

# Conservation, Foresight, and the Future Generations Problem

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**ABSTRACT** *The practice of conservation assumes that current persons have some obligations to future generations, but these obligations are complicated by a number of philosophical problems, chief among which is what Derek Parfit calls the Non-Identity Problem. Because our actions now will affect the identities of persons to be born in the distant future, we cannot say that those actions either benefit or harm those persons. Thus, a causal link between our acts and their consequences for particular persons is severed, and the justification for conservation duties toward future generations undermined. I argue for an alternative justification for conservation in the capacity of foresight, which requires us to act not only upon duties that we have now, but also upon those that we will predictably have in the future. In this way, the future generations problem, at least as applied to conservation issues, is overcome.*

The imperatives of conservation can be found in field guides<sup>1</sup> urging backpackers to “leave no trace” of their presence in the wilderness (refraining from felling trees, scarring the ground by digging fire pits, or otherwise altering the places they temporarily inhabit), as well as in statutes that urge natural resource agencies to practice “sustainable use” management of public lands, which has been defined as “the achievement and maintenance in perpetuity of a high level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land”.<sup>2</sup> For both of these conceptions of the demands of conservation, human enjoyment of the natural environment and its resources is assumed to involve a cooperative scheme that includes future use value and the interests of future generations in the decisions regarding current practices. Articulating how and why future

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persons have such claims on present generations is thus an essential prerequisite for defending any such imperative. Nevertheless, justifying conservation on the basis of obligations to future generations is a project fraught with philosophical difficulties.

In contemporary debates over the ethics of conservation, a standard assumption underlying the case for sustainable use of natural resources – that is, use by present generations of renewable resources at levels such that no decline in utility yields from continuing present rates of consumption – holds that it would be wrong to harm future persons by depriving them of their fair share of resources through present overconsumption. In taking an obligation to future persons as a bedrock assumption,<sup>3</sup> conservation debates encounter the future generations problem, which complicates the causal connection between present use rates and future harm in several ways. In short: the person-regarding principle (PRP) in ethical theory (under which morally relevant harm must affect some specific human individual) appears to undercut the premise that present overconsumption may cause harm to future persons. This paper assesses the challenge posed to the widely-assumed (but rarely articulated) conservation obligations by the future generations problem, and includes several efforts to help an ethic of conservation surmount this philosophical obstacle. Rather than responding directly to this problem (denying the seriousness of it and downplaying its implications for present action) this paper aims to circumvent it by grounding obligations of conservation in the capacity of foresight – based on considerations of inter-temporal equality and non-maleficence without appealing directly to the interests or rights of nonexistent others, i.e. without appealing to the PRP upon which moral obligations are conventionally based.

## **I. The future generations problem**

The chief argument against basing obligations to conserve natural resources on the rights or interests of future generations comes from what Derek Parfit calls the Non-Identity Problem. This is a consequentialist objection (though one that affects all theories that depend upon the PRP) involving a causal chain connecting present acts to the identities of future persons. Insofar as the different policy choices we make today may affect reproductive patterns in the future (e.g. by changing the moment of conception), the identities of the people who may exist as future individuals depend upon these choices.

It is in fact true of everyone that, if he had not been conceived within a month of the time when he was in fact conceived, he would never have existed. Because this is true, we can easily affect the identities of future people, or *who* the people are who will later live. If a choice between

two social policies will affect the standard of living or the quality of life for about a century, it will affect the details of all the lives that, in our community, are later lived. As a result, some of those who later live will owe their existence to our choice of one of these two policies. After one or two centuries, this will be true of everyone in our community.<sup>4</sup>

Given the present choice between what he calls “Conservation” and “Depletion” and the different levels of material prosperity likely to result from either option (conservation here defined roughly as the sustainable use of natural resources, and requiring relative austerity) the identities of future persons turn on our present decisions regarding levels of resource use.

Choosing depletion (that is, choosing a high-growth, high-consumption economic model), may increase resource scarcity and significantly diminish the planet’s future capacity to fulfill human wants and needs, causing adverse and even severe consequences for future persons, are the present acts responsible for the ensuing harm to the future persons? In light of the Non-Identity Problem, we can say that the present choice of depletion caused increasing resource scarcity (and its concomitant social, political, and economic turmoil), and that having fewer rather than more resources available in the future is deleterious to the welfare of those future persons. However, we cannot say that our choice of depletion harms any particular individual, since “if we had chosen conservation, this would not have benefited these people, since they would never have existed”.<sup>5</sup> No future person whose existence depends upon our present choice of depletion could regret our having made that choice, and so could not claim to be harmed by it. Had we chosen otherwise, they would never have existed.

Unless their lives are not, on the whole, worth living, then it would be better *for them* to be alive in a world of scarce resources and low prosperity than never to have been born at all. Choosing conservation today is, in effect, a choice to deny one set of possible persons the opportunity to be born and this is *ceteris paribus* worse for all those future persons than any possible harm that might befall them once born, including conditions of severe resource scarcity. Unless the present policy choice *both* causes them to exist *and* causes them to benefit, it cannot be good *for them*, and thus cannot be the object of current obligations. The claim that the current generation has some obligation to conserve natural resources beyond the lifetimes of those currently in existence entails, according to the PRP, either some identifiable set of persons to whom that duty is owed, or at least a causal chain that connects current resource-use decisions to the welfare of future persons. Since our current choices can neither benefit nor harm any particular future person, the only way in which we can presently affect future generations is to cause one set of them to be born, as opposed to another.

Ethical theories relying upon the PRP require Same People Choices in order to compare alternative possible worlds, and so are unable to articulate any harm to a specific future human individual resulting from depletion. In the absence of any identifiable moral harm from depletion, Parfit identifies two considerations from the PRP that recommend it against conservation. First, given that conservation's commitment to limiting population growth (as part of a low-growth, low-consumption sustainable economic program) results in what Parfit calls a Different Number Choice, where more future persons would have owed their existence to our having followed the depletion policy alternative, conservation yields (assuming their lives to be worth living despite greater scarcity) less total utility over time.<sup>6</sup>

Parfit's second consideration follows from conservation's requirement of relative austerity in resource consumption now, which he argues, takes resource conservation into an intergenerational prisoner's dilemma, a dilemma which cannot be solved. In contrast with conservation (or, in this case, a stable rate of population growth that he calls Replacement<sup>7</sup>), growth has what Parfit calls transitory good effects and cumulative bad effects: "The bad effects might be the steady decline in the share per person of the available resources. The transitory good effects might be on the working of this country's economy".<sup>8</sup> Thus, it is true of each generation that they (along with the next two generations, according to Parfit, following the "limits to growth" thesis) would be better off with growth, but each generation's decision to eschew conservation would result in a continuous decline in quality of life thereafter. Other things being equal, we ought to choose what most benefits persons currently in existence. While other things are plainly not equal for the future conditions of those persons who will exist on the planet for which we will have been (for better or worse) stewards, the difficulty in identifying a future person actually harmed by our decision weighs in favor of considering only the consequences of our decisions upon our contemporaries.

The Non-Identity Problem combined with the fact that more persons with lives worth living would be produced by a policy of growth than one of replacement (or of depletion rather than conservation) prescribes the former as an ethical and policy imperative. Neither policy alternative either benefits or harms future persons, but replacement and conservation place a slightly higher burden upon the present generation (as well as the next three), and more future persons with lives worth living are likely to result from policies allowing greater economic and population growth. Combined with the uncertainty surrounding the needs and preferences of future persons, this has come to be known as the future generations problem.

In some ways, the problem seems easy to dismiss. It is doubtful that persons born in the future under conditions of severe resource scarcity would in fact feel gratitude toward their ancestors who, through their shortsighted selfishness and poor resource stewardship, produced such

conditions. Many actions, both praiseworthy and blameworthy, affect the identities (and numbers) of persons, but the mere fact that some act or decision was part of a chain of causes that produced some individual does not justify that act, nor does it exonerate the actor for any harm that might result from it. Rape and torture victims often report that the traumatic event remains with them for the rest of their lives, irreversibly affecting their identities (although not, of course, their genetic identities). Such is true, in a lesser way, for all manner of evils that afflict people and shape their identities. Does this mean that they cannot morally condemn those unwelcome intrusions, on the ground that they cannot prefer to be other than who they are? Must we embrace all historical evils, on the ground that they made the world what it is today?

While the Non-Identity Problem cannot by itself *justify* present growth or depletion, neither can the PRP justify the rate of consumption (with its concomitant effects upon individual welfare) required of conservation, so any favorable “person-affecting” consideration (such as a Different Number Choice) tips the balance toward depletion. One possible strategy for avoiding this conclusion is to dispense with the PRP altogether, distinguishing between acts that make conditions worse for future persons taken as a collectivity, and those that have some effect on the number and identity of specific persons. Here, moral duties would be owed to entire generations rather than specific individuals, so effects upon the identity (though not the number) of future persons would be treated as irrelevant.<sup>9</sup> Another strategy accepts the PRP but denies that individual acts of environmental degradation affect the identities of *all* future persons, causally linking present acts with future harm to at least some specific persons.<sup>10</sup> For example, my decision to drive to work rather than walk or take public transport marginally adds to future pollution and resource scarcity, but surely my act leaves unchanged the identities of most future persons for whom that (marginally) greater scarcity constitutes a burden.

Both approaches, however, encounter similar problems in disaggregating individual responsibility: the first entirely subsumes the individual within the collectivity by focusing upon entire generations (which are not themselves moral agents) rather than persons as objects of harm, while the second erroneously assumes that individual contributions to epiphenomena like air pollution or climate change can be distinguished on the basis of whether each particular act affects the identities of future persons or merely harms them, thereby isolating discrete instances of environmental degradation that cause harm but do not affect the number or identity of future persons. Both, as Parfit puts it, rely upon a version of the principle of beneficence that “will not appeal to what is good or bad for those people whom our acts affect”,<sup>11</sup> and here the future generations problem returns. In the absence of an identifiable party who can lodge a valid claim against us (those of the present generation) to limit our consumption in the interest of avoiding

harm to *them*, (or at least to an identifiable party whose interests are demonstrably and adversely affected by our present patterns of resource use) there would appear to be no defensible basis for arguments that we ought to conserve our resources for as-yet nonexistent persons. If depletion is morally wrong, it is entirely unclear *who* is wronged by it.

The fate of future persons, other animals, and entire ecosystems depends upon the ability of present humans to convince themselves that they have a positive obligation to protect their future needs and interests (or at least a negative duty not harm them), even if that protection is justified on the basis of anthropocentric obligations alone including, perhaps, those to future humans. Few would deny that humans are the species that pose the greatest threat to the ecology of the planet, yet alone possesses the intellectual faculties to avoid that outcome. Therefore, this essay takes the search for an articulation and defense of a duty to conserve natural resources to be a fundamental basis for efforts to identify the particular ecologically relevant practices each owes to others in this regard.

## II. Obligations to conserve

Underlying conservation in theory and practice is the idea of sustainability. As a contested concept, the precise meaning of sustainability has come to be the focus of scholarly debates, but those finer points of contention need not concern us here. Put simply, sustainability requires that present natural resources be consumed no quicker than they can be replaced, so that given stable rates of use and replenishment they will continue to exist in perpetuity. In this sense, only renewable resources can be used sustainably, although some versions of sustainability imperatives<sup>12</sup> allow the use of nonrenewable resources so long as they are replaced with substitutes of equal utility. In addition to rates of resource consumption and reproduction or substitution, sustainability applies to population levels and, indirectly, to pollution or other kinds of ecological degradation insofar as these affect carrying capacity or ecological productivity. Conservation in the comprehensive sense, therefore, requires attention to the full range of such issues, although this paper focuses principally upon natural resource use and replenishment. Put simply: if there is an obligation to conserve natural resources, there exists a concomitant obligation to use them at no greater than sustainable levels.

Two key features of a defensible duty of conservation reveal themselves through a consideration of the nature of environmental harms. First, in order for conservation to be effective, a steady commitment to its imperatives over time is required. A law that mandated sustainable forestry practices on every day except Sunday would obviously be ineffective in maintaining a sustainable forest. Likewise, in order to be effective, conservation prescriptions and proscriptions must be binding on classes of

users of natural resources, not merely upon particular persons or organizations. To ban all but the Conoco Corporation from drilling for oil in the U.S. Arctic National Wildlife Refuge will not be effective against the adverse effects on that sensitive ecosystem. Conservation practices, in other words, must be generally binding along two dimensions: over time and across populations.

In addition to such categorical prohibitions, conservation entails efforts to avoid causing harm to others across distance. As Parfit argues, if I shoot an arrow into a distant forest and harm somebody, I am not exonerated by the physical distance between myself and my unwitting victim, nor am I excused by my ignorance about that person's identity or by the uncertainty surrounding the arrow's chances of hitting a live target. Neither spatial nor temporal distance between agents and their victims can excuse acts of intentional or predictable harm.<sup>13</sup> If dumping toxic waste into a river is banned today for its deleterious effects on others, then so must be the storage of that same waste in containers which can be expected to begin to leak into the river a year from now. In both cases, the proscribed action involves knowingly polluting water, which predictably increases risks of harm to others. To say that the latter harm is somehow less currently relevant is to make a temporal cut that does not withstand careful scrutiny. If conservation is morally obligatory, then it must be so for all, for our lifetimes and beyond. Exemptions along either dimension would defeat the aims of conservation as a principle, and in practice.

As Brian Barry notes, the idea of discrete generations is an abstraction: it assumes that one entire group of persons departs as another arrives on the scene. Since human population replacement is continuous and ongoing, a "prudent provision for the welfare of all those currently alive therefore entails some considerable regard for the future".<sup>14</sup> Because the harms that obtain from depleting or despoiling natural resources often have a delayed effect, a time lag between the offending act and the manifestation of resultant harm, limiting culpability to harm affecting currently existing persons is too restrictive. Imagine that I allow toxic chemicals in my leaky underground storage tank to seep into the groundwater and poison my next door neighbor. That act is no more pernicious than if my neighbor's infant daughter, born next week, is poisoned instead. To absolve a polluter of harm to persons born after the initial act (or decision to act, or any similar temporal cut) that sets in motion the polluting process is to fail to take seriously the nature of pollution, which often functions like a time bomb exposing persons who arrive later to its hazards. Likewise with other natural resources: damage done to forests and wetlands at a particular point in time will continue to adversely affect persons long after, including persons born after the initial act.

Though none of these observations defends an obligation of conservation yet, they do begin to sketch the outlines of one. Indeed, none directly

confronts the future generations problem, and none provides a full justification for the “mutual coercion, mutually agreed upon”<sup>15</sup> necessary for solving Parfit’s intergenerational prisoner’s dilemma, wherein the policy producing the best overall outcome for multiple generations is conservation, but it is also true that each generation would be better off with depletion provided that the others choose conservation. No generation can rationally endorse conservation unless all are bound by it (or so the structure of the dilemma assumes), but each needs a justification for accepting a coercive policy choice that adversely affects current consumption in favor of long-term sustainability. Persons could consent to the coercion necessary for avoiding predictable harm to identifiable others if and only if it can be rationally justified by each generation, either as being consistent with the long-term interests for social choice theory or as being morally obligatory for ethic). Insofar as conservation can be demonstrated to be rational and unavoidable the requisite coercive regulatory apparatus can be set up to enforce sustainable use of resources over time.

In other words, the solution to the problem of choosing conservation may not necessarily require knowing the identity or preferences of the future persons, so long as present persons can rationally recognize that the present choice of depletion will make it impossible to fulfill their obligations to particular persons. Restrictions on present consumption cannot adequately be defended on the basis of the rights or interests of nonexistent persons, but the PRP need not be jettisoned in order to justify obligations to conserve. Instead, identifying existing persons who might later be harmed, or the delayed effects of present actions that have deleterious effects on persons who predictably will come to exist (so that when they do exist, our past actions continue to cause harm) can have force, so long as they are granted equal status under a basic harm principle.<sup>16</sup> In order to be effective, those agreeing to binding conservation limitations in the present must have some assurance that these limitations will continue to be binding into the future, else the outcome that each recognizes as best for all will be vulnerable to undercutting by defectors, and none could rationally agree to it.

If *contra* Parfit we examine the effects of our actions upon our contemporaries and immediate successors, we can readily find justification for an obligation to conserve, and in general to live sustainably as an ethical imperative. The obligations of conservation that are thereby acknowledged and accepted by current persons are not based upon claims made backwards through time by future persons upon present ones, but originate in present persons through the rational capacity of *foresight*. The conception of foresight involves one fairly simple idea: we can often make reasonably accurate predictions regarding the consequences of our actions on others in the future, as well as about the nature of our likely future obligations to others. Although I don’t currently owe anything to my landlord, I can reasonably predict that I will at the beginning of next



month. If I spend all of my paycheck this week, I'll have no problem meeting my financial obligations in the immediate future, but problems will arise when the rent again comes due. Foresight draws the salient distinction (overlooked by Parfit) between current obligations and those duties which will predictably be incumbent upon existing persons at some point in the future, but whose discharge depends in some measure upon present acts.

In the case of conservation issues, many of the consequences of present rates of resource consumption are already well known, and much of the predictable harm that will likely result in the future is based upon fairly firm scientific evidence. As has been pointed out several times in recent theoretical discussions of obligations regarding the environment, the difficulty is not in figuring out how to conserve present resources, but is instead to convince ourselves why we are required to do so. As Barry recently noted, "it is not terribly difficult to know what needs to be done, though it is of course immensely difficult to get the relevant actors (governmental and other) to do it".<sup>17</sup>

This capacity of foresight involves the moral obligation of avoiding predictable harm to others (a consequentialist harm principle that both Rawls and Parfit could accept). Conjoined with a basic principle of equality that refuses to discount harms simply because they accrue in the future, foresight requires that we take just as seriously problems that our present actions will cause tomorrow as those that they cause immediately after the offending actions. Given the proposition that agents ought not to act in such a way that the predictable consequences of their actions will result in harm to others, and given also the ability of persons to foresee obligations that they will come to have in the future (if, for example, they expect to have children, they likewise can expect to incur moral obligations to those children), then the obligations of foresight can be formulated in the following principle:<sup>18</sup>

*P: An agent should not perform an action that ensures that she will be unable to deliver on obligations that, although she does not have them now, she can anticipate having in the future.*

Because of the problematic nature of establishing obligations to future (and therefore nonexistent) persons, foresight instead considers present and foreseeable future obligations we have (and will come to have) to actually existing persons. Since parents are generally regarded as having obligations to their children akin to those articulated by Rawls through the just savings principle (even if, at some fixed point in time during infancy, the child is unable to either consent to or reciprocate this obligation), the idea of foresight extends this chain of obligation out to the consideration of future consequences of present acts.

In considering the degradation of natural resources, the principle of foresight aims at avoiding harmful consequences of acts that will obtain over time, and further aims to align present duties with those that will predictably arise in the future. Equality concerns that undergird a resource-based harm principle (based, perhaps, upon an *intragenerational* theory of distributive justice) prohibit our depriving others of their fair access to natural resources, insofar as such deprivation causes tangible harm to them, and provided that these deprivations are avoidable. Conjoining this with *P* includes among those parties considered within the moral universe those to whom we can anticipate having an obligation in the future: our generation's children.<sup>19</sup> If, in other words, there will one year from now be actual persons (although they do not currently exist) who are adversely affected by our acts today, then not only will these acts be wrong in one year, but they are also wrong today.

Put another way, those actions that we undertake today but which harm only those born after January 1 of next year will clearly be wrong after New Years Day (this much is true without *P*); moreover, our ability to make reasonable estimates about the effects of our actions does not excuse us from harm-causing acts for the remainder of this year. Insofar as foresight causally connects our acts with those harms, it proscribes them.<sup>20</sup> In this way, where failure to conserve resources results in harm to persons who currently exist, and will in the future continue to cause harm to persons who will come to exist, conservation is defensible as a practice because of the demands of foresight. Foresight reminds us that the nature of conservation requires adherence to binding commitments that extend over time, and prevents our defection from this cooperative scheme. Given that conservation avoids those foreseeable harms and thereby meets those parallel foreseeable obligations, it becomes morally obligatory.

Of course, no agreement in the present can alter the depletion<sup>21</sup> caused by previous generations, so such obligations or agreements cannot be the result of reciprocity; they must instead originate in a linear relationship that looks backward for the source of obligations and forward for its recipients. Put another way, the chain of obligation moves in only one direction: from the present to the future. If present people can be made to recognize the necessity of conservation (that is, if resources are to continue to be available for persons in the future), then they can, indeed must, consent to a practice or policy of conservation that is binding through time.<sup>22</sup> This policy, as Rawls recognizes in his discussion of just savings, is most difficult for the first generation that must practice it. The second generation inherits the practice of conservation (as well as the benefits that result from the previous generation's having practiced it), and in so doing is bound in an obligation of reciprocity to others. As Barry points out, there are no temporally distinct generations with separate sets of obligations and conditions and so the others to whom we are bound in relationships of reciprocity are older and

younger members of our current society. Our youngest contemporaries will be bound later in life to those who are not yet born, and so our obligations are extended in this way into the future. Reciprocity binds present generations to a practice from which they all benefit, and to which they are thereby required to adhere. Since conservation is an ongoing obligation rather than a one-off act, the time horizon for conservation practices must not coincide with the lifetimes of particular humans, and so must entail similar limits on consumption (as well as similar duties) regardless of age. Those born tomorrow will inherit similar obligations to our own, suitably adjusted to changing conditions.

Given this understanding of agreeing to a practice of conservation based upon rational foresight, the pitfalls associated with Parfit's Non-Identity Problem are avoided, since a decision to be bound through time to conservation doesn't entail that present generations know the actual identity of the person they seek to avoid harming by conserving natural resources. Similarly, the other uncertainty problems associated with claims by future others are likewise avoided. What is next needed, then, is an elaboration of the claim that foresight might rationally demonstrate the necessity of conservation, and therefore be binding (as an obligation of justice) on present generations. In order to establish this point, it must be demonstrated that present individuals are obligated to conserve, without smuggling in claims made by or on behalf of future persons. In other words, it must be assumed that nonexistent future persons have no morally relevant claims on present persons. To do otherwise is to assume a crucial premise, as others have done in taking as given a concern with future persons. Following the common practice in philosophical papers of this sort, this point will be illustrated through a logically-possible case involving a desert island community that is completely isolated, yet contains residents who are perfectly rational and well-educated in contemporary moral and political philosophy.

### **III. The desert island case**

Suppose, for example, that a self-sufficient, closed island community with a stable population base relies for some significant measure of necessary utility on the trees in a forest on the island. On this island, it is not uncommon for people to live into their 90s, but nobody ever makes it to 96 years. Suppose further that the island's trees are not self-regenerating, but must be replanted by people if they are to replace those trees harvested for use. Finally, suppose that the only utility gained by persons from trees comes from their use as lumber, which requires a mature tree that is at least 100 years old. So long as useable trees remain, the island community prospers, but should the mature trees in the forest ever completely

disappear, the people will quickly follow them into oblivion. In this case, can any moral obligation of conservation be assumed?

Each year, one percent of the original forest is cut down and used for timber. During the first year ( $t_1$ ), it is clear that every currently living person will have timber available for use throughout her lifetime without any replanting program. Furthermore, anybody alive when a tree is replanted is assured that it will be of no value whatsoever during their lifetimes. The only possible justification for replanting would appear to be through the assumption of an obligation to future generations, which as Parfit and others point out, cannot exist. Although in possession of perfect foresight into the consequences of their decision, the islanders follow the philosophical advice they receive from Parfit (*Reasons and Persons* washes up on shore, and is afterwards taught in schools) and do not replant the trees they have removed.

Five years later ( $t_5$ ), having depleted five percent of the forest, it is clear to the islanders that some of their newborn infants will be alive the year the last tree is cut down. While all of the adults (those capable of rational decision-making) on the island are assured of a constant supply of trees throughout their lifetimes, the fact of the appearance of these new moral subjects forces them to reconsider their policy of not replanting the trees they remove. All rational adults are in full knowledge that, upon complete deforestation, the remaining islanders will retreat briefly to a Hobbesian state of war of all against all (plentitude being a prerequisite for civilization) before vanishing completely. Do they begin to replant now, for the sake of their children? As was the case at  $t_1$ , any tree planted at  $t_5$  will be of no value to anybody currently alive at  $t_5$ . Since moral obligation cannot attach to those not yet born (those who might enjoy the benefits of a planted tree), there can be no moral obligation to replant, despite full knowledge of the grisly consequences inevitably waiting for their youngest fellows. It is already too late to change the replanting policy. Doomsday awaits the islanders at  $t_{99}$ , when the last remaining tree will be felled and not replanted.

Clearly, every year after  $t_5$  contains the same fatalistic resignation that nothing can be done to avert the pending disaster. Could this outcome have been avoided? In year  $t_4$  the replanting decision would be rejected, since not only would no currently living persons be affected, but also the decision in  $t_1$  made deforestation inevitable, regardless of any future actions. As in the "Tragedy of the Commons", the logic of the replanting decision rushes the islanders headlong into ruin, despite their full knowledge of the consequences of their actions. Perhaps, in the final human years on the island, Parfit will be demonized for his contribution to the island's Armageddon, but unfairly so, since every islander fully accepts the truth of his claims about obligations to future generations.

This scenario contains some obvious simplifications that fail to hold in the real world. Even if no substitutes for trees were available, and even if per

capita consumption of trees couldn't be reduced,<sup>23</sup> the islanders could undergo voluntary population reductions in order to reduce rates of consumption, delaying the inevitable exhaustion of the forest. Even so, the decision to replant will be dictated by the ability of those efforts to benefit some currently living person, and the islanders will eventually perish (maybe in year  $t_{115}$  instead). The trees, although commonly-held, could be subject to market distribution, where the price ratchets upwards every year as supply decreases (on a supply/demand graph, the effects of deforestation would be represented by a shift upwards in the supply curve every time the total stock decreases). Without available substitutes or alternative suppliers of trees, the market would only make trees more expensive as scarcity increased, so the final years, in addition to the anxiety regarding the coming catastrophe, would be wracked by inflation. If trees were privately held, the end would come just as surely, although with additional profiteering for the forest owner and cruelty to those forced to pay monopoly prices to stave off earlier-than-otherwise-possible death. Short of some breakthrough by the island's genetic engineers allowing for the production of trees that can mature in a period of less than 95 years, and unless this breakthrough is made in time to prevent complete deforestation, the outcome in year  $t_{100}$  (or  $t_{115}$ , or whenever it eventually occurs) is determined by the judgment in year  $t_1$ , and every subsequent year, that replanting is not morally obligatory.

Since Parfit, let's say, objects to genetic engineering (in some later-suppressed apocrypha to which only the islanders are privy), is there anything else which might save the islanders from their own self-destructive logic? So long as trees take longer than a human lifetime to mature, they will never be replanted and will eventually be exhausted. If, however, a kind of futures market in trees were established, and shares in tree futures could be traded, then the islanders may be able to stave off deforestation. In year  $t_1$ , let's say, trees are planted by the islanders as part of a for-profit scheme that involves the selling of shares of the future value of the tree. While nobody alive in  $t_1$  could hope to redeem her share of the mature tree in year  $t_{100}$ , that share might nonetheless be valuable if it could be held and traded. Beginning in year  $t_5$ , some new parents might want to buy these shares in tree futures to assure their children available wood in their (the children's) final years. As the years pass, these futures become more and more valuable, since more and more actual persons would be willing to pay for future shares in a tree that they might need in their lifetime. Although she couldn't benefit from the actual redemption of the futures share (being dead by then), the speculator in year  $t_1$  would nonetheless rationally be interested in the trees planted that year, because gains from the transfer of that share could be realized during her lifetime.

The point of the above example is not to argue that free market economics can save the world. Instead, it is to suggest a way out of the dilemma raised by the problem of future generations. The islanders have a

rational interest in conservation, even without considering the interests of future persons, because the continued availability of trees is valuable *to them*. Even without the futures market scheme, they are able through foresight to recognize that conservation is a rational practice, since only by present adoption and future adherence to a policy of conservation can disaster be averted. To choose to deplete the trees today is functionally equivalent to condemning to death all those islanders who might be born next year. That they don't know the identities of these future persons, or that they might themselves not have any more children (or grandchildren, etc.) is not relevant. The failure to conserve will, all must realize, affect those who will be born, and who will suffer as a direct result of present decisions. To return to Parfit's example, if people know that they can prevent certain harm by consenting to the enforcement of a particular practice, they are obligated to do so. They must choose conservation because they don't want to be responsible for making the choice that leads to the avoidable suffering of others – people whom they will likely know over the years.

To be bound to the practice of conservation requires not only that people limit their consumption this year, but that they agree to do so in perpetuity (otherwise, the game theory solution is lost). Only if an agreement were binding across time would people now be motivated to adopt and adhere to one. It does little good to conserve in  $t_1$  if in  $t_3$  people fail to do so or even if there is suspicion that they might fail to do so. If, therefore, we have obligations in  $t_1$  to conserve, then those obligations by logical necessity must continue in  $t_2$ , and so on. And while in  $t_1$  we may only have obligations to benefit those currently alive, some of them will have obligations in  $t_{25}$  toward those born over the upcoming quarter century, and so on. In this way (sometimes described as a “zipper” because it connects a long string of persons by binding them to their immediate neighbors), our obligations extend out across generations, including to those whom we will never live to meet. Through being party to this ongoing obligation of conservation that is rationally consented to, because of rational foresight into the consequences of an alternative decision, we have an indirect obligation to future generations that is every bit as compelling as a direct one.

#### **IV. Conclusion**

To return to the impetus for this inquiry, it would seem that an obligation of conservation could, after all, be justified on grounds of equality (in ensuring adequate resources for others), as well as the more negative concern for avoiding predictable harm to others, and it can be accomplished without rejecting the foundation person-regarding principle in ethics. That is, if people's interests count equally (while they are actually in existence), and if the continued availability of natural resources affects equality of opportunity in the ways suggested earlier, then persons with a sense of justice and

fair play through foresight ought rationally to commit to conservation as an ongoing practice. Importantly, this defense of conservation doesn't depend on the Rawlsian condition that principles accepted in the original position apply also to previous generations (problematic for the motivational reasons suggested above); instead, it is a decision that can also be made by rational persons with full knowledge of existing conditions and without regard to reciprocity at least in this sense).<sup>24</sup>

Moreover, it does not rely on the effect upon the identities of future persons that Parfit describes, since the obligation is manifest in the consent to an ongoing practice, which is recognized as necessary to avoid the harms which foresight illuminates and cannot avoid without cooperation across generations. The obligation does not come from claims made by future persons, nor is it based upon calculation of overall consequences for particular persons; it comes from the recognition that the only solution to the dilemma posed by the intergenerational distribution of natural resources (and the temptation of each generation to overuse them) comes through, and only through, cooperation over time between the overlapping generations of persons who transitorily coexist within a society on a perishable planet. Indeed, given our rational foresight and our present knowledge regarding the ecological impacts of our present actions, it would seem that cooperation, and from it conservation, is our only choice.

## Notes

1. See, for example, John Hart (1977) *Walking Softly in the Wilderness: The Sierra Club Guide to Backpacking* (San Francisco: Sierra Club Books).
2. U.S. Congress, *Multiple-Use Sustained-Yield Act of 1960*.
3. Brian Barry, for example, begins his discussion of sustainability with the "simple thought" that "as temporary custodians of the planet, those who are alive at any given time can do a better or worse job of handing it on to their successors." See Barry (1999) "Sustainability and Intergenerational Justice" in *Fairness and Futurity*, Andrew Dobson (Ed.) (Oxford University Press), p.93.
4. Derek Parfit (1984) *Reasons and Persons* (Oxford: Clarendon Press), p.377.
5. *Ibid.*, p.366.
6. Parfit assumes in his argument that the higher standards of living that are likely to result from the higher consumption rates under depletion will lead to more rapid population growth. This claim, however, may be empirically false. Rising standards of living have the effect of decreasing rates of reproduction, since number of children is an economic function of families and the need for parents to have support from children in their old age. If true, this observation complicates Parfit's contention that the policies of conservation and depletion lead to Different Number Choices. Depletion may not only reduce the natural resources available to future persons, but also reduce their number (harming them, by Parfit's logic). For this point, I am indebted to Erik Olin Wright.
7. Parfit's argument about population growth mirrors the problem of conservation versus depletion in its relative effects upon present and future generations, and so I rely upon both to present and examine the Non-Identity problem.
8. Parfit (1984), p.382.

9. For an example of this strategy for refuting the future generations problem, see Edith Brown Weiss (1989) *In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity* (Dobbs Ferry, NY: Transnational Publishers).
10. See Alan Carter (2001) "Can we harm future people?" *Environmental Values* Vol.10, pp.429–54.
11. *Ibid.*, p.378.
12. Strong sustainability, or weak substitutability, denies that artificial substitutes can replace depleted natural resources in a sustainable society, but weak sustainability (or strong substitutability) allows for such substitution. The main issue of contention concerns the relative value of natural resources and artificial substitutes, where some critics deny that the latter capture the full range of value possessed by the former.
13. Parfit (1984), p.357.
14. Brian Barry (1977) "Justice Between Generations" in *Law Morality & Society: Essays in Honor of H.L.A. Hart*, P.M.S. Hacker and Joseph Raz (Eds.)(Oxford: Clarendon Press), p.268.
15. This phrase, intended to evoke consensual regulatory solutions to collective action dilemmas in environmental regulation, is taken from Garrett Hardin's (1968) "The tragedy of the commons" *Science*, Vol.162, pp.1243–48.
16. Indeed, Parfit endorses (and the PRP requires) inter-temporal equality, which treats persons as moral equals regardless of generational membership.
17. Barry (1999), p.116.
18. For the suggestion to formulate the argument using this principle, I am indebted to Harry Brighouse.
19. The obligation is not limited strictly to persons with children of their own, but extends to society where some have children, and others are thereby bound not to harm those who over time come to exist.
20. (a more elaborate defense of this proposition follows in section III).
21. Leaving Parfit's argument behind, I shall no longer (as he does) capitalize the policy choices of conservation and depletion.
22. Institutions of justice, such as those public policies that mandate conservation as a practice, should not be regarded as merely existing at particular temporal points, but rather as existing over time and across generations. The only way to implement conservation policies is by making them continuous and binding over a significant period of time (subject to adjustment for changing needs and conditions).
23. Suppose instead that trees could be used more efficiently, so that consumption could be reduced. By the same logic, consumption could only be reduced for the sake of currently living persons (and not for nonexistent persons), so such efforts couldn't begin until  $t_5$ . That year, and every year after, consumption could be reduced by  $1/95$  of its original  $t_5$  level. If possible, complete deforestation could be indefinitely delayed by such a strategy... But alas this is not possible. By year  $t_{100}$ , this would amount to zero consumption, which is beyond the parameters of the original assumption (that use of trees was necessary for life). Far before this, however, natural limits to how efficiently a tree can be used would be reached. Houses built from wooden beams that are too thin, for example, would begin to collapse. Rescuing the islanders through more efficient use of trees is impossible.
24. There is a kind of reciprocity involved in this transaction, since each person (after the generation that practices conservation) both receives benefits and incurs costs for adhering to conservation guidelines, but it is not strict reciprocity where there are exactly two actors exchanging obligations for benefits.