

What's Wrong With Dumping Radioactive Wastes in the Ocean? The Surprising Ethical and Policy Analysis Implications of the Problem of Person-Altering Consequences

by Gregory Scott Crespi

Editors' Summary: A commonly cited rationale for environmental protection is the ethical obligation to protect the planet and its resources for the use and enjoyment of future generations. However, as Gregory Scott Crespi argues in this Article, this rationale, if based on conventional ethical premises, is misguided. He explains that policy decisions have person-altering consequences, meaning that any decision made in the present will eventually cause entirely different future generations to be born than if the decision were made differently. Thus, we have no ethical obligations to future generations distant enough from us in time for their members to all have had their genetic identities significantly altered by those person-altering consequences, since any policy that we might pursue would be endorsed by those future persons since it would be a necessary condition of their existence.

I. Introduction

Should we put all of our high-level radioactive wastes into reinforced steel barrels that have perhaps 200-year expected containment capabilities in a salt water environment, and then simply dump them all overboard into the depths of the Pacific Ocean and forget about them? This policy would free billions of dollars of resources now devoted each year to radioactive waste storage efforts to be redirected to meet any of a number of pressing social needs. Despite these substantial benefits, most people would regard such a radically present-oriented policy to be an egregious violation of our ethical obligations to distant future generations. Even scholars who deal professionally with issues of intergenerational equity generally assume that we have ethical obligations to distant future generations and focus their attention on the difficult but derivative questions of how best to balance these ethical obligations against our obligations to existing persons.¹

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1. "Most analysts (and we believe all of the essays in the conference) [a 2007 *University of Chicago Law Review* Symposium on Intergenerational Equity and Discounting] take the position that future generations should count, and most likely count equally to those currently alive." David A. Weisbach & Cass R. Sunstein, *Symposium on Intergenerational Equity and Discounting*, 74 U. CHI. L. REV. 1, 1 (2007) (introduction to a symposium issue that also included contributions from Mathew Adler, Tyler Cowan, John Graham, Geoffrey Heal, Louis Kaplow, Douglas Kysar, Eric Posner, Dexter Samida & David Weisbach, Cass Sunstein & Arden Rowell, and Kip Viscusi; *id.* at 5-246).

As I will attempt to demonstrate in this Article, however, when one gives more thought to the long-term consequences of radically present-oriented policies it becomes clear that the ethical questions they present are actually quite subtle and difficult to resolve in light of what I will call the problem of person-altering consequences, which I will discuss in this Article in some detail. It may be that such policies should not be pursued because of ethical constraints. However, my conclusion is that if the ethical questions that such policies present are analyzed solely on the basis of conventional secular and consequentialist ethical premises² (hereinafter referred to as "conventional ethical premises"), they should be regarded as empirical questions to be re-

2. I must emphasize that my arguments herein will be based solely upon conventional secular and consequentialist ethical premises. By the phrase "secular premises" I refer to ethical premises that are derived from reflections on the human condition that are agnostic with regard to the question of the existence of a supreme supernatural being. I will not address in this Article the difficult question as to whether there is a sufficient nonsecular basis provided by one or more of the religious traditions for recognizing an ethical obligation to the members of distant future generations. By the phrase "consequentialist premises" I refer to the ethical premise that actions have ethical relevance only to the extent that they have consequences for the rights or interests of specific persons. I also will not consider in this Article whether there exist any sufficient secular but non-consequentialist grounds, Kantian categorical imperatives or otherwise, for asserting that we have any ethical obligations to the members of distant future generations, or to the human race as a whole, that exist apart from any ethical obligations that can be grounded in the consequences of our conduct for specific persons. My arguments in this Article are thus addressed solely to the relatively narrow, yet practically quite important, question as to whether those conventional secular and consequentialist ethical premises that are usually invoked as a basis for our having ethical obligations to existing persons similarly apply when conduct that will impact the welfare of the members of distant future generations is under consideration.

solved on a case-by-case basis, and the decision whether to undertake such policies should in each instance be based solely upon an assessment of the policy's effects on existing persons, and not upon any claimed ethical obligations to distant future generations.

I will also consider in this Article policies that would impose current sacrifices in order to achieve long-term environmental or other benefits for distant future generations, such as, for example, measures that would reduce current fossil fuel use to mitigate long-term global warming trends. Many people who have considered these questions believe that we are under an ethical obligation to take such measures that would enhance the welfare of distant future generations, at least when those policies will have significant long-term benefits and will impose only relatively minor current burdens.³ Once again, however, I will attempt to show that as a result of the problem of person-altering consequences such policies present far more subtle and difficult ethical questions than are commonly recognized, and that reasoning from conventional ethical premises again leads to the conclusion that the decisions whether to undertake such measures should be made on a case-by-case basis that rests solely upon an empirical assessment of their consequences for existing persons, and not upon any claimed ethical obligations to distant future generations.

Let me briefly summarize my overall conclusions at the outset. I do not dispute that there is a widely shared intuition that we have ethical obligations to distant future generations to undertake policies that will benefit them, and to eschew policies that will impose significant harms upon them, at least when these choices do not require excessive levels of current sacrifice relative to the magnitude of their long-term benefits. Some people ground this sense of ethical obligation upon their religious beliefs or upon secular but non-consequentialist ethical premises, while others base it upon conventional ethical premises. However, discussions among philosophers and other scholars in recent decades demonstrate that in light of the problem of person-altering consequences, it is difficult, if not impossible, to articulate a satisfactory rationale for this intuition solely on the basis of conventional ethical premises.⁴ I have concluded from a review of much of this literature that with regard to future generations distant enough from us in time for their members to all have had their genetic identities significantly altered by those person-altering consequences (hereinafter referred to collectively as either distant future generations or future persons) we have no ethical obligations that can be grounded on conventional ethical premises to take into account their rights or interests in making environmental or other policy decisions, since as I will discuss below in some detail virtually nothing that we could possibly do would harm any specific future persons, counter-intuitive as this claim may seem. There is a general, though not unanimous, consensus among those scholars that have considered the matter that supports this conclusion.⁵

3. See generally the Symposium contributions cited *supra* note 1.

4. See, e.g., DEREK PARFIT, REASONS AND PERSONS, 351-79, 451-52 (1984) [hereinafter PARFIT, 1984]; see also Thomas Schwartz, *Obligations to Posterity*, in OBLIGATIONS TO FUTURE GENERATIONS 3-13 (Richard Sikora & Brian Barry eds., 1978) [hereinafter Schwartz]; Gregory S. Kavka, *The Paradox of Future Individuals*, 11 PHIL. & PUB. AFF. 93-112 (1982) [hereinafter Kavka].

5. See, e.g., PARFIT, 1984, *id.* at 377-79; Schwartz, *id.* at 11; Doran Smolkin, *Towards a Rights-Based Solution to the Non-Identity*

Whether we have an ethical obligation of stewardship to the human race viewed in its entirety across time that exists apart from our ethical obligations to respect the rights and interests of specific persons is a more difficult question that scholars have not been able to resolve.⁶ Is the human race a morally significant entity that somehow exists apart from the specific persons that have lived or who will live in the future, and to which we owe ethical duties that should constrain us from pursuing certain policies even though they would not harm any specific persons? There is, as I have noted, a widely shared intuition that this is the case, but I do not believe that this intuition can be justified on the basis of conventional ethical premises. I have concluded that we have no duties to the human race as a whole that can be grounded on those premises apart from our duties to respect the rights and interests of specific individuals. Since, as I will argue below, virtually nothing that we could do would harm the specific future persons that will comprise distant future generations, we therefore have no ethical obligations at all to those distant future generations that can be grounded upon those premises. Seemingly radically short-sighted policies such as ocean dumping of high-level radioactive wastes, or choosing to not take expensive measures that would ameliorate long-term global warming trends, should therefore not be rejected out of hand as ethically inconsistent with those premises.

My conclusion is that if we reason from those premises these kinds of radically present-oriented policies should instead be evaluated on a case-by-case basis by the same standard normative criteria that are derived from those premises and that we conventionally apply to evaluate policies that will impact only existing persons.⁷ The effects of our

Problem, 30 J. SOC. PHIL. 194, 195 (1999); William Grey, *Possible Persons and the Problems of Posterity*, 5 ENVTL. VALUES 161, 168 (1996) (all agreeing with this conclusion that we are unable to harm specific members of distant future generations). *But see also* DAVID BENATAR, BETTER NEVER TO HAVE BEEN: THE HARM OF COMING INTO EXISTENCE (Oxford Univ. Press 2006), at 184 ("Bringing people into existence always inflicts serious harms on those people.").

6. See *infra* notes 43-49 and accompanying text for discussion of several attempts to justify on secular, consequentialist grounds an ethical obligation to the human race as a whole apart from our obligations to specific individual persons. Again, I will not consider in this Article the merits of any religious foundations for ethical obligations to distant future generations, nor the merits of any secular but non-consequentialist foundations for such obligations. See *supra* note 2.

7. The conventional analytical framework used for guiding policy decisions is the use of a cost-benefit analysis (increasingly being referred to by practitioners as "benefit-cost analysis") of the various consequences of the policy in question, with the impacts of the policy defined relative to a hypothetical, counterfactual baseline state of affairs, and then each impact is valued on the basis of the willingness to pay of the affected persons, and with future impacts also discounted at some appropriate discount rate before aggregation with current impacts. Such cost-benefit analyses are generally accompanied by analyses of the distributional consequences of the policy relative to the hypothetical baseline state of affairs which is usually conducted in a more explicitly utilitarian manner that abstracts to some extent from the distribution of wealth, and also by evaluation of the impact of the policy upon some specification of "rights" constraints. See generally Gregory Scott Crespi, *Valuation in Cost-Benefit Analysis: Choosing Between Offer Prices and Asking Prices as the Appropriate Measure of Willingness to Pay*, 39 J. MAR. L. REV. 429, 429-36 (2006).

For purposes of this Article, I will take this conventional cost-benefit policy analysis framework that has been developed from welfare economics premises as a given, and will not address any of the numerous and controversial measurement or discount rate issues that it

choices on the welfare of distant future generations should not, however, be given any weight in such an analysis except to the extent that the welfare of existing persons is indirectly affected by those future consequences.⁸ If, however, we reason from religious premises, or from secular but non-consequentialist premises, then the effects of our choices on distant future generations may possibly be of ethical relevance, depending upon the particular premises embraced. However, we need to be more explicit in recognizing that those kinds of premises are a necessary predicate to our having any ethical obligations to distant future generations, since no such obligations can be grounded in conventional ethical premises.

Before dismissing my views as irresponsible and dangerous, if not bordering on lunacy, it is important that the reader understand that the ethical framework for policy assessment that I recommend will not necessarily lead to the endorsement of all radically present-oriented policies such as ocean dumping of high-level radioactive wastes that would provide current benefits but which would probably also impose substantial and adverse long-term effects on distant future generations. Nor will it necessarily lead to rejection of all altruistic, future-oriented policies such as global warming mitigation efforts that would impose current burdens on behalf of distant future generations. Let me be clear here as to the somewhat more limited though still significant scope of my claim.

I am not a paternalist. To the extent that people believe on the basis of their religious commitments, or on the basis of secular but non-consequentialist premises that they accept as valid, that we have ethical obligations to distant future generations, or to the extent that people believe that we should make sacrifices to improve the welfare of distant future generations simply as altruistic acts of charity that go beyond any obligations to do so, those beliefs should, in my opinion, be given the same weight in the decisionmaking process as are any other beliefs that people may hold with comparable intensity. In addition, to the extent that people believe that we do have ethical obligations to distant future generations that derive from conventional ethical premises, and desire that policymakers take those beliefs into account in their deliberations, then even though my conclusion is that those desires are based on erroneous reasoning I think that they should still be given the same weight in decisionmaking as are people's other expressed desires of comparable intensity. I fully endorse the use of conventional

presents, or any of the numerous issues presented by the specification of the distributional limitations or rights constraints. These methodological issues are discussed extensively elsewhere in the literature. See generally Crespi, *id.* My focus in this Article will instead be upon the question of whether there exists an ethical obligation to distant future generations that can be grounded upon conventional ethical premises, and which would justify also incorporating impacts upon those future persons in some manner into this conventional analytical framework. I will, however, briefly discuss in Part IV the rather dramatic consequences of my negative conclusions in this regard for the utility of cost-benefit analyses conducted in the conventional fashion.

8. If, for example, some existing person includes the welfare of some or all of the members of distant future generations in their utility function, then the projected adverse effects of a current policy on those distant future generations will indirectly impose a psychological burden on that person, should she become aware of and agree with the accuracy of those projections, which would then make those projected consequences of ethical relevance to the decision whether to undertake that policy.

cost-benefit analyses and/or more explicitly utilitarian consequentialist-criteria, subject to various rights-respecting limitations and distributional constraints, that take into account peoples' expressed preferences without paternalistically first screening them for "correctness" as to their underlying ethical premises, or as to their logical validity with regard to those premises.

For example, if there is a widespread and strongly held belief that ocean dumping of high-level radioactive wastes would violate some ethical obligation to distant future generations, or if most people want as an act of charity to avoid burdening distant future generations with the significant pollution problems that this policy would likely cause for them, then let's not do it. Similarly, if the majority of people want substantial sacrifices to be made so as to reduce long-term global warming problems for distant future generations, then such sacrifices may be justified on that basis regardless of the underlying premises or rationale for those desires. My point is simply that a troubling but unavoidable implication of the problem of person-altering consequences that I will discuss below is that we do not have any ethical obligation to distant future generations to take such measures that can be logically derived from conventional ethical premises; we simply do not "owe it to them" to make these sacrifices on their behalf. If one accepts this conclusion then one should agree that the welfare of distant future generations should be taken into account in policy deliberations *only* to the extent that existing persons believe that we have ethical obligations to them, or favor our making charitable sacrifices on their behalf even absent any ethical obligations to do so, and not because we truly do have such ethical obligations that can be grounded on those premises.

If I am correct that we do not have any ethical obligations to distant future generations that can be grounded on conventional ethical premises, but that we should nevertheless respect in a non-paternalistic fashion the preferences of those persons who believe for one reason or another that we have such obligations, and also respect the preferences of those persons who favor making our sacrifices for the benefit of distant future generations simply as an act of charity, what practical significance would this have for environmental policy? It might appear that the significance of recognizing that we do not have any ethical obligations to distant future generations that can be grounded on conventional ethical premises would be completely overwhelmed by the weight that I claim should be given to peoples' beliefs that we do have such obligations, and to their altruistic inclinations, since these beliefs and inclinations are pervasive and often rather fervently embraced.⁹

This may well be so at the present moment. However, it is possible that over time more people will become aware of and reflect upon the problem of person-altering consequences. If so, many of them may well reach the same conclusions that I have that ethical obligations to distant future generations cannot be grounded on conventional ethical premises. For at least some of these people, this realization will likely lead to reduced support for our making sacrifices on behalf of distant future generations. Consequently, if

9. It would, however, have immediate implications for "wrongful life" claims, where as will be made evident by my later analysis that a person asserting such a claim on his own behalf should be regarded as a member of a distant future generation with regard to the events that led to his birth and therefore denied standing on the basis that no injury to him has resulted from his birth.

policymakers come to accept my argument that we do not have any ethical obligations to distant future generations that can be grounded upon those premises, and that current sacrifices on behalf of distant future generations can therefore be justified only on the basis of showing appropriate respect for people's beliefs without regard to their correctness, then if those beliefs regarding the existence of ethical obligations to distant future generations wane in force over time this could have major significance for our decisions, both with regard to radically present-oriented policies such as ocean radioactive waste dumping and with regard to future-oriented policies involving current sacrifices such as global warming mitigation efforts. We then could not justify continuing to make the same level of current sacrifices for the benefit of distant future generations unless we became more explicit about embracing religious or secular but non-consequentialist premises as the necessary predicate for grounding our ethical obligations to do so.

I will in this Article be making a number of simplifying assumptions in order to focus attention on the main issue here presented: whether we owe any ethical obligations to distant future generations. I will as previously emphasized confine my analysis to whether we have ethical obligations to distant future generations that can be justified on the basis of conventional ethical premises, and will not attempt to address the merits of any religious or secular but non-consequentialist justifications that can be offered for such obligations.¹⁰ In addition, I will be taking as a given the conventional cost-benefit policy analysis framework that is based on the premise that we do have ethical obligations to respect the rights and interests of existing persons, so as to focus exclusively on the question of whether there are also comparable ethical obligations to distant future generations that should somehow be incorporated into this framework. I will also be making some (hopefully plausible) simplifying assumptions about how future persons would likely respond to various hypothetical questions regarding their preferences with regards to current policy choices.¹¹

10. See *supra* note 2.

11. For example, I will assume that if future persons were somehow presented with the stark binary choice between being born into a world which poses some substantial difficulties for them, and nonexistence, that a large enough proportion of them would so resoundingly choose to opt for being born that it justifies our assuming that if we pursue a policy that is a necessary condition for the existence of a group of specific future persons then we will not be thereby harming any of those specific future persons, even if the policy results in a difficult environment for them to live in.

Derek Parfit makes the somewhat stronger assumption that the approval by future persons of our pursuing those policies that are the necessary conditions for their existence would be unanimous; that pursuing those policies "will be worse for no one." Derek Parfit, *Future Generations, Further Problems*, 11 PHIL & PUB. AFF. 113, 115-17 (1982) [hereinafter Parfit, 1982]. In sharp contrast, David Benatar in his recent book has taken the diametrically opposed and highly controversial position that "coming into existence is always bad for those who come into existence," BENATAR, *supra* note 5, at 4, and that "[b]ringing people into existence always inflicts serious harms on those people," *id.* at 184. Benatar concludes that "it would be better if humans (and other species) became extinct . . . [and that] it would be better if this occurred sooner rather than later." *Id.* at 194. I prefer to take an intermediate position—much closer to Parfit's views than to those of Benatar—that while under some scenarios there may possibly be some future persons who would prefer nonexistence to being born into the miserable circumstances that they are presented with as the consequences of our policies that led to their birth, the overwhelming majority of future persons are likely to so strongly favor existence over nonexistence under virtually any circumstances that we could create for them with our actions that we are

In the balance of this Article, I will proceed as follows. Part II will describe and discuss the problem of person-altering consequences. In Part III I will discuss the implications that recognition of this problem has for our views regarding our ethical obligations to distant future generations under conventional ethical premises. Part IV will briefly discuss the implications of the problem of person-altering consequences and its ethical corollaries for the conduct of cost-benefit analysis. Part V will present a brief overall conclusion.

II. The Problem of Person-Altering Consequences

The noted British philosopher Derek Parfit first articulated in 1976¹² a simple yet profound insight that philosophers have since labeled "the Non-Identity Problem,"¹³ and to which I will refer in this Article as the problem of person-altering consequences.¹⁴ This insight calls into serious ques-

ethically justified in pursuing policies that may result in some few persons being born into circumstances that they regard as inferior to nonexistence. I concede that this position allows for the potential imposition of unconsented—to harm on perhaps a fairly substantial number of specific future persons and may therefore be unacceptable to a strict Kantian, even on consequentialist grounds alone, although I will also point out that any policies whatsoever that we pursue, including complete inaction, will raise this possibility.

12. Derek Parfit, *On Doing the Best for Our Children*, in ETHICS AND POPULATION 100-15 (Michael Bayles ed., 1976) [hereinafter Parfit, 1976]. Gregory Kavka argues that Parfit's insight was also discovered independently at approximately the same time by Robert Adams and Thomas Schwartz, Kavka, *supra* note 4 (citing Robert M. Adams, *Existence, Self-Interest, and the Problem of Evil*, NOUS 13 (1979), and also citing Schwartz, *supra* note 4). Parfit further discusses his insights in Parfit, 1982, *supra* note 11, in PARFIT, 1984, *supra* note 4, at 351-80, and in Derek Parfit, *Comments*, 96 ETHICS 832 (1986) [hereinafter Parfit, 1986].
13. Parfit later labeled this problem as "the Non-Identity Problem," PARFIT, 1984, *supra* note 4, at 378, and it is generally so described by other academic philosophers. See, e.g., Smolkin, *supra* note 5, at 194; David Wasserman, *The Nonidentity Problem, Disability, and the Role Morality of Prospective Parents*, 116 ETHICS 132 (2005). The problem also is described by some other scholars as the "Parfit Paradox." See, e.g., Kavka, *supra* note 4, at 95 ("[Parfit's] argument poses a . . . Paradox of Future Individuals"); Edith Brown Weiss, *What Obligation Does Our Generation Owe to the Next?: An Approach to Global Environmental Responsibility: Our Rights and Obligations to Future Generations for the Environment*, 84 AM. J. INT'L L. 198, 204 (1990) (referring to this insight as "Derek Parfit's famous paradox"); Lothar Gundling, *What Obligation Does Our Generation Owe to the Next?: An Approach to Global Environmental Responsibility: Our Responsibility to Future Generations*, 84 AM. J. INT'L L. 207, 210 (1990) (referring to this insight as "Parfit's paradox"). Those scholars who regard Parfit's insight as posing a paradox commonly state the question that he poses along the lines of "How can we owe a duty to future persons if the very act of discharging that duty wipes out the very individuals to whom we allegedly owe that duty?" See, e.g., Anthony D'Amato, *What Obligation Does Our Generation Owe to the Next?: An Approach to Global Environmental Responsibility: Do We Owe a Duty to Future Generations to Preserve the Global Environment?*, 84 AM. J. INT'L L. 190, 191 (1990). I prefer to pose the problem as a non-paradoxical though difficult question of determining the ethical implications of policies that have among their other long-term effects pervasive person-altering consequences; the elimination of the existence of all yet-unborn future persons who would have been born absent the policy's impacts, and the birth instead of an entirely different group of future persons.
14. In my opinion, Parfit's own "Non-Identity Problem" label is more apt than the "Parfit Paradox" label because the question is not really a paradox so much as it is a conceptual problem regarding ethical obligations. However, Parfit's label obscures somewhat the precise nature of the problem for those who are not academic philosophers and are not familiar with the problem and the body of scholarship that it has engendered. I therefore will use in this Article the more straightforward descriptive phrase "the problem of person-altering consequences."

tion whether we have any ethical obligations at all to distant future generations that can be justified on conventional ethical premises. While this problem has fostered substantial (though inconclusive) discussion among philosophers and other scholars over the last three decades at an abstract, academic level regarding its ethical significance,¹⁵ its dramatic implications for policymakers have not yet been meaningfully addressed.

In this brief Article I will not attempt to fully articulate or resolve the complex philosophical arguments that have been offered regarding the problem of person-altering consequences, although I will reference much of that literature for those philosophically oriented readers who wish to later explore this problem in a more rigorous and systematic fashion. I will instead discuss the problem in a more condensed and straightforward manner that is intended to be helpful to academics in other fields and to lawyers and other persons actively involved in environmental policy matters who are not deeply versed in these technical philosophical debates, but who nevertheless wish to better understand the nature of the problem of person-altering consequences and its implications for ethical conduct and practical policymaking, particularly in the environmental law and policy area.

Parfit has clearly been the primary instigator of and contributor to discussions of the difficulties involved in assessing the ethical implications of the person-altering consequences of policies through several works that he published over the 1976 to 1986 decade.¹⁶ The most significant of these efforts were his seminal 1976 article¹⁷ and

15. See, e.g., Adams, *supra* note 12; Schwartz, *supra* note 4; Kavka, *supra* note 4; James Woodward, *The Non-Identity Problem*, 96 ETHICS 804-31 (1986); Smolkin, *supra* note 5.

16. Parfit, 1976, *supra* note 12; Parfit, 1982, *supra* note 11; PARFIT, 1984, *supra* note 4; Parfit, 1986, *supra* note 12.

17. Parfit, 1976, *supra* note 12. In this 1976 essay, Parfit uses the hypothetical situation of a woman deciding whether to postpone becoming pregnant until she recovers from an illness that would result in any child conceived being born with a handicap to illustrate the person-altering consequences of a decision for those potential persons who as a result will now not be born. *Id.* at 100-01. Parfit notes that if the pregnancy is postponed and her child is later conceived after the illness is cured, the child that would initially have been born will not now be born without the handicap, but instead will never be born at all. *Id.* at 101. It is instead someone else with a different genetic endowment that will be born without the handicap.

Whether a handicapped child is better off for not being born is an impossible question to answer in abstract, general terms. It seems to me plausible that most if not all handicapped persons would prefer their lives to nonexistence, particularly if the handicaps are of lesser severity. See *supra* note 11. A mother who decides to become pregnant while suffering such an illness and who therefore bears a handicapped child cannot be criticized on the basis of a utilitarian assessment of the consequences for the child, or on the basis of other comparable normative criteria that focus solely upon the rights and interests of that child, for acting wrongly with regard to her child unless we assume that the child would have preferred nonexistence to being born. *Id.* Such a sweeping and counterintuitive assumption about the nature of the preferences of future persons seems to me unwarranted. But see BENATAR, *supra* note 5. I will in this Article instead make what I regard as the more plausible assumption that future people would prefer existence with physical handicaps, or in a world with significant environmental constraints, to nonexistence.

To illustrate the complementary future persons-now-born aspects of policies with person-altering consequences Parfit in this essay poses the hypothetical situation of a policy measure that would have only positive effects upon existing persons, but that would also have very adverse effects for future persons. *Id.* at 101-02. He notes that absent the implementation of the policy those particular future persons adversely affected would never have been born, and he argues that they would prefer living subject to the adverse effects of the policy at issue to the alternative of never having been

born. *Id.* Blanket criticism of even those policies that have pervasive and possibly even catastrophic impacts upon future persons is again unwarranted if those persons would prefer even a difficult existence over nonexistence.

18. PARFIT, 1984, *supra* note 4. Parfit again revisited the questions posed by person-altering consequences in this comprehensive 1984 book, now labeling the issue as the "Non-Identity Problem," *id.* at 378 ("This problem arises because, in the different outcomes, different people would exist. I therefore call this the Non-Identity Problem.") and devoting an entire chapter to its analysis, *id.* at 351-79, that drew heavily upon his earlier 1982 article, PARFIT, 1984, *supra* note 4. After an extended (and unfortunately somewhat obscure) analysis of numerous hypothetical situations Parfit concludes by reasserting his earlier position that a policy that has person-altering consequences will not be worse for those persons thereby born as a result of the policy than would be their nonexistence should the policy not have been implemented. *Id.* at 378 ("One effect of choosing this [specific hypothetical] policy is a catastrophe that kills thousands of people. This effect is clearly bad, even though our choice will be worse for no one.").

Parfit takes in this book what he labels the "No Difference View" that the fact that a policy will have person-altering consequences and therefore will not be worse for any specific individual still should be judged to be undesirable on moral grounds; that person-altering consequences that make a policy worse for no one ultimately make no difference in a moral evaluation of that policy. *Id.* at 366-71. He also concludes his chapter on the Non-Identity Problem by reaffirming his earlier broad, aspirational claim first made in his 1982 article, Parfit, 1982, *supra* note 11, at 169-72, that it may be possible to formulate a valuation approach that appropriately addresses the problem of person-altering consequences, and which can justify moral condemnation even of policies that hurt no one. PARFIT, 1984, *supra* note 4 at 377-79. He generically labels this approach "Theory X," *id.* at 378, and states that he will later in the book attempt to formulate such a theory ("In what follows I will try to find Theory X."), *id.* at 379. He predicts once again that this criterion will not be based upon an assessment of whether its consequences are good or bad for affected future persons:

To solve the Non-Identity Problem, we must revise the principle [of valuing policies with regard to their impacts upon affected persons]. . . . We need a wider principle to cover cases where, in the different outcomes, there would be different numbers of people [as well as different persons]. This needed principle I will call Theory X. Only X will fully solve the Non-Identity Problem. . . . We can predict that Theory X will not take a person-affecting form. The best theory about beneficence will not appeal to what is good or bad for those people for whom our acts affect.

Id. His final and more pessimistic conclusion at the end of this book, however, is that he has again failed to formulate an approach that adequately addresses the problem of moral evaluation in the context of person-altering consequences without creating other difficulties that render the approach unacceptable, although he still optimistically believes that it might yet be possible to do so. "Though I failed to discover X, I believe that, if they tried, others could succeed." *Id.* at 443.

Parfit notes several properties that his envisioned "Theory X" would have to satisfy to be an adequate ethical approach: "Theory X must solve the Non-Identity Problem, avoid the Repugnant and Absurd Conclusions, and solve the Mere Addition Paradox. I failed to find a theory that can meet these four requirements." *Id.* at 443. "Most of us would believe that the Repugnant and Absurd Conclusions are what I have called them. Until we know how to avoid both conclusions, and how to solve both the Non-Identity Problem and the Mere Addition Paradox, we will have beliefs that we cannot justify, and that we know to be inconsistent." *Id.* at 452.

The Repugnant Conclusion as described generally by Parfit, *id.* at 381-90 is the position that for any population of people who have a given average quality of life, there must be some much larger imaginable population whose existence, if other things are equal, would be better even though its members have lives that are barely worth living. *Id.* at 388. The Absurd Conclusion as described generally by Parfit, *id.* 391-417 is the position that if we assume that the positive value of a quantity of people has, in any period, an upper limit, while there is no such upper limit to the negative value of a quantity of people, under two alternative policy outcomes where all the lives that

debate.¹⁹ Stated succinctly, Parfit's central insight is that virtually any human action is sure to have at least minor effects on the timing of some acts of sexual reproduction, leading to different sperm-egg fertilizations than would otherwise have taken place, and consequently will have over time exponentially cascading person-altering consequences as now genetically different individuals mature and influence the sexual behavior of a broader and broader circle of people.²⁰ After a relatively short period of time, in a historical sense, of probably no more than a few decades at most, this will lead to the entire human population being composed of individuals with significantly different genetic endowments from those persons that would have existed absent that action.²¹

are ever lived are assumed to be, both in number and quality, identical, then it would be better if all of those people lived in different centuries than if they all lived in the same century. *Id.* at 411-12. This absurd conclusion to Parfit renders those particular underlying assumptions about the asymmetrical valuation of goodness and badness untenable. *Id.* at 412. The Mere Addition Paradox as described in a very complex fashion by Parfit in a manner I am unable to succinctly paraphrase, *id.* at 419-41, is an inconsistency that can arise when the welfare of three different persons are compared under certain seemingly reasonable assumptions.

19. Parfit, 1982, *supra* note 11; Parfit, 1986, *supra* note 12. Parfit later revisited the questions posed by the person-altering consequences of policies that he had first raised in his original 1976 article in a later 1982 article. Parfit, 1982, *supra* note 11, that was written as a companion piece to a shorter article on the topic by Gregory Kavka, Kavka, *supra* note 4, that Parfit's 1976 essay had helped to inspire. Kavka, *supra* note 4, at 93. After a long and detailed analysis of the problem, and of Kavka's modified Kantian categorical imperative-type proposals for addressing it, Parfit once again concluded that policies with person-altering consequences simply cannot be properly evaluated on the basis of whether the results of those policies are better or worse for the rights or interests of future persons. Parfit, 1982, *supra* note 11 at 171-72. He again argued that "some new principle of beneficence" not yet identified that is not based on those person-affecting considerations will be needed to judge the merits of such policies. *Id.* He closed by stating that while it would be quite difficult to formulate such a new principle, it would be hasty to conclude that it was impossible to do so, because "non-religious moral philosophy is a very young subject." *Id.* at 172.

Parfit's 1986 *Ethics* article, Parfit, 1986, *supra* note 12, was included in an *Ethics* symposium issue focusing on his 1984 book *Reasons and Persons*, and which also included contributions by Brian Barry, Bart Gruzalski, Shelly Kagan, Arthur Kuflik, Bart Schultz, Susan Wolf, and James Woodward. In that article Parfit responded in detail to each of the other symposium contributors' comments on his book. In particular, Parfit responded in some detail to James Woodward's article, Woodward, *supra* note 15, which specifically focused on the Non-Identity Problem. Parfit, 1986, *supra* note 12, at 854-62. He there reaffirmed his long-standing "No Difference View" conclusion, most fully articulated in PARFIT, 1984, *supra* note 4, at 366-71, that despite the fact that policies with adverse long-term consequences will not make things worse for any particular future individuals because of those policies' person-altering consequences, there are still moral reasons for not choosing such policies, Parfit, 1986, *supra* note 12, at 854, and that these moral reasons are just as strong in spite of the fact that no particular individuals are harmed by such policies, *id.* at 855-56. Parfit once again conceded, however, that he was unable to formulate the needed "new theory about beneficence" that would justify this conclusion. *Id.* at 854.

20. For fuller elaboration of this point, see D'Amato, *supra* note 13, at 190-92.
21. *Id.* at 191. How rapidly the person-altering consequences of a policy will proliferate, and how quickly the resulting divergence in genetic endowments will be of major significance to personal identities, will differ from policy to policy. The identity of future persons will begin to be altered approximately nine months after the implementation of a policy, once persons conceived after the policy's implementation begin to be born (I am classifying those persons conceived before a policy is implemented but perhaps affected as fetuses by its consequences as "existing persons" with regard to that policy). One would

In other words, one rather dramatic consequence of virtually any policy, even one of rather limited and localized initial impact, is that in the long term it will eliminate the coming into existence of many and eventually all individuals who would otherwise have been born. It will result instead in the birth of an increasingly and eventually entirely genetically different group of people, with their genetic endowments increasingly diverging from those of the persons who would otherwise have been born, with the size of this new group of persons possibly being either larger or smaller than that of the group of persons who will not now be born because of that policy. The policy will thus fundamentally alter the personal identities of each member of distant future generations. Those now never-to-be-born persons (which I will hereinafter describe as "potential persons" even though they are nonexistent in any meaningful sense) will be replaced by an entirely different group of people. These pervasive person-altering consequences are truly of mind-boggling significance, and obviously need to be taken into account along with the other consequences of a policy in any overall assessment of its merits.

Parfit's insight is demonstrably correct, as a matter of scientific fact,²² and is an example of what is commonly referred to as the "butterfly effect" of chaos theory.²³ It is also a somewhat disturbing observation,²⁴ to put it mildly, in that

expect that given the obvious sensitivity of the forming of a particular sperm-egg fusion to a great multitude of circumstances that the scope of the person-altering consequences of a policy would expand with exponential rapidity once some genetically altered individuals are born, and that even relatively isolated human communities would be impacted and then completely transformed in genetic terms within a few years or at most a few decades. In addition, while the initial genetic alterations resulting from a policy may be relatively minor in impact (eye color, "junk" deoxyribonucleic acid (DNA) changes, etc.), arguably leaving unaffected the "identity" of the persons so altered in such minor fashion, the number of genetic alterations per person will also exponentially increase over time through the same cumulative feedback process, rapidly leading to unarguable alterations in the identity of all future persons.

22. *Id.* at 192. This conclusion assumes, of course, that a person's identity is determined by their genetic endowment and/or by the physical and cultural circumstances of their lives, rather than determined by some kind of ethereal Cartesian ego or supernatural "soul" that is wholly independent of genetic characteristics or physical or cultural influences. I will assume for the purposes of this Article that if the genetic endowment of a person is altered as a consequence of a policy this can be regarded as a change in that person's fundamental identity, whereas any consequence of a policy that does not alter a person's genetic endowment, no matter how significant that consequence otherwise is to that person's life, does not change the fundamental identity of that person.
23. *Id.* at 190-92.
24. Parfit himself is most uncomfortable with the unavoidable implication of his insight that current policies that favor existing persons but that have adverse or even catastrophic impacts upon future persons would nevertheless be regarded as beneficial by those future persons relative to their alternative of nonexistence if the policy is not pursued, and thus those policies cannot be criticized on the usual person-affecting basis that they would injure particular people. "[T]he long-term effects of social policies, even if clearly disastrous—even if it clearly affects people for the worse—won't be worse for particular people. They are thus ignored by our principle. We might claim that we should grant *less* weight to the further future. . . . But a 'person-affecting' principle gives to the further future *no* weight. This seems indefensible." Parfit, 1976, *supra* note 12, at 102.

Parfit thus demonstrates that he understands the serious problem posed by person-altering consequences for any utilitarian criterion or related measure (such as the Kaldor-Hicks wealth-maximization criterion that underlies cost-benefit analysis) that attempts to aggregate in some fashion the impacts of policies upon the affected persons. "Such difficulties [posed by person-altering consequences] may seem to face only utilitarians. This is not so. They face most of

it makes it impossible to meaningfully assess the merits of environmental or other social policies that will have long-term consequences by conventional evaluative criteria that do not sharply differentiate between impacts upon existing persons and impacts upon yet-unborn future persons (hereinafter future persons), except by discounting the magnitude of future impacts to some extent, and which therefore completely overlook person-altering consequences.

Let me explain this point more fully. The valuation criteria now generally used in policy analysis are aggregate cost-benefit measures that give substantial weight to the preferences of each of the specific persons affected, measured through use of their willingness-to-pay for the policy consequences relative to a hypothetical, counterfactual baseline state of affairs, as ascertained either through their measured or estimated offer or asking prices, and that are upon occasion augmented by the use of more explicitly utilitarian normative criteria that are not so closely linked to wealth.²⁵ When the longer-term effects of policies on future persons must also be assessed as part of a comprehensive policy evaluation, hypothetical preferences and wealth endowments (or happiness capabilities) are postulated for those future persons, and then their projected responses to the policy's impacts, as compared to the baseline assumptions, are incorporated into the calculations in some discounted fashion.²⁶ These conventional criteria also generally incorporate as a sidebar constraint some concept of in-

those who give any weight to a utilitarian principle." *Id.* at 100. He is unfortunately somewhat opaque in this brief essay regarding how this problem should be resolved. He clearly rejects the alternative of simply ignoring the exponentially cascading person-altering consequences that will occur when a policy is implemented, particularly given that the total number of future persons that would be born will also likely be affected as well as their individual identities. *Id.* at 103. He does state that the problem of person-altering consequences implies that the long-term consequences of policies should not be determined by their impacts upon the rights and interests of the affected future persons, *id.* at 102, but he does not offer an alternative valuation method. He instead spends the bulk of the essay criticizing in a technical and detailed fashion an analysis of policy impacts upon future persons presented by Peter Singer in that same collection of essays. *Id.* at 103-09 (criticizing Peter Singer, *A Utilitarian Population Principle*, in *ETHICS AND POPULATION* 81-99 (Michael Bayles ed., 1976)). Singer's analysis rests upon radically simplifying equivalency-of-all-future-persons and same-number-of-future-persons premises that together essentially assume away the problem of person-altering consequences. Parfit, 1976, *supra* note 12, at 103. Parfit's closing statement in this essay is that while Singer has concluded that the valuation problem presented by person-altering consequences is difficult but capable of solution, *id.* at 109 (Singer writes: "This principle is not without its . . . problems; but they are, I think, capable of solution," Singer, *id.* at 98), "I myself cannot see how." *Id.*

25. For example, cost-benefit analysis uses the Kaldor-Hicks wealth maximization criterion where the impacts of a policy on each of the persons affected is measured by that person's willingness to pay to obtain the policy's benefits, or avoid its costs. Whether that willingness to pay is best measured by offer prices, or instead by asking prices, is a complex issue upon which scholars strenuously disagree. See generally Crespi, *supra* note 7. More explicitly utilitarian approaches attempt to aggregate a policy's impacts with regard to the happiness of each of the affected persons more directly without utilizing wealth-based measures as proxies for happiness consequences. Such aggregate valuation criterion are generally accompanied in practice by sidebar constraints that rule out as possible choices for implementation some policies that might have desirable aggregate consequences on the basis that they would impermissibly infringe upon certain rights of the persons adversely impacted by those policies.
26. One controversial issue, of course, is the question of the appropriate discount rate to apply to future consequences when aggregating them with the effects on existing persons.

dividual rights that imposes distributional or other limitations upon what policies may be selected for implementation on the basis of their aggregate consequences. But as I will discuss in Part IV below these aggregate valuation approaches implicitly treat the fundamental genetic identity of future persons as unaffected by our policies. They compare various policy alternatives using a covert "the same future persons will exist under all scenarios" assumption that is rarely if ever explicitly articulated. They consequently are inadequate approaches for dealing with the deeper ethical questions that are raised by the problem of person-altering consequences, which I will now address.

III. The Ethical Issues Raised by the Problem of Person-Altering Consequences

Let me address in this part the ethical issues presented by the problem of person-altering consequences. I will first consider whether an ethical obligation to distant future generations can be grounded upon conventional ethical premises regarding the rights or interests of specific future persons. I will then consider whether an ethical obligation to distant future generations can be grounded instead on an alternative impersonal ethical principle of a similarly secular, consequentialist character that is not dependent upon the consequences for specific individuals. Finally, I will briefly discuss the nature of our ethical obligations to those "transitional generations" of future persons for whom the identities of some, but not yet all, persons have been significantly changed by the person-altering consequences of a policy,²⁷ and then will summarize my overall conclusions as to our ethical obligations to distant future generations.

A. A Person-Affecting Basis for an Ethical Obligation to Distant Future Generations

Let me first examine the question of our ethical obligations to distant future generations with regard to those potential persons who will now not be born as a result of the person-altering consequences of the implementation of a particular policy. I will then consider the matter in somewhat more depth with regard to those future persons who now will be born as a consequence of that policy.²⁸

The idea that potential persons who as a result of the person-altering consequences of a policy will now never be born nevertheless might still exist in some meaningful

27. Once a policy is implemented, it obviously will have no genetic person-altering consequences for those persons born during the first subsequent nine months or so because they will have already been conceived prior to its implementation. After this period of time an exponentially growing proportion of births will be affected by the policy. Up until the point has been reached where the genetic identity of all persons born has been altered by the consequences of the policy some fraction of those persons born would have been born even had the policy not been implemented. These genetically unaltered future persons are really more akin to existing persons than they are to other future persons whose genetic identities have been altered by the policy, in terms of our ethical obligations to them. The ethical obligations to these members of transitional generations will be discussed more fully in Part III.C. *infra*.
28. I do not intend in this Article to address the difficult and highly controversial questions relating to the rights or interests of persons in the fetal state after their conception but before their birth. I shall use the terms "born" or "not born" throughout this Article, but the reader can if she desires substitute the terms "conceived" and "not conceived" without affecting any of the arguments that I make.

sense, and therefore may have rights or interests that should be given some weight in the decision whether that policy should be implemented, ultimately proves to have absurd implications and should be rejected out of hand.²⁹ Let me demonstrate this absurdity by first considering the matter of the rights of such potential persons. If a valuation criterion incorporates even a minimalist concept of rights for such potential persons as a constraint upon possible policy choices, it will at the very least accord rights to those potential persons to not be subjected to policies that would eliminate their existence altogether, even if the criterion countenanced all lesser transgressions upon their welfare. However, a valuation criterion with even such a limited “right to existence” constraint appended would rule unacceptable both the decision to implement a policy with person-altering consequences and the decision not to implement that policy, since either of these choices would preclude the birth of a very large group of potential persons. These inconsistent directives would result not only for radically present-oriented ocean radioactive waste dumping-type policies, and for policies involving sacrifices by existing persons on behalf of future generations, but also all other policies that have person-altering consequences, which as noted above probably includes all policies of any sort.

Such sweeping and internally inconsistent directives obviously do not provide helpful guidance for making decisions. Once one recognizes the pervasiveness of the person-altering consequences of policies it is clear that one cannot accord even the minimal right to existence to potential persons as a policy constraint. The implementation of virtually any policy will mean that untold trillions of potential persons who would eventually have been born under one or another of the very large if not infinite number of possible alternatives to that policy that could have been pursued will now never come into existence. Any ethical principle that indiscriminately declares that both implementing and not implementing any significant policy will each violate the rights of untold trillions of potential future persons would obviously be absurd. These absurd consequences reveal this idea to be a fundamental category mistake as to what rights are. Potential persons simply do not exist in any meaningful sense.³⁰ Unless and until people are born they have no rights.

Let me turn now to the related question of the interests of those potential persons whose existence will be precluded by the person-altering consequences of a policy. It is a reasonable assumption that the overwhelming majority of, if not all, potential persons who would have been born had a different policy been pursued, and who will not now be born, if they are at all like existing persons would if they could choose to vote as strongly as possible against the implementation of that policy under whatever criterion is being employed, and in favor of the particular policy option that would have resulted in their birth, if they could somehow be given the opportunity to do so.³¹ A hypothetical in-

terest-based referendum addressing all possible policy options would therefore lead to a massive, overwhelming repudiation of any particular policy by the vast numbers of potential persons who would be condemned to nonexistence by its implementation. The absurdity of attempting to incorporate the interests of all of these potential persons in a policy assessment once again suggests that a category mistake is being made, and that potential persons have no interests as well as no rights prior unless and until they are born.³²

It thus is apparent that in assessing the merits of a policy with person-altering consequences, no weight should be accorded to any claimed rights or interests of those persons who will now not be born as a result of the implementation of that policy. But what about those future persons who will be born into a perhaps uncongenial world as a consequence of that policy, and who may well not approve of all of its various impacts upon their welfare? Do they have any rights or interests that might be adversely impacted by, for example, massive radioactive pollution of the oceans, or by fossil fuel consumption policies that would allow rampant global warming to continue? The question of whether these future persons who will be born as a consequence of a radically present-oriented policy have rights or interests that place ethical constraints upon our decision to pursue that policy is a bit more complicated than was the comparable question for those future persons who will not be born as a result of the policy.

One would expect that at least the overwhelming majority of, if not all, future persons who would owe their existence to the implementation of a policy would, if given the opportunity, vote very strongly in its favor under whatever valuation criterion is being used, even were that policy to have some catastrophic consequences for their well-being.³³ It is, of course, not knowable in advance how many future persons would be voting in such a hypothetical referendum, let alone what the wealth endowment or happiness potential of each of these future persons that would determine their voting capability would be. It therefore will not be possible to ascertain the distribution of the benefits of a policy between existing persons and future persons. What seems clear, however, is that any policy with person-altering consequences, no matter how broadly catastrophic are its impacts upon future persons, would receive overwhelming, if not unanimous, approval from those future persons (assuming that they are psychologically similar to existing persons in this regard) under any of the conventional valuation criteria, for the obvious reason that all of the future persons whose rights or interests are being considered would owe their very existence to the implementation of that policy.³⁴

Put simply, any current policy measure, regardless of its long-term consequences for distant future generations, is ethically self-validating under conventional ethical premises since it would receive overwhelming if not unanimous approval from them in a hypothetical referendum because they would otherwise not have been born. All of those policy consequences, good or bad, are necessary conditions of their existence. So we are under no ethical obligations

29. *Id.*

30. *Id.*

31. It is at least theoretically possible that a policy could have such catastrophic and unavoidable consequences for distant future generations that a large proportion of those persons who would be born as a result would prefer nonexistence to their miserable lives. It strikes me as far more likely, however, that future persons, if they are at all like existing persons, would prefer being born in even a difficult world to nonexistence, so I will assume for the purposes of this Article that none of our policy choices would lead to such a miserable fu-

ture world that a significant number of future persons would actually prefer nonexistence to being born.

32. *See supra* note 28.

33. *But see supra* note 31.

34. *Id.*

based on the rights or interests of those specific future persons who will be born as a consequence of a policy to depart from that policy since by pursuing it we will not have harmed any person³⁵; they would if they could all give their approval to our conduct.³⁶

Let me return briefly to the ocean radioactive waste dumping hypothetical with which I began this Article. While those future persons born several centuries from now may well suffer very significant burdens from a decision made today to dump high-level radioactive wastes into the ocean in barrels that do not provide effective long-term containment, the substantial resource reallocations that such a policy would allow would clearly have cascading person-altering consequences that would very quickly be genetically significant and universal in their impact. Those potential persons who as a result of those consequences would now not be born would be nonexistent beings who would thus have no rights or interests that might be implicated by that decision to dump those wastes in the ocean. These future persons that will be born as a consequence of that ocean

35. *Id.*

36. If this somewhat counter-intuitive point is not yet clear to the reader I suggest that you consider whether you would have favored conduct by your ancestors that had been more productive economically, as well as more protective of our natural environment, than the course of conduct that they actually followed, if one of the consequences of that conduct was that you and all of the people that you have ever known would never have come into existence! Has their conduct harmed you, all things considered? If God contacted you with an offer to “wind the clock back 200 years and do it right this time, although you won’t be in the script this time around,” would you accept the offer? See Grey, *supra* note 5, at 170-71.

Doran Smolkin has also wrestled with the difficult problem of trying to justify recognizing rights on the part of future persons to complain about injuries from certain particular consequences of policies, when those policies as a whole are a necessary condition to those future persons’ existence. Smolkin, *supra* note 5. Smolkin first explicitly recognizes the problematic nature of attempting to justify people complaining that they have been wronged by an act that was necessary for their existence, “[t]he other main theoretical obstacle to developing a rights-based solution to the non-identity problem is the worry that there is something deeply implausible about maintaining that an act whose performance was predictably not, on balance, worse for a person could still be grounds for a complaint.” *Id.* at 200. He nevertheless has a strong intuition that an ethical obligation to future persons can be somehow justified, *id.* at 200-01, and proffers what he describes as “complaint-warranting conditions” under which a future person would have a right to lodge such a complaint against existing persons for their conduct, *id.* at 202. His conclusion is that

[a] future person has [an ethically legitimate] complaint if and only if some act that was a necessary condition for her coming into being also resulted in her being unable to acquire to a sufficient degree one or more of the elements needed for well-being in a particular state of life.

Id. at 206. I am not at all convinced by his proposed solution, and am more inclined to agree with his initial admonition that according future persons rights to complain about particular policy consequences when those consequences are necessary conditions of their existence is “deeply implausible,” *id.* at 200.

James Woodward has also attempted to offer a justification for recognizing a right on the part of future persons to complain about some of the necessary conditions of their existence, and a correlative ethical obligation on the part of existing persons to consider those complaints. Woodward, *supra* note 15, at 806, 814, 817. He argues that it is appropriate to ethically evaluate policies by comparing their outcomes for future persons with the concededly unattainable option of having those same persons come into existence without certain adverse aspects of their world. *Id.* at 817. Once again, however, for the reasons discussed above it appears to me to be a rather arbitrary and meaningless exercise to attempt to judge conduct by comparing its outcome with a logically unattainable alternative.

dumping policy would owe their very existence to it. If they could be asked for their opinions about the policy, and if they are at all like existing persons, they would surely overwhelmingly if not unanimously prefer their existence, even if it involved grappling with a serious radioactive waste problem, to nonexistence. They would of course much prefer existence without the radioactive waste problem, were that an option that could have been chosen for them, but the central insight of the problem of person-altering consequences is that this is simply not possible. The only choice that those future persons would hypothetically be presented with is the bundled Hobson’s Choice of life with the radioactive waste problem or nonexistence, and if they would all choose life then we will not have injured the rights or interests of any specific person with our ocean waste dumping, and would of course have benefited existing persons with the resources saved. So why not do so?

It is thus clear that if the choice of a policy that has person-altering consequences is to be criticized on the basis of conventional ethical premises, this will have to be done on some basis other than the argument that its long-term impacts would violate the rights or interests of those future persons who will as a result of that policy come into existence, or would violate the rights or interests of those potential persons who will now not come into existence.³⁷ The challenge is to identify such an alternative, impersonal basis of a secular, consequentialist character for having ethical obligations to distant future generations. As I will discuss below, I do not believe that this challenge can be met.

B. An Impersonal Basis for Ethical Obligations to Distant Future Generations

We therefore do not owe any obligations to future persons that are based upon the possibility of infringing upon the rights or interests of any specific individuals, since those future persons who will be born only as a result of our current policies would overwhelmingly if not unanimously favor these policies as on balance protecting their rights and advancing their interests,³⁸ and those potential persons who as a result of our policies will not be born are nonexistent beings that have no rights or interests that we need consider. What ethical obligations based on conventional ethical premises could we then possibly owe to any future persons? Any such obligations must be based upon some impersonal ethical principle that takes into account in some fashion not related to the rights or interests of specific persons the preclusive effects of our policies on those potential persons who, because of the policies’ person-altering consequences, will never be born.

37. Most of the other scholars that have considered the problem of person-altering consequences agree that it renders it impossible to ground ethical obligations to future persons on the conventional secular, consequentialist basis of the rights or interests of specific individuals. See, e.g., Parfit, 1986, *supra* note 12, at 854 (“[The moral reasons for not pursuing policies that will injure future people] cannot be fully explained by appealing to people’s interests, or by appealing to people’s rights.”); D’Amato, *supra* note 13, at 197 (citing with approval Parfit’s conclusion that an acceptable principle of beneficence to future persons “cannot take a person-affecting form”); Weiss, *supra* note 13, at 204-05; Gundling, *supra* note 13, at 210-11; Kavka, *supra* note 4, at 95-97. *But see* Smolkin, *supra* note 5; *see also* Woodward, *supra* note 15, who as best as I can understand does not wholeheartedly embrace this position.

38. *But see supra* note 31.

The question here is only made difficult because the obvious right answer that we have no such impersonal ethical obligations to future persons conflicts with one of our widely shared intuitions. As I have discussed, those future persons born as a consequence of whatever set of policies that we pursue would likely wholeheartedly endorse those policies because they are necessary conditions for their existence. It would make no sense at all to posit an impersonal ethical principle that would give weight to any postulated discontent of those future persons who will be born with some particular features of their world that we have bequeathed to them, when any measures that existing persons could take to change in any way those adverse features would, because of its person-altering consequences, eliminate those particular future persons' existence altogether.³⁹ An ethical principle that demanded a logical impossibility would be absurd. The only impersonal ethical principle that could be even a remotely plausible candidate for grounding a duty to future persons would be a principle that gave some weight to the postulated consequences for those potential persons who will not now be born, but who would have been born had that purported impersonal duty to leave to distant future generations a better world been discharged.

Such an ethical principle would also have absurd implications. As previously discussed those potential persons who, as a result of a policy choice, will now not be born would be nonexistent beings that have no rights or interests. This impersonal principle would thus have to be based upon the results of a policy for potential persons other than impacts on their rights or interests. No obvious criteria come to mind. Second, to avoid giving inconsistent directives, the selected ethical principle would have to privilege one particular group of potential persons who would be born as the consequence of one policy over the immense, if not infinite, multitude of potential persons who would have been born as a result of one or another of the numerous other possible policy options. It is unclear how this ethical principle would apply to select this privileged group. Should it be the projected largest possible group of persons that would be born under any of the many possible scenarios, or should it be the total happiness-maximizing group of persons, or the group of persons with the highest average level of happiness, or the most virtuous group of persons, however virtue is here defined, measured either in total virtue or average virtue terms, etc.? All of the well-known and perhaps insoluble problems inherent in establishing an impersonal ethical criterion are raised in stark fashion by this undertaking.

Third, to have any significance for decisionmaking, the ethical principle would have to accord sufficient weight to the interests of the chosen group of potential persons that it privileges so as to outweigh the massive adverse impact on the rights and interests of the very many potential persons who would have been born if this purported impersonal duty was not discharged, but whose existence would be precluded by its discharge. Broad statements to the effect that such a duty runs to the human race, future generations, society, posterity, or some other such impersonal abstraction should not be allowed to obscure the fact that such a duty would in substance be an obligation to an arbitrarily designated group of potential persons chosen from the vast multitudes of potential future persons that are all without rights or

interests, and one that would also be privileged over the rights and interests of those future persons who would actually be born were this so-called duty not discharged. This is all absurd; the obvious conclusion is that there are no impersonal ethical duties to never-to-be-born potential persons to alter our conduct so as to bring them into existence, as well as their being no person-affecting duties relating to any future persons' rights or interests. We simply owe no ethical duties that can be grounded upon conventional ethical premises to distant future generations who will be born, or to potential persons who could have been born had we altered our conduct.

This simple and seemingly unavoidable conclusion is, however, in sharp tension with the widely shared intuition that we do have some sort of ethical obligations to distant future generations. One can therefore easily understand why the current practice of simply ignoring person-altering consequences in policy assessment, and assessing the long-term consequences of policies as compared to a postulated baseline state of affairs in the same manner as if their impacts had been upon existing persons whose genetic identities are not altered by the policies at issue, is so popular. But to ignore these person-altering consequences in ostrich-like fashion, when their identity-altering significance to those future persons who will be born obviously dwarfs all other impacts of those policies, renders rather meaningless any assessments of long-term consequences that are done in this fashion. We simply must face the problem of person-altering consequences and candidly recognize that it completely undercuts the idea of there being any ethical obligations to future generations that can be grounded on conventional ethical premises. The choice that we face is either to assess the significance of long-term policy consequences solely in terms of their impacts upon the rights and interests of existing persons, or else to depart from conventional ethical premises and conduct these assessments in accordance with religious or secular but non-consequential ethical criteria which may impose ethical obligations to distant future generations.

In his work Parfit has taken the position that there are still sufficient moral reasons for not doing acts that may predictably cause some future persons to be killed or injured, even when the person-altering consequences of those acts means that those adversely affected persons would otherwise never even exist. In other words, he believes that we have a moral obligation to eschew certain acts even when no specific future person would be made worse off as a result of those acts.⁴⁰ He even went so far as to make the oft-cited statement, "that for *practical* purposes . . . the Non-Identity Problem never affects what we ought or ought not to do."⁴¹ However, to his credit Parfit has candidly and repeatedly admitted that he was unable to formulate an acceptable theory that would justify this moral intuition.⁴²

40. Parfit, 1986, *supra* note 12, at 854.

41. *Id.* at 855; *see, e.g.*, Daniel A. Farber, *From Here to Eternity: Environmental Law and Future Generations*, 2003 ILL. L. REV. 289, 302 n.69 (2003) (citing to this quote); Daniel A. Farber, *ECO-PRAGMATISM: MAKING SENSIBLE ENVIRONMENTAL DECISIONS IN AN UNCERTAIN WORLD* (1999), at 151 n.38 (citing to this quote).

42. *See supra* notes 17, 18, 19. Derek Parfit is obviously quite discomfited by his failure to develop an ethical framework and related valuation criterion for policies with long-term impacts that imposes ethical obligations to future persons, and adequately addresses the problem of person-altering consequences, yet also satisfies the other minimal requirements that he believes that such a criterion must meet. He describes the implications of the problem of person-altering con-

39. *But see generally* Smolkin, *supra* note 5; Woodward, *supra* note 15.

Most of the efforts by other scholars to articulate a basis for ethical obligations to future persons that in light of the problem of person-altering consequences does not rest upon the rights or interests of specific future persons are both more superficial and much more confidently assertive than is Parfit. Scholars who have made contributions in this regard include, among others, Anthony D'Amato,⁴³ Edith Brown Weiss,⁴⁴ Lothar Gundling,⁴⁵ Michael Laudnor,⁴⁶

sequences in the closing chapter of his 1984 book as “unwelcome” and “disturbing” because they “undermine our belief about our obligations to future generations,” and because it makes it impossible for one to object to policies with adverse long-term consequences on the basis of “our ordinary principle about the wrongness of harming other people.” PARFIT, 1984, *supra* note 4, at 451. Parfit even goes so far as to call for efforts to be made to conceal his insights regarding the drastic implications of the problem of person-altering consequences from those persons responsible for making social decisions regarding the extent of the use of nuclear energy! *Id.* at 451-52. He recommends this duplicity because of his view that if those persons do not recognize the problem of person-altering consequences and therefore hold the “false belief” that a nuclear catastrophe “would be against the interests of the persons killed by such a catastrophe” they will be more likely to reach what he regards as the “right decision” to reject to promising but risky nuclear energy policies that may potentially have such catastrophic consequences. *Id.* at 452.

This call for duplicity and manipulation of policymakers is a startling and radical recommendation for a philosopher to make; one that merits far more justification on his part. Why is rejecting promising but risky nuclear energy policies necessarily the “right decision”? What support can be offered for his conclusion that we should resort to dishonesty if necessary to limit policymakers’ awareness of the problem of person-altering consequences as a tactic to encourage them to reach that right decision? Parfit has in this book and in his earlier articles demonstrated at some length the significance of the problem for the assessment of long-term consequences, and has conceded that he has been unable to formulate a “Theory X” that addresses the problem yet also resolves the tensions between that insight and his other conflicting intuitions regarding our moral responsibilities to future persons. One would think that this admission would call for a rather more agnostic stance regarding the proper role that the problem of person-altering consequences insight should play in policy deliberations. Instead, Parfit follows his confession of inability to mesh harmoniously the important implications of the problem with his other conflicting intuitions regarding future persons with a call to other scholars that they should depart from their professional commitment to truthfulness and attempt to foster certain “false beliefs” among decisionmakers so that the person-altering consequences of policies will continue to be overlooked. One might well describe a scholar taking such a stance as showing a serious “loss of nerve” about following the logical implications of his thinking wherever it may lead or, perhaps more aptly, one might respond by saying “Some nerve!” It is unclear why Parfit did not conclude as have Thomas Schwartz and I that those policies that have adverse long-term consequences can still be criticized on the basis of being in conflict with the ethical intuitions of existing persons, *see* Schwartz, *supra* note 4, at 12, but he apparently did not do so.

43. Anthony D'Amato, for example, anchors his conclusion that we owe a duty to future persons in “our preverbal sense of morality” that “tells us that it is somehow wrong to despoil the environment,” and that we “should cultivate our natural sense of obligation to not act wastefully or wantonly even when we cannot calculate how such acts would make any present or future persons worse off.” D'Amato, *supra* note 13, at 197-98. He does not, however, offer a plausible impersonal ethical basis for this preverbal sense of obligation. In particular, he fails to make clear whether this preverbal sense of morality relates to the expected consequences of wasteful or wanton actions for the human race as a whole other than their effects on the rights or interests of specific future persons, or instead is simply a sense of the inherent wrongness of wasteful and wanton actions without regard to their results.
44. Edith Brown Weiss goes even further than does D'Amato, *id.*, claiming that his view of the source of the obligation to future persons “reflects an unnecessarily constrained view of human rights law,” Weiss, *supra* note 13, at 206, and that our ethical obligations to future persons go beyond what we can recognize through our pre-verbal intuitions. *Id.* at 207. She regards the duty to future persons as more broadly grounded in “planetary, or intergenerational rights [that] are not rights possessed by individuals,” *id.* at 205, but which

William Grey,⁴⁷ Rahul Kumar,⁴⁸ and Doran Smolkin.⁴⁹ However, in my opinion, none of those efforts are successful

are of the nature of “group rights, as distinct from individual rights.” *Id.* at 203. She argues that these group rights are quite extensive and detailed, and in the environmental context would obligate existing persons to, among other obligations, “maintain the quality of the planet so that it is passed on in no worse condition than that in which it was received.” *Id.* at 202. The person-altering effects of policies on the identities of the individuals that make up future generations does not in Weiss’ view undercut these group rights in the way that it does their individual rights: “[These rights] exist regardless of the number and identity of individuals making up each generation.” *Id.* at 203. She draws a parallel here with “the Islamic approach” which she claims “treats human rights not only as individual rights, but as ‘rights of the community of believers as a whole.’” *Id.*

45. Lothar Gundling in a companion article to Weiss’ piece, Weiss, *supra* note 13, generally endorses Weiss’ justification for this duty to future persons, Gundling, *supra* note 13, at 210, and moreover claims that the “rights of future generations have ‘greater moral force’ than mere obligations of present generations.” *Id.*
46. Michael Laudnor notes in a 1994 article primarily addressing “wrongful life” tort claims that raise the problem of person-altering consequences that Parfit has primarily explored utilitarian solutions to the problem of person-altering consequences in an effort to try to establish a “identity-independent” notion of harm. Michael Laudnor, *In Defense of Wrongful Life: Bringing Political Theory to the Defense of a Tort*, 62 *FORD. L. REV.* 1675, 1679-80 (1994). See also *supra* note 18, for a summary of the difficulties that Parfit felt were inherent in a utilitarian approach to the Non-Identity Problem. As did Parfit before him, however, Laudnor concludes that a utilitarian approach to defining duties solves the problem of person-altering consequences, if at all, only by endorsing other unacceptable results, Laudnor, *id.* at 1685-86, and Laudnor does not attempt to succeed where Parfit has failed to develop a general solution to the problem: “I am concerned, primarily, with solving the problem of objecting to wrongful lives, so I will not fully develop a defense of my [intuitionist] principle in the area of social and population policy. *Id.* at 1697.
47. William Grey in a 1996 article addressing the problem of person-altering consequences in broad, philosophical terms recognized the great significance of the problem, Grey, *supra* note 5, at 167, and also concluded that any obligations to future persons must be grounded on impersonal rather than person-affecting ethical principles. *Id.* at 168. Grey claims that there exist such obligations because “we can wrong a person by bringing it about that that person is adversely affected by our actions even if the aggrieved did not exist at the time of our actions.” *Id.* at 171. He justifies this claim on the basis that future persons need not be appreciative of all of the causal antecedents of their existence, *id.* at 172, and that their recognition that they are not as well off as would be the different people who would have been born had we followed a different course of action creates a moral obligation on our part to pursue that alternative course of action. *Id.* at 171.

Grey explicitly recognizes that his reasoning implicitly embraces an impersonal ethical principle, *id.* at 168, that without being augmented by some source of person-affecting restraints will lead to the usual unacceptable results derived from such principles. *Id.* at 173. But he has no answer to offer to this conundrum. He does attempt to posit what he labels a “diachronic obligation” to possible future persons which he claims will constrain current choices on the basis of their eventual person-affecting consequences for those future persons. *Id.* at 173-75. However, Grey rather opaquely describes these diachronic obligations as “delayed action conditional ones—retroactive person affecting principles,” *id.* at 175, and fails altogether to offer a convincing explanation as to how there can be such a person-affecting obligation to specific future persons to not engage in certain acts when those acts are a necessary condition of their existence. Grey is in my view simply again invoking an impersonal utilitarian-type ethical principle in an attempt to circumvent the implications of the problem of person-altering consequences, an approach that Parfit had already unsuccessfully tried.

48. Rahul Kumar in 2003 addressed the problem of person-altering consequences and articulated an explicitly non-consequentialist basis for there being an ethical obligation to consider the rights and interests of future persons when making decisions:

To side-step the problem [of person-altering consequences], I have suggested, one must fully embrace the non-consequentialist commitment to the maxim that the focus of an

in justifying an impersonal ethical principle that would anchor such obligations. Those writers generally claim that obligations to future persons exist and are grounded in an impersonal duty to the human race as a whole that should be viewed as an entity that meaningfully exists in a moral sense apart from the specific individuals that comprise it. They are, however, extraordinarily vague regarding the justifications for and contours of this claimed duty to the human race. They do not explicitly embrace religious or secular but non-consequentialist ethical premises, nor adequately address the concerns that I have raised regarding the inability to justify such an obligation on conventional ethical premises. I remain unconvinced.

I am not the first person to argue that the problem of person-altering consequences leads inevitably to the conclusion that we do not have any ethical obligations at all to distant future generations that can be grounded in conventional ethical premises, and that the only basis for considering the interests of future persons in policy deliberations, other than religiously grounded or secular but non-consequentialist justifications, or altruistic preferences, is respect for the widely shared, though erroneous, intuition held by existing persons that we do have such obligations based on conventional ethical premises. In a succinct contribution to a 1978 collection of essays, Thomas Schwarz offered essentially the same arguments as I have here presented.⁵⁰ He also pointed out the lack of either a person-affecting or an impersonal ethical basis for such an obligation,⁵¹ and in response to claims that we owe distant future generations a specific

investigation into a claim of having been wronged should be put squarely on the character of the wrongdoer's conduct, rather than the consequences for the wronged of that conduct. In particular, the wrongdoer's conduct needs to be assessed as a failure to live up to her responsibilities with respect to the wronged.

Rahul Kumar, *Who Can Be Wronged?*, 31 PHIL. & PUB. AFF. 99, 116-17 (2003). But exactly what responsibilities do existing persons have to those future persons who would supposedly claim they have been wronged by the conduct of existing persons, when any other conduct by existing persons would have completely precluded their birth? See, e.g., Smolkin, *supra* note 5, at 196. Or is Kumar perhaps talking about a hypothetical claim of irresponsible behavior made by those potential persons who will now never be born as a result of our actions? It is certainly reasonable for one to be a non-consequentialist in the general Kantian sense of believing there to be an ethical obligation to absolutely respect each person's rights even when the potential beneficial consequences of infringing upon those rights are very large. But it is quite another thing to take a non-consequentialist position in the more radical sense of regarding certain actions as being unethical in and of themselves even though they have no adverse consequences for any particular person.

Kumar claims to be offering a "contractualist," non-consequential justification for ethical obligations to future persons which he grounds in the ideas that future persons under a social contract theory have "legitimate expectations" as to the conduct of existing persons, *id.* at 105-06, even though those future persons will be born only as a result of the person-altering consequences of that conduct, because those future persons are of the "type" of person who would be entitled to make such a claim. *Id.* at 112. But once he characterizes ethical obligations as running to a "type" of person, in this case all future persons, rather than to specific individuals, his position becomes simply another assertion of an impersonal ethical principle by which acts would be judged in terms of their consequences, and he does not offer any resolution of the problems posed by such impersonal principles upon which Parfit's efforts foundered.

49. Smolkin, *supra* note 5.

50. Schwartz, *supra* note 4.

51. *Id.* at 10-11.

ethical obligation to now impose restrictive population growth policies, he offered the following arguments, which can easily be generalized to apply to any claims of ethical obligations to distant future generations:

The fact that one policy would in some sense be better than another for something called a society, although in no sense better for any *person*, constitutes no *moral* ground for prescribing the former policy. Some of those now alive may feel an urge to insure [sic] that the future society will be an appealing one in which to live, with an admirable civilization. And if sufficiently many people are minded this way, that fact may constitute some sort of justification for some sort of restrictive population policy. But such a policy would be no favor to our *distant descendants* [who because of the person-altering consequences of that policy would now never be born]. They could not reproach us for having adopted a *laissez-faire* policy instead. The beneficiaries of the restrictive policy would be *ourselves*—those of us, anyway who get their kicks from the prospect of a flourishing future society.⁵²

Schwartz therefore also concludes that we do not owe distant future generations any ethical obligations based on conventional ethical premises, and that in his mind the relevant questions remaining are the extent to which existing persons erroneously believe that we do, and the degree of respect that should then be accorded to those erroneous views.⁵³ The editors of the book in which Schwartz' essay was published sharply disagreed with him and summarily claimed that most philosophers would regard his conclusion as an "extreme view" and "obviously untenable,"⁵⁴ and that they would favor positing an impersonal ethical principle to supplement person-affecting principles if necessary to avoid this conclusion.⁵⁵ The editors did not, however, themselves set forth and attempt to justify such a principle, nor specifically indicate where in the philosophical literature such a justification might be found.

52. *Id.* at 7.

53. *Id.* at 12-13.

54. R.I. Sikora & Brian Barry, OBLIGATIONS TO FUTURE GENERATIONS viii (1978).

55. *Id.* Smolkin also criticizes Schwartz for reaching this conclusion. Smolkin, *supra* note 5, at 196-97, 199. Another writer who has come to similar conclusions, as have Thomas Schwartz and I, is David Heyd. David Heyd, GENETHICS: MORAL ISSUES IN THE CREATION OF PEOPLE (1992). "Heyd argues [in this book] in great detail for a position similar to Schwartz's." Smolkin, *supra* note 5, at 196 n.4. Heyd claims that Derek Parfit's efforts to find a basis for ethical obligations to distant future generations that do not take a person-affecting form, but that also do not fall victim to the well-known problems of impersonal ethical theories, were doomed to failure from the outset:

[Parfit's] conclusion is accordingly an expression of the need for "a new theory of beneficence" . . . I cannot see how such a middle ground between impersonalism and person-affecting theory can be found. One cannot eat the cake of attributing utility only to those who can be said to better or worsen *their* lives and have the cake of a *global* preference for a world where more happiness for certain people over a world with less happiness for different people . . . one can either be drawn back to some form of impersonalism (as Parfit and many of his followers are), or (as I propose to do) stick to the person-affecting thesis and accept the conclusion that genesis problems can be solved only by reference to existing people. This is a conclusion that strictly limits the scope of ethical arguments. . . .

Id. at 89.

C. *Ethical Obligations to Transitional Generations*

The person-altering consequences of a policy will obviously take a period of time to become universal. Those consequences will first begin to manifest themselves about nine months after the implementation of the policy, when the first persons conceived post-policy are born, and will exponentially expand their scope and significance until the genetic identities of all future persons are significantly altered from what they otherwise would have been.⁵⁶ There will thus be a transitional period during which some but not all of the persons born will have genetic endowments that are different than what they would have been had the policy not been implemented, and during which some of the persons whose genetic endowments have been altered will be affected only in ways so insignificant that their fundamental personal identities are unaffected.⁵⁷ For some time period shortly following nine months after the implementation of the policy, those policy-unaltered persons, so to speak, may constitute a substantial fraction of all births, but toward the end of this transitional period the proportion of persons born without genetic alterations significant enough to affect their fundamental identity will rapidly decrease to zero. What ethical obligations do current persons have to those future persons who will be born during this transitional period, which as I have noted may conceivably extend for as long as several decades for policies of lesser and more localized initial impact?

The answer is relatively obvious. Those future persons born with significantly genetically altered identities due to the person-altering consequences of a policy should be regarded in the same manner as are the members of distant future generations discussed earlier, and are thus similarly not entitled to any ethical obligations on the part of current persons. On the other hand, those future persons who are born post-policy with the same (or almost the same, for practical purposes) genetic endowment they would have been born with absent the policy should have the same standing to have their rights and interests considered in deciding whether to implement the policy as do current persons. The implementation of the policy would not be a necessary condition of their existence and identity, and there would thus be no absurdity involved in considering their probable desires in the decisionmaking criterion.

Most of these policy-unaltered persons would obviously be born sooner rather than later during the post-policy transitional period, given the exponentially cascading scope and significance of the policy's person-altering consequences, so it would appear that the most reasonable assumption as to the preferences of those future persons would be that they would on average want the same things as would a broad, representative cross-section of existing persons, with more of a long-run focus given that their lives would span a later time period, on average, than will the lives of currently existing persons. The most difficult questions that are involved in consideration of ethical obligations to policy-unaltered members of transitional generations are more empirical than

theoretical. For any particular policy it would be necessary to determine how many future persons whose genetic endowments are not significantly affected would subsequently be born during the transitional period whose rights and interests would merit consideration. To do this it would be necessary to estimate how long a period of time would likely elapse before the policy's person-altering consequences were universal, and how rapidly over that time period the proportion of births of persons whose genetic endowments were not significantly altered would decline. Such an estimate is likely to be difficult if not impossible to make with any real precision.

D. *Summary*

As discussed above in Part A, we have no ethical obligations to future persons that can be grounded on conventional ethical premises, neither to those potential persons who will not be born as a result of the person-altering consequences of our policies, nor to those future persons who will be born as a result of those consequences, that can be based on the possibility of our policies having adverse effects on the rights or interests of specific individuals. In Part B, I have established that we also have no ethical obligations to those future persons based upon any broader impersonal ethical principle of a secular, consequentialist character. In Part C, I have discussed the nature of our obligations to the members of transitional future generations born before the genetically significant person-altering consequences of a policy become universal, and I have distinguished between our ethical obligations to policy-unaltered members of those transitional generations, which are essentially the same as they are for existing persons, and our lack of ethical obligations to those members of those transitional generations whose identities have been fundamentally altered by the policy.

IV. The Implications of the Problem of Person-Altering Consequences for Cost-Benefit Analysis

The recognition that any significant policy will have exponentially cascading and eventually universal person-altering consequences significantly undercuts the use of cost-benefit analysis as a policy evaluation approach. This recognition leaves unaffected the conventional cost-benefit framework for valuing policy impacts upon existing persons and upon the policy-unaltered members of transitional generations. However, it requires a complete change of approach for evaluating the impacts of a policy upon the members of transitional generations who have had their identity altered by the policy's consequences, and of course for evaluating its impacts upon the members of distant future generations.

Conventional cost-benefit analysis measures the impacts of a policy by assessing the affected persons' willingness to pay to experience (or to avoid) those impacts, as compared to a hypothetical, counterfactual baseline state of affairs that postulates that those same persons would exist even if the policy were not implemented. While this "same persons would exist either way" assumption obviously greatly facilitates analytical tractability, once one is aware of the pervasiveness of person-altering consequences it is clear that this is a totally implausible assumption that will never be satis-

56. As previously discussed, the significance of the genetic changes that do result from the effects of the policy will also exponentially increase over time, as will the number of persons whose genetic endowment is altered, for the same reasons.

57. Such as for example, minor effects such as eye color changes, etc., or perhaps even only changes in their "junk" DNA that have no detectable physiological or psychological consequences.

fied in practice, and which completely ignores the most significant impact of a policy on the members of distant future generations, which is whether or not they will even come into existence. To be a meaningful analytical exercise any cost-benefit analysis that purports to incorporate a policy's consequences for distant future generations will have to measure the policy impacts in a manner that squarely recognizes that those future persons who will be impacted by a policy are different persons than those who would exist in the hypothetical, counterfactual world that is being utilized as the standard for comparison.

The central analytical problem for cost-benefit analysis that is presented by this more realistic approach that recognizes person-altering consequences is that the particular policy under investigation in any analysis is a necessary condition of the birth of all of the members of distant future generations who would come into existence if that policy were implemented. Consequently, if those persons' willingness to pay for those policy consequences is measured by their offer prices, the large majority, if not all, of those persons would very likely offer a sum approaching their entire wealth, given their nonexistence were the policy not implemented, and of course many of those persons would assert infinite asking prices were their willingness to pay measured in this fashion. As a result, if a cost-benefit analysis is conducted in this fashion that compares one or more policy options that have person-altering consequences with one another and with the null option of doing nothing, each policy option, including the null option, will generate truly massive benefits (and essentially no costs) for distant future generations that will be relatively uncertain in magnitude because of their distant futurity (or even infinite benefits if asking price measures are used), and that will completely dominate the significance of any policy impacts upon existing persons. Such an analysis that can only conclude that "massive if not infinite benefits will result no matter what we do" would obviously not be very helpful for practical decisionmaking.

We are thus faced with a serious analytical conundrum. Recognition of the pervasiveness of person-altering consequences clearly renders it impossible for one to give credence to any cost-benefit analyses that continue to simply assume those consequences away. But how can cost-benefit analysis be modified to reflect the pervasiveness of person-altering consequences without completely vitiating it as a useful analytical tool that can meaningfully discriminate among alternatives?

This is a difficult question. One possible approach would be to measure all impacts on distant future generations by their estimated offer prices, rather than by asking prices, so as to at least be able to generate a finite measure of aggregate benefits for the members of distant future generations, and then discount those future benefits at a high enough discount rate so that they have an aggregate present value of essentially zero. Under this modified approach the massive benefits for the members of distant future generations would then not overwhelm the effects of the policy under consideration upon existing persons. This approach would interestingly lead to the same results in practice as would accepting my recommendation that we should henceforth evaluate policy options only with regard to their impacts upon existing persons (and upon policy-unaltered members of transitional generations), since we are under no ethical obligations based on conventional ethical premises to consider their ef-

fects upon the members of distant future generations since we cannot injure those persons by our actions. This approach would, however, achieve this result in a most awkward and unconvincing fashion by imposing what many analysts would regard as an arbitrary choice of offer price measures rather than asking price measures, and by also imposing what many analysts would regard as an unjustifiably high discount rate (given that it is likely to be only a very few years before the person-altering consequences of most policies that need to be zeroed out in this fashion would be very pervasive).

My recommended alternative approach would be to modify cost-benefit analysis to simply ignore any policy impacts upon the members of distant future generations, or upon the policy-altered members of transitional generations, and to simply confine these analyses to considering the effects of policies upon existing persons and upon the policy-unaltered members of transitional generations. This approach would allow the analytically tractable "the same persons will exist either way" assumption to be credibly retained. Given that we have no ethical obligations to the members of distant future generations that can be grounded on conventional ethical premises, and given that the members of distant future generations will overwhelmingly (if not unanimously) be extremely grateful that we have followed the policies that we have, regardless of what policies we choose to implement, this approach appears to me to be the best way to retain the utility of the cost-benefit methodology for guiding decisions, while now explicitly recognizing the pervasiveness of person-altering consequences.

V. Conclusion

The pervasiveness of the person-altering consequences of our policies has very significant implications for assessing our ethical obligations to future generations. A review of the debate among scholars over the past three decades regarding the ethical implications of these consequences leads me to conclude that except for the rapidly diminishing number of future persons born during a relatively short transitional period following the implementation of a policy whose fundamental genetic identity will not be significantly altered by those consequences, we simply have no ethical obligations to future persons that can be grounded on conventional ethical premises of a secular, consequentialist nature that we should consider in our deliberations regarding that policy. In addition, recognition of the pervasiveness of person-altering consequences and the ethical corollaries of these consequences together totally undercut the use of conventional cost-benefit analyses that ignore these consequences to evaluate policies.

It is a troubling conclusion that our decisions regarding policies that will likely have significant and adverse long-term consequences for the welfare of distant future generations should nevertheless be made only with regard to the rights and interests of existing persons; that under conventional ethical premises our deliberations should not be constrained by any sense of ethical obligation to those future persons, and that our policy assessments should not attempt to incorporate the consequences of our actions for those persons.⁵⁸ Parfit, who has done more to bring to widespread at-

58. I include within this group those members of transitional generations whose identities will not be altered by the policy at issue.

tention the problem of person-altering consequences than has any other scholar, was so disconcerted by this seemingly unavoidable conclusion that he called for duplicity to keep this insight as much as possible from coming to the attention of policymakers.⁵⁹ This is a truly radical and disturbing position for a major scholar to take. However, I believe that Parfit's somewhat panicked reaction to the admittedly frightening policy implications of his analysis is unwarranted.

To the extent that existing persons do wish to have the welfare of distant future generations taken into account in policymaking, whether on religious grounds, or as an act of charity, or on the basis of secular but non-consequentialist premises, or even on the basis of the (erroneous) view that ethical obligations to distant future generations can be derived from conventional ethical premises, my view is that under our current conventional, non-paternalistic decision-making criteria⁶⁰ those preferences should be given the same weight in making those decisions as are those persons' other expressed preferences of comparable intensity. Such preferences are currently strong and pervasive. Therefore, as a practical matter, the insight that ethical obligations to the members of distant future generations cannot be grounded in conventional ethical premises that is provided

by contemplation of the problem of person-altering consequences will probably not have immediate impact upon our deliberations regarding policies with substantial long-term consequences, such as ocean radioactive waste disposal or global warming mitigation decisions, given the current consensus regarding the desirability (for one reason or another) of making at least modest current sacrifices on behalf of distant future generations.

However, to the extent that this consensus that we should continue to make such sacrifices to benefit for distant future generations wanes in response to greater recognition of the ethical implications of the pervasiveness of person-altering consequences, and in response to greater awareness of the shortcomings of conventional cost-benefit analyses that overlook this problem in their attempts to incorporate the consequences of policies for distant future generations, policymakers should accordingly adjust their decision-making criteria to reflect this changing attitude. Such adjustments obviously could have important policy consequences of one sort or another. They could result, as Parfit fears, in our having a much greater willingness to take measures that would enhance the welfare of existing persons at the expense of distant future generations. However, the adjustment could instead take the form of our more explicitly incorporating into our decisionmaking criteria religious or secular but non-consequentialist ethical premises that could justify our continuing to make at least modest sacrifices on behalf of distant future generations. Only time will tell.

59. *See supra* note 42 (discussing statements made by Parfit, at 451-52 (1984).

60. *See supra* note 7.