rights rather than more robust property rights, then these rights will not be violated by environmental restrictions which prohibit people from destroying or degrading natural resources needed by future persons. Arguments against such restrictions should therefore be based on the likelihood that they will fail to protect the interests of the future, not on the claim that they violate rights.
Chapter 8

CONCLUSIONS

The conclusions I hope to have supported in this essay can be succinctly expressed in five central theses. The first three of these theses concern our moral obligations concerning future persons: First, there is no conceptual difficulty in supposing that members of the existing generation may have obligations to future generations, and in fact, we do have such obligations. Second, these obligations are not different in the context of different person choices. If we individuate future persons merely as "those who will experience the consequences of our current decisions," Parfit's "Non-Identity Problem" does not arise. Third, the time at which a person exists is not relevant from the moral point of view. Specifically, the fact that future persons live in the future is not a good reason for giving their interests less weight in our current deliberations.

The last two theses concern the structure of our social institutions, and the way in which they should be structured so that they will not cause harm to future persons. If the fourth thesis is correct, then given the incentive structures implicit in free economic markets, it is unlikely that the free operation of markets will adequately provide for the interests of the future. Contrary to the theoretical predictions of many economists, there is good reason to think that free markets will inappropriately sacrifice the good of future persons for relatively short-run benefits.
This provides one kind of argument against, for example, the categorical economic liberty defended by some libertarian theorists. Finally, recognition of the moral significance of future persons should cause us to re-evaluate our conception of property rights in natural resources. Such rights, I have argued, are not rights of full blown ownership, but limited claims to use and consume the fruits of these resources. In structure, they are closer to usufructory rights than they are to full blown property rights. Thus restrictive legislation designed to protect the interests of future persons should not be rejected merely on the ground that such legislation would violate people's right to use their property as they see fit.

In an important sense, these claims are preliminary steps toward a theory of intergenerational justice, and not a full theory in themselves. Many of the problems associated with intergenerational justice have not been solved here. These include problems of population theory, concerning how many people there should optimally be, and what criteria we should use to choose among the different possible futures we could bring about. A full theory of intergenerational justice should consider the problem of inter-temporal distribution of welfare or goods, and articulate principles which could be used at present to respond to the claims of the future. For now, we will have to leave that task to the future.
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