

“Unilateral Actions in a Tragedy of the Commons”

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Many people think that in a tragedy of the commons (where many individuals are depleting a common resource through unregulated overuse), one's ethical obligation is the Kantian one—to do only what one can will that all do. If one cannot will depletion of the common resource, one should reduce one's own use to the level that the commons could sustain if everyone did the same. And this obligation is independent of the actions of others: each individual is obligated regardless of whether others act on their obligations. I call this, reducing one's use independent of the actions of others, “unilateral reduction.”

If correct, this belief has important implications, because many major environmental problems are commons tragedies. Global warming, for instance, is a result of overuse of the shared atmosphere as a sink for greenhouse gases, and nearly all citizens of the developed countries use this sink at greater than sustainable levels.

In a previous paper<sup>1</sup> I argued that this belief about our ethical obligations is mistaken. We do not have an obligation to reduce our use of the commons unilaterally. We are instead obligated to support collective measures to reduce everyone's use to a sustainable level, and obligated to reduce our own use only as part of these efforts, which unilateral reduction is not.

If I am correct about our obligations in a tragedy of the commons (henceforth abbreviated T of C), then this implies (1.) that our ethical obligation is to do the political and organizational work to combat environmental problems, rather than to alter our own individual behavior unilaterally; (2) a person who advocates changes to protect the commons (or environment) while refusing to make unilateral reductions of the kind she recommends for all is not for that reason a hypocrite; (3) we should resist the temptation to feel morally superior to those who do not make unilateral reductions.

In the present paper I summarize the reasoning for my conclusions in “Ethics in a Tragedy of the Commons” I make some additions and clarifications to my earlier argument, and then I explain in some detail the reasons that remain for making unilateral reductions in one's burden on the commons, despite my argument. I will also deal with four additional topics, which I will identify below.

### *What is a commons?*

Many of our major environmental problems resemble tragedies of the commons, involving many users degrading resources and thereby endangering the long term welfare and survival of the commons and its users. The term “commons” is usefully elastic, since it can apply to concrete entities like a specific forest, to global entities like the atmosphere, or to abstract entities like a species of living things or global biodiversity. Thus pollution of air, land, and water are commons problems, as is the depletion of populations and extinctions of species, at least insofar as these result from human overuse of some shared resource.

A commons is a resource shared by many users. In a renewable resource commons one can usually identify a source—for example some underlying entity like an aquifer, a forest, pasture, or ecosystem—and a flow—water, lumber, fish, or absorptive and detoxifying capacity—that are harvested from the commons.

A T of C occurs when users degrade the commons by overuse. In such circumstances the flow of the commons may be reduced below the maximum sustainable yield, and long-range or permanent damage to the source may occur as well: the forest,

pasture, or ecosystem might be so altered as to be incapable of regeneration. In his memorable parable popularizing the phrase “Tragedy of the Commons” Garrett Hardin imagined herders sharing a pasture and deciding whether to put more or fewer animals on it.<sup>2</sup>

*The original argument: what is special about a tragedy of the commons?*

A T of C differs from more familiar ethical problems principally in three features.

First, ethical obligations usually cover actions in which each immoral action causes harm and is therefore morally objectionable. In a tragedy of the commons, by contrast, no individual user is drawing enough from the commons to harm it, and therefore no individual user’s actions are harmful, considered in themselves<sup>3</sup>. This is not the familiar situation where each action is harmful and wrong in itself, and more actions of the same type become terrible simply by addition. Murder is wrong, and mass murder or serial murder is horrible because it is an amplification of the total harm. In a T of C, by contrast, no individual user’s take from the commons is harmful or wrong. The harm to the commons occurs only when a total volume of use occurs, a volume for which no single user is responsible<sup>4</sup>.

The goal of preventing a T of C is protection of the commons, not preventing use of the commons. Unlike more familiar ethical situations, there is no point to an individual reducing her use of the commons except as a contribution to protection of the commons. Consequently if her reduction cannot reasonably be expected to contribute to protection of the commons, it has no point. As I will now argue, this is the case for unilateral reductions, that is, they are essentially pointless considered as a solution to commons problems.

The second, and most familiar feature of a tragedy of the commons is that its structure makes it unreasonable to expect that unilateral reductions in use will contribute to a solution to the problem. This is because of several further characteristics which shape the incentives and possibilities that users face.

1. The costs of reducing use are born by the individual who must forgo whatever she gives up. The benefits, however, are available to all users, who can now take whatever the first user passed by.

2. As a result, the gains of any individual’s sacrifice are likely to go to some other user rather than to the benefit of the commons.

3. In turn this means that the sacrifices of a great many users can be undone by the selfishness or stupidity of a small group (at the limit the sacrifices of everyone can be undone by a single individual) who are too self-regarding to sacrifice for the common good or too dense to see the need.

4. These facts are easily understood by all the users, which means that a spontaneous movement to limit use of the commons is even less likely. Each user can understand that others also see the incentive structure and why it makes unilateral reduction seem fruitless, and thus that it gives every user yet another reason not to make unilateral reductions. Two other factors are also important.

5. The likelihood that users will achieve a solution to an impending T of C is inversely proportional to the value of use of the commons, or put differently, directly proportional to the inconvenience of reducing use. If the sacrifice of decreasing use of the commons is small, then it is more likely that people may make it, even if it seems

pointless. If, on the other hand, the cost of reducing use is high, it is less likely that anyone will do it, especially when 1-4 are considered.

6. The likelihood of avoidance of a T of C is inversely proportional to the difficulty of communication among commons users. In my original paper I specified that a rule of the game theoretical construct that implicitly underlies Garrett Hardin's pessimistic conclusion is that commons users attempt to communicate only through the impoverished medium of increasing or decreasing their use of the commons. A key element in avoiding a T of C is to break this rule and enrich communication to permit organization of a collective scheme for avoiding it.

If you disagree with this, ask yourself why most environmentalists still drive an automobile despite knowing that this means they are contributing more CO<sub>2</sub> to the atmosphere than is sustainable for the 6.5 billion people on earth. I think that at some level they understand that not only would it be very inconvenient for them to give up their car, it would also do no good. It's not just that their reduction amounts to so little; it's also that they know so few others are—or will be—making comparable sacrifices. If someone's reduction could save the commons, I hope they would make it, despite the inconvenience. If it, together with matching sacrifices from others that will actually occur, would save the commons, I hope they would make it. But in the absence of any reasonable expectation of either of these, I see no point to the sacrifice, and few have in fact made it.

Finally, the third important difference between a T of C and a familiar ethical problem is that in a T of C there is no collective agreement that overuse of the commons is wrong or forbidden. While there are ethical situations in which one must decide what to do without the guidance of familiar and agreed-upon guidelines, these situations are comparatively rare. And when they occur—when one needs to pioneer some ethical innovation—it is surely the case that one's individual action is likely to do harm. What else would alert one to the need to make an ethical choice when no conventional standard condemns one's action?

But in a T of C, by hypothesis, the users have not yet agreed that unsustainable use of the commons is wrong. If they have, then this will have come as the result of a collective agreement to save the commons, and one's overuse would constitute free riding on that agreement.<sup>5</sup> This—free riding, or attempting to get the benefits of a collective agreement to prevent collective harm while also trying to get additional benefits by cheating on the agreement—is the paradigm of immorality. By contrast, in a T of C, the agreement to reduce harm by mutual restraint has yet to be reached.

*The original argument: No ethical obligation to unilateral reduction*

I will now restate and amplify the argument implicit in the last section. I believe that people arrive at the conclusion that we should make unilateral reductions by mistakenly assuming that obligations in a T of C are not importantly different from obligations in more familiar ethical contexts. When an individual action is harmful and wrong—stealing, lying, killing, the familiar list of immoral actions—one should abstain regardless of what others do, because one's action causes unjust harm regardless of what others do. In a T of C, by contrast, one's use of the commons is harmless in itself, and it is only in conjunction with others' use that harm is done.

In a T of C the purpose of reducing individual use of the commons is to prevent harm to the commons. It is not, as in familiar cases, to prevent individuals from doing individually harmful acts, for no individual act is harmful. Because of the circumstances enumerated above as 1-6, there can be no reasonable expectation that an individual who reduces her use of the commons unilaterally will be contributing to a solution to the problem of overuse and aggregate harm. Hence her unilateral reduction has no reasonable expectation of preventing harm, as it would in a familiar moral situation where each individual action is individually harmful. Therefore there is no point to her unilateral reduction, and so no moral obligation to reduce use unilaterally. This is especially true when use of the commons is important to an individual, so that in making a unilateral reduction she would make a large sacrifice with no reasonable expectation of achieving the good she seeks by making the sacrifice.<sup>6</sup>

Despite apparent resemblance, a T of C also differs from ethical situations in which we have a moral obligation to contribute to some collective scheme to achieve a common good. Paying taxes and voting are examples. There is nothing intrinsically wrong or harmful about refusing to hand over one's private property to strangers (i.e. pay taxes), or failing to show up and a particular time and place to make a choice. These things become wrong and harmful only because of a convention. So they seem similar to use of the commons because in both cases no individual action is wrong in itself. It becomes wrong only when the larger field of collective behavior is considered. A further similarity is that usually no individual failure to fulfill the obligation is significant. (Your taxes and your vote are a drop in the collective bucket.) Yet if many people fail to vote or pay taxes much harm will be done to the community. So we have an individual obligation to do our share, even though not doing our share is, when considered in isolation, of little or no consequence.

I agree that we have the obligations described in the situations mentioned. But a T of C is importantly different. For in a T of C there is as yet no collective scheme to coordinate individual actions for the collective good. The reason one has no obligation to make unilateral reductions is not that one's reduction is so small in proportion to the whole (as one's vote is so small in proportion to the whole). It is rather that, unlike the case of voting or paying taxes, in a T of C one can have no reasonable expectation that one's sacrifice will be met by matching sacrifices by others, thereby promoting a common good. To conclude that one has an obligation to make unilateral reductions in a T of C is not, as is commonly supposed, like saying that one should pay taxes even if one's neighbor is cheating. It is like saying that one should pay taxes even though the institution of taxation has yet to be created.

### *Our obligations in a T of C*

Our first obligation in a T of C, then, is the equivalent of inventing voting or taxation for the common good. In my earlier paper I wrote that commons problems must always be solved by collective action, or what Hardin calls "mutual coercion mutually agreed upon."<sup>7</sup> I now prefer the term "collective scheme," for reasons I shall explain. Additionally I now realize that commons problems can be solved in more than one way, including spontaneous adoption of new technologies. This will be explained below.

"Collective scheme" is preferable to "collective action" to lessen the suggestion that such schemes involve agreements among the users themselves. For local commons,

face to face agreements may occur, but for the national, regional, and global commons issues that are most important environmentally, negotiations are more likely to involve legislatures and governments.

Further, as I use the term, “collective” refers to the fact that these schemes are designed to change the collective use of the commons, not to the way the schemes are adopted. As a democrat, I naturally prefer schemes endorsed by those whose actions are governed by them. But an undemocratically imposed scheme that regulates use of the commons can be a solution to commons problems as much as democratically adopted schemes can.

Broadly, such schemes can take several forms. One can impose rules on use or one can alter the incentives users face in some other way. Rules require monitoring of use and enforcing the rules with sanctions.<sup>8</sup> Positive incentives for lessened use or costs for high use are also possible. The kinds of measures often called “command and control”—things like pollution standards or mandated technologies—are rules on use of commons. Green taxes and tradable permits are examples of incentives, providing both discouragement for high use of the commons and encouragement to adopt alternative techniques or technologies reducing use. Mass transit, to the degree that it is safe, affordable, and convenient, provides an incentive to reduce pollution of atmospheric commons by private vehicles. Privatizing a commons—a scheme with a notorious history—counts as a collective scheme in my classification insofar as it is adopted with the intention of altering the behavior of commons users. It is also “collective” in that property rights are a social creation rather than a natural fact, and defining and enforcing private property rights depends upon collective efforts.

The spontaneous adoption of new technology in a way that solves a commons problem is illustrated by the elimination of the problem of horse manure, once a major pollutant in urban commons. No collective scheme solved the problem. Instead automobiles replaced horse transit (and so substituted one type of pollution for another). Similarly, a really radical breakthrough in energy technology (nuclear fusion, for example), however unlikely, could resolve most of the commons problems resulting from atmospheric pollutants more quickly and effectively than any collective scheme is likely to.

Yet in most cases we will need to resolve commons problems by collective schemes. It may be significant that solving the problem of horse manure simply substituted other pollutants. In any case, it is overly optimistic to think that technology alone will solve our commons problems in time to prevent environmental catastrophe. As a result, collective schemes will be the main means for solving commons problems, and I leave aside the technological possibilities in the rest of this paper.<sup>9</sup>

### *A counter-argument and response*

Before turning to other questions and clarifications I would like to address an argument that is frequently made against my position. It is often objected that, despite all I say, unilateral reductions are a good thing because they at least make some small contribution to the solution of the problem. They may be small in proportion to the total damage occurring in the commons, but they are concrete contributions, and if enough people recognized the value of making them, they would become significant.

I have already stated why I think there can be no reasonable expectation that a sizeable number of individuals will—in the absence of changed incentives—make unilateral reductions in their use of the commons. But there is another important consideration. Recall that a typical feature of a T of C is that unilateral reductions by one user become available for other less scrupulous users. If you put fewer sheep on the commons, the grass they don't eat is available for the sheep of some other user.

And this frequently true in environmental commons as well. If it is true that together you and I and a bunch of other conscientious folks can reduce use of fossil fuels to a measurable degree, then it is also true by the law of supply and demand that we will reduce the price of fossil fuels to a comparable degree. And this will encourage increased use by other, less conscientious persons. Our sacrifice, in other words, will be eaten by the unscrupulous.

If you think this is a purely theoretical result, review the history of oil use and prices in the wake of the OPEC actions during the 1970s. OPEC successfully raised the price of price of oil (and caused a worldwide recession as a result). In response consumers and industry adopted a combination of conservation and efficiency measures, including for instance a trend toward smaller, more fuel efficient cars in America. This kept the price of oil low, and consumers began to get careless again about conservation and efficiency. The fad for SUVs and pickup trucks for suburbanites was only one result. In short, conservation led to lower prices which led to higher consumption, undoing the results of conservation.

I hasten to add that it would have been possible to avoid this result with intelligent schemes to coordinate collective action. Increasing fleet average mileage standards for U.S. vehicles was one option, increased fuel taxes was another. A combination would have been better still. I'm not saying that there is no way to save the commons. I'm saying that unilateral reductions in use are not the way.

It should also be noted that the argument I have just given that unilateral reductions in use will result in lower prices and increased demand must be qualified. It is sound, I believe, for undifferentiated commodities sold on a mass market, like oil or water. It may be less so for more differentiated commodities where price elasticity is less. That is, if prices cannot fall much—perhaps because of production costs—then reduction in demand won't be met by lower prices and increased demand by others. If demand for Ferraris fell by 20%, it is doubtful that the manufacturer would simply drop prices and keep producing the same number of vehicles.

Another very important qualification is that we need to distinguish between decreasing demand for a mass commodity and creating demand for new products. If you buy a hybrid, or a windmill, or a solar array, you increase demand for the product, and the producer has an incentive to produce more. If enough people buy the product, the producer can gain greater economies of scale, making the product cheaper and more

attractive, and so increasing sales further. In such a case, while early buyers may be making some sacrifice, I can see no way that others can undo the demand they create. On the other hand, other users can burn the fuel saved by driving the hybrid. So while you may be helping a new technology to make its way in the market, the fuel you hoped to save by doing this may well be burned in someone else's vehicle precisely because you saved it.

This tendency for lessened demand by some to increase use by others is yet another reason why dealing with our most significant environmental problems is likely to involve collective schemes rather than unilateral actions. Collective schemes can take account of this tendency and alter users' incentives in order to avoid its bad consequences.

Recall that while I deny that we have a moral obligation to make unilateral reductions in use of the commons, I believe we have an obligation regarding collective schemes to address a T of C. Our first duty is not to impede development of a collective scheme, that is not to oppose one simply from unwillingness to make a shared sacrifice for the common good.

Our second duty is to support appropriate collective schemes when they are developed. "Appropriate" means schemes that are reasonably fair and have a reasonable chance of success. "Appropriate" is not a weasel word that allows a morally conscientious person to escape her obligations. Moral agents must make judgments, not only about when a moral rule or guideline applies, but also about what rules and values to adopt. Blind obedience would entail abrogation of moral agency. A truly moral person, however, will not only make these judgments conscientiously, she will also, with equal conscientiousness, develop and scrutinize her ability to judge. More than that we cannot ask of a free moral agent, and the qualifier "appropriate" merely acknowledges that such judgments are unavoidable, and necessarily include judgments about whether proposed collective schemes should be supported or opposed in favor of something better.

Our third duty is to work for adoption of an appropriate array of collective schemes to solve commons problems. It is here that the duty becomes most difficult to specify. How much effort should we make? What kinds of efforts? For which schemes should we work, given the large number of commons problems and the many efforts to address them? In making these decisions we must each be ruled by our conscience, for there is no non-arbitrary way to specify answers.

This obligation is what Kant called an "imperfect" or "wide" duty. That is, we have a duty to set as our end the development of collective schemes to protect the commons. We cannot, however, specify exactly how we are to achieve that end, or how much we must contribute to achieving it. One could, for example, adopt a tithing rule, pledging 1/10<sup>th</sup> of one's work time to political organizing and 1/10<sup>th</sup> of one's income to appropriate causes. But any such rule is, however, not only ambitious, but also arbitrary. Saying that our duty is "imperfect" provides no more excuse for a conscientious agent than does calling for her to judge which schemes are deserving of support. Nor would specifying the exact level of obligation magically impose a more binding obligation on an agent who is not conscientious.

#### *Four additional topics*

I turn now to the four additional topics I promised above to address, namely:

1. When is a situation sufficiently like a tragedy of the commons so that one's obligations are to work for a collective action rather than to reduce one's use of the commons?
2. Given that a scheme for collective action can be informal (like ethical norms) rather than formal (like a law), when is a collective scheme sufficiently developed as to command support, and therefore reduction of one's consumption?
3. If one is obligated to work for a collective scheme to reduce use of a commons, what does this actually mean? How much effort toward a collective scheme is one obligated to give?
4. Are there circumstances in which a collective scheme is so flawed and counter-productive that one's obligation to uphold it is cancelled, and if so, what should one do in such a case?

1. The best way to answer this question is to note the characteristics that produce a T of C. It requires first a resource that is shared by many and threatened by overuse without any effective collective scheme to regulate use to the sustainable level. These features produce the incentive structure that makes unilateral action so quixotic, namely that individuals bear the cost of reduction, but the benefits are available to everyone, and so are nearly certain to benefit other users rather than the commons. Another frequent characteristic of a T of C is that communication among users is difficult, most often because there are many of them.

A situation is like a T of C to the extent that it shares these characteristics. If users are few, then unilateral reductions have a greater chance of affecting the choices of others. First, they are more likely to be noticed. Second, they are more likely to be understood. Finally, in a small community, personal ties and informal pressures are more likely to affect behavior.

But even in small communities, commons problems might well lead to fracture of the community rather than spontaneous solutions unless communication is enriched beyond the feeble signals sent by unilateral reductions. Unilateral reductions may be more important in such a community as a demonstration of one's commitment to the cause of protecting the commons (see below for more on this), but even in such circumstances richer communication is desirable and probably necessary.

When users share a common resource and the benefits of one person's reduction are available for use by others, I cannot see why anyone would ever have an obligation to make a unilateral reduction. Even if the resource is used by only two persons, a unilateral reduction seems obligatory only when the two have agreed to reduce use jointly. Prior to that it might be an option as part of the plan to form a collective scheme, but it is difficult to see it as an obligation, for the reasons I have given earlier.

2. In deciding whether a scheme to protect the commons is worthy of support, a conscientious person should probably err on the side of support. Assuming, as I do, that one has an obligation to try to prevent a T of C, it follows that one should be willing to take some risks of failure in the effort.

Beyond that, the distinction between formal and informal schemes is probably of some importance. A formal scheme—one officially adopted by the users or their representatives—would normally have a greater claim on allegiance than an informal scheme. For example, one's obligation not to tamper with your car's catalytic converter

(which is part of a formal scheme) is greater than your obligation to join a boycott of Exxon products (an informal scheme).

Finally, one's estimates of the likelihood of success of a scheme must play into a decision about supporting it. Such estimates must, of course, be made conscientiously. One must make every effort to avoid self-deception about one's motives. While I have argued that no one has an obligation to make pointless sacrifices, we certainly do have an obligation to make reasonable sacrifices as a contribution to the common good.

Estimates of the viability of a scheme have as their basis the characteristics that any commons scheme requires for success. A successful scheme must change the incentives that users face so that reduced use is a reasonable option for them. Success depends on the kinds of incentives the scheme provides, as well as alternative incentives for evading the scheme. When the scheme involves rules of use, monitoring and enforcement provisions are vital in creating a balance that favors abiding by the scheme.

"Incentives" is a broad term. Maintaining one's moral and social standing is, of course, one kind of incentive. The feeling of pressure to contribute to a scheme might itself be a gauge of the entrenchment of the scheme, and the informal monitoring and sanctions that a community can provide may be very effective, especially in small groups.

3. How much effort is one obligated to put into the work for a scheme to protect the commons? I began to answer this question above, saying that we must be ruled by our conscience, and that our duty is what Kant calls a "wide" or "imperfect." We are obligated to make protection of the commons an end of our conduct, but it is not possible to specify exactly how we should pursue that end or what level of effort we should devote to this end among the many that we necessarily have. Individuals can and must make different choices depending on their circumstances, talents, knowledge, and so on. What one is obligated to do is to be conscientious in making one's choices. Beyond that, it is impossible to specify.

4. I don't see the need to renounce and opt out of failed collective schemes to protect the commons as a particularly pressing issue for individuals. Our problem seems to be more the absence of such schemes. It seems clear, however, that were one to feel that a scheme has so failed that it would be better to scrap it, the proper response would be open renunciation of one's obligations rather than simply cheating on the scheme. It might be reasonable to conclude that one's obligation to follow the scheme is cancelled when it is so flawed that one's sacrifice is rendered pointless. But this would not cancel one's obligation to seek effective means of protecting the commons, and from this follows an obligation to publicly declare the failure of the old scheme and the need to organize a new one.

#### *Reasons for unilateral reductions*

Despite my argument that we have no moral obligation to make unilateral reductions in use of the commons, I recognize a number of reasons for doing just that. Such actions are, in my opinion, wrong if they distract us from more important efforts to promote a collective scheme that will actually prevent a T of C. Otherwise they are personal options, and at least sometimes supererogatory, i.e. good while not obligatory.

The reasons for making unilateral reductions seem to me to fall into three categories: psychological reasons, political reasons, and pioneering.

### *Psychological reasons*

Reducing one's burden on the commons can make one feel good, and so long as it does no harm, this is a sufficient reason for doing it. Some of the reasons are, I think, better than others, but if no harm is done, even personal indulgence is unobjectionable. While organizing efforts can seem impersonal, slow moving, and uncertain, when one reduces one's own burden on the natural environment, one knows that one has done something concrete and immediate. Such efforts are sometimes easier than political efforts. We don't have to cooperate with other people, and we can easily set the limits on how much effort we make. Our personal sacrifices can also help us feel morally superior. This, need I say, is a dangerous indulgence, but one must acknowledge its attractions.

Unlike organizing efforts, we can see immediate and definite results from unilateral reductions. If I am right, these frequently fail to have the practical effects that we intend, but they can be psychologically satisfying nonetheless, and sometimes they can succeed. If you plant a tree, literally or figuratively, this won't normally be "eaten" by others the way saving market commodities can be. Others don't litter more because you litter less. And we saw above how even actions involving market purchases can have good effects when they involve supporting new, superior products. Even reductions in buying products whose prices must remain stable to justify making them may have practical consequences. So the same actions that provide the psychological satisfaction of doing something concrete can also sometimes have practical consequences.

Another reason to make unilateral reductions is to demonstrate to oneself that one is actually committed to the cause one espouses, that one lives by one's principles, that one not only "talks the talk," but also "walks the walk." It would be naïve to suppose that one will always live up to one's principles when doing so is difficult, so there's a point to proving that one means it. Further, one is demonstrating to oneself willingness to support a collective agreement requiring reductions in use of the commons even if it requires personal sacrifice.

### *Political reasons*

By "political reasons" I mean those touching on our effectiveness in contributing to collective solutions to commons problems. Foremost among these may be avoiding charges of hypocrisy. If one advocates steps to reduce the burden on the environmental commons that one has not oneself taken, this is often seen as hypocritical. The main thrust of my argument in this paper is to say that there is no hypocrisy in doing that. There is a world of difference between saying "I'll pull my weight if you'll pull yours" and saying "I'll beggar myself to no purpose." Nevertheless, my position is not widely shared, and many will see as hypocritical any failure to do unilaterally what you call on all to do together.

If you call for changes or sacrifices you have not demonstrated your willingness to make, others may see you as a hypocrite, or at best wonder if you'll really do your share when the time comes. So as a practical fact, political effectiveness may require you to make visible sacrifices of the kind you are calling for. These can demonstrate to others that you are committed to the cause for which you advocate.

More positively, such sacrifices may be inspirational or educational for others. I think we sometimes overestimate this effect. When I ride my bicycle to work, few who see me have any way of knowing my reasons. So the idea that they will be inspired to reduce their environmental impact by copying me seems far fetched. And, honestly, I don't seem to have much inspirational effect even on those close enough to me to know why I do it. But celebrities, and political leaders, and people with more charisma than I command may inspire others, or perhaps just inform them about some needed action they were unaware of.

### *Pioneering*

The final important reason one might want to lessen one's burden on the commons unilaterally is to "pioneer," by which I mean experiment with alternatives to our destructive practices. Pioneering accomplishes several things. First, as I argued above, support for alternative techniques and technologies usually does not have the possibility for the less scrupulous to undo one's good in the way simple reductions of use of the commons does. While the commodities one saves by using alternative technologies may just be used by others, the demand one expresses for alternatives to business as usual can't disappear in this way. At a minimum the demand helps such alternatives to remain viable or grow until collective schemes change incentives and push more people to use them. And sometimes circumstances alone, without the benefit of collective schemes, will drive a change to these new technologies. If oil prices rise enough, fuel efficient cars, and perhaps even alternatives to the internal combustion engine, will seem more attractive even without fuel efficiency standards or carbon taxes.

Pioneering also tests alternatives. We need to know which new techniques, technologies, and patterns of life are genuine improvements and real possibilities, and only experience can show that. People who built sunrooms with sloping glass to lessen their fossil fuel use helped to show that vertical glass is generally superior for passive solar buildings, as did those who tried vertical glass and found that it worked. If no one bought hybrids, we wouldn't know how well they work, nor would we be exploring what needs improvement. Organic farmers are everyday experimenting with environmentally superior methods for growing food, and barring catastrophe, someday the whole world will be the beneficiaries of their discoveries.

So pioneering creates demand and tests alternatives. It may also set an example for others. Sometimes I think people believe that our example will convert others to new values. And maybe this does happen. But the beauty of pioneering is that it doesn't have the burden of convincing others by example to change their ways. It can appeal to those who are already looking for an environmentally preferable way to live. When you pioneer, you accumulate genuine knowledge, and you can not only hope to inspire others by your example, you can help others find the best ways to make the changes they long to.

### *Final Words*

I think it may be useful to mention some examples that illustrate the conclusions I have argued for, if only to try to head off misinterpretations. I will do this by referring to some contemporary examples.

After Al Gore's film An Inconvenient Truth was widely noticed, certain blogs declared that Gore's own energy use at his Tennessee home was several times the national average, and condemned him as a hypocrite. I realize, of course, that these charges were probably motivated more by ideology than by honest moral outrage, but they are nevertheless worth considering because they may indeed have swayed some people to think of Gore as a fake. It seems likely that at least some of Gore's energy use is related to his work in popularizing environmental problems and seeking solutions to them. But even if it is not, my argument has been that it is a mistake to think of his actions as hypocritical. If and when we have schemes to deal with our commons problems, free riding is dishonest and immoral. Until then, unilateral reductions are personal options, not free riding or immoral in any other way. In the absence of collective schemes, an individual is obligated to stand willing to support plausible ones, and to a degree appropriate to her individual circumstances, to seek and promote them herself. By this standard, Gore seems to me to be doing exactly the right thing, and his personal use of energy is morally irrelevant. Whatever he may need to do politically to appease those who reject my reasoning, in my opinion his failures are political, not moral.

Exxon-Mobil corporation is infamous for its disinformation campaign concerning global warming. It is possible, of course, for a moral agent to act in good faith because of genuine ignorance or confusion, in which case the person's failure is epistemic rather than moral. Moral failure is possible even in such a case, of course, for the person may have been self-indulgent or self-deceptive, failing to exercise conscientious effort and judgment to discern the truth. But in the case of Exxon, I doubt we need to look beyond simple dishonesty in the service of short term self-interest. In any case, the point is that such behavior stands roundly condemned by my theory. I do not think Exxon has an obligation to make unilateral reductions in the absence of a collective agreement. But I do think it has obligations to support and even work for effective agreements to protect the commons. Its actions have been immoral in the most straightforward and familiar ways, seeking to benefit itself at the expense of others by dishonesty and bad faith.

Finally, nothing I have written excuses the position of the Bush Administration on climate change (or other environmental problems). First, the position of individual persons and the position of the nations of the world in relation to global commons are quite different. The 6.5 billion people of the world cannot effectively communicate sufficiently to organize a collective agreement, and the arguments I have given above do apply to them as individuals. The 192 nations belonging to the U.N., by contrast, are few enough in number, and have sufficiently developed means of communication, that they can in no way be excused for standing by idly while the commons is destroyed, especially the United States. While no nation has an obligation to damage itself by unilateral reductions that others refuse to make, this is certainly not the situation that the U.S. has faced since the 1992 Framework Convention on Climate Change. Given its position in the world, the argument for the U.S. setting an example by unilateral reductions would have been far more powerful than it is for any ordinary individual. But in fact the U.S. has actively opposed efforts to seek a collective solution, and nothing I have said provides any excuse for that conduct.

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<sup>1</sup>"Ethical Obligations in a Tragedy of the Commons." Environmental Values, vol. 12, no. 3, August 2003.

<sup>2</sup>Garrett Hardin, "The Tragedy of the Commons," Science, Vol. 162, No. 3858, 1243-48.

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<sup>3</sup>It is, of course, logically possible that an individual user could withdraw from the commons at a rate that is unsustainable. But such a case would be unusual, and is certainly not true of the commons that figure prominently in modern environmental problems. So to keep my argument simple, I will ignore these limit cases. I believe anyway that they are covered already by our ordinary understanding of prudence and the obligations we owe to others. That is, someone whose use of the commons is individually unsustainable is imprudently endangering himself and immorally depriving others by overuse of a shared resource. Thus such cases differ from the more typical tragedy of the commons I discuss in this paper.

<sup>4</sup> I am simplifying here again, since whether the “harvest” from a commons is morally neutral or not can be controversial. Is the only objection to whaling or hunting that the “harvest” may be unsustainable, or is the killing of animals objectionable in itself? If the former is true, then the problem arises only when the volume of the harvest is unsustainable and a T of C results. If the latter is true, then each killing is morally objectionable in itself.

My arguments apply to those situations where you think withdrawing from the commons is ethically acceptable, if sustainable, and ethically problematic if not sustainable. I know of no ethical theory that would condemn all use of every commons. In any case, no such theory is widely held. So it seems safe to make the assumption I do, while at the same time recognizing that people may disagree about whether a particular problem is only a commons problem as here described.

<sup>5</sup> Another way of looking at this is that I am specifying that my argument applies only to those situations in which there is no widespread agreement that individual use of the commons at current levels is wrong. We are working toward such an understanding in regard to many environmental commons, but I think it would overstate the case to say that we have achieved it.

<sup>6</sup> One might deny my claim that the individual’s use of the commons is not harmful. That is, one might insist that, while considered alone the individual’s use is sustainable, it is inappropriate to consider it alone. For in the context of collective overuse, it is unsustainable and harmful to the commons. But if one takes this line, then the logical conclusion would be that an individual should stop all use of the commons, since all of it is harmful. For pretty certainly her individual use of the commons is less than the amount by which the commons is overtaxed. So it isn’t just the portion of her use above the average sustainable level that is harmful, it is all of her use.

If one is to arrive at the conclusion that she is only obligated to reduce to the average sustainable level—the level at which everyone could use the commons—then it seems one will have to appeal to some notion of what it is fair for her to do. But it hardly seems fair to ask her to reduce her use, at great cost to herself, when this cannot reasonably be expected to contribute to saving the commons. For this reason, it is difficult to see how to justify the conclusion in dispute, namely that one is obligated to make unilateral reductions to the sustainable level.

<sup>7</sup> Garrett Hardin, “The Tragedy...,” 1258. I think that Hardin’s terminology is unnecessarily pejorative, since while some people may need coercion, others are willing to sacrifice for the common good. But apparently we both initially overlooked alternatives to collective schemes, whatever we call them, for solving commons problems.

<sup>8</sup> The use of rules to protect the commons has been extensively explored in the literature on common property. This approach typically requires rules restricting use of the commons, a mechanism to monitor use and enforce the rules, sanctions for violation of rules, and a mechanism for changing rules as needed. See, for example, Elinor Ostrom, Governing the commons : the evolution of institutions for collective action. Cambridge ; New York : Cambridge University Press, 1990.

<sup>9</sup> The switch to automobiles by spontaneous, i.e. unilateral, adoption occurred because each person expected to benefit by making the switch. Solution of a commons problem was incidental. By contrast, unilateral reductions in use to protect a commons ordinarily impose a significant cost on the user. For the reasons I give in this paper, there can be no reasonable expectation that unilateral reductions will solve the problem in the way unilateral preferences for a superior technology occasionally can.