

## Energy Policy and the Further Future: The Social Discount Rate

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What we do now may impose costs on future generations. If we deplete resources, we may lower the standard of living in some future period. If we threaten the environment, we may in the long run lower the quality of life. Or we may impose on our successors certain grave harms, such as accidental deaths from escaped radiation. If we can predict such effects, we seem to have at least some moral reason to act differently. How strong are such reasons? How much weight ought we to give to the more remote effects of our acts?

It is now widely believed that, when we are choosing between social policies, we are justified in being less concerned about their more remote effects. All future costs and benefits may be “discounted” at some rate of  $n$  percent per year. Unless  $n$  is very small, the further future will be heavily discounted. Thus, at a discount rate of 10 percent, effects on people’s welfare next year count for more than ten times as much as effects in twenty years. At the lower rate of 5 percent, effects next year count for more than a thousand times as much as effects in 200 years.

Such a “social discount rate” seems to me indefensible. The moral importance of future events does *not* decline at  $n$  percent per year. A mere difference in timing is in itself morally neutral. Remoteness in time roughly corresponds with certain other facts, which are morally significant. But since the correlation is so rough, the discount rate should be abandoned.

Why was it adopted? I am aware of six arguments.

## 1. The Argument from Democracy

Many people care less about the further future. Some writers claim that, if this is true of most living Americans, the U.S. government ought to employ a social discount rate. If its electorate does care less about the further future, a democratic government ought to do so. Failure to do so would be paternalistic or authoritarian. As one writer says, the government's decisions should "reflect only the preferences of present individuals."

This argument need not be discussed here. We should distinguish two questions: (a) As a community, may we use a social discount rate? Are we morally justified in being less concerned about the more remote effects of our social policies? (b) If most of our community answer "yes" to question (a), ought our government to override this majority view? The Argument from Democracy applies only to question (b). To question (a), which is our concern, it is irrelevant.

The point might be put like this. A democrat believes in certain constitutional arrangements. These provide his answer to question (b). How could his commitment to democracy give him an answer to question (a)? Only if he assumes that what the majority wants, or believes to be right, must be right. But few democrats do assume this. Suppose that some majority wants to wage an aggressive war, caring nothing about the slaughter of innocent aliens. This would not show that they are right not to care. In the same way, even if most of us do care less about the more remote effects of our social policies, and believe such lesser concern to be morally justified, this cannot show that it is justified. Whatever most of us want or believe, this moral question remains open.

## 2. The Argument from Probability

It is often claimed that we should discount more remote effects because they are less likely to occur. This involves a confusion. There are two questions: (a) When a prediction applies to the further future, is it less likely to be correct? (b) If some prediction is correct, may we give it less weight because it applies to the further future?

The answer to (a) is often "yes." But this provides no argument for answering "yes" to (b). Consider predicted deaths from escaped radiation. According to a discount rate of 5 percent, one death next year counts for more than a billion deaths in 400 years. Compared with the single death, the billion deaths are less important to prevent. The Argument from Probability would at most lead to a different conclusion. We know that, if radiation were to escape next year, we would have no adequate defense. We may believe that, over the next four centuries, some kind of countermeasure will be invented, or some medical remedy. We may thus believe that, if such radiation were to escape in 400 years, it would then be much less

likely to cause deaths. If we are very optimistic, we may even think this a billion times less likely. This would be a different reason for discounting possible deaths in 400 years. We would not be claiming that, if such deaths do occur, they matter morally a billion times less. That claim is indefensible. Rather we would be claiming that these more remote deaths are a billion times less likely to occur. This would be why, on our view, we need hardly be concerned about the escape of radiation in 400 years. If our claim is plausible, this conclusion would be justified. Deaths that do not occur, whether now or in 400 years, do not matter.

This example illustrates a general point. We ought to discount those predictions that are more likely to be false. Call this a “probabilistic discount rate.” Predictions about the further future are more likely to be false. So the two kinds of discount rate, temporal and probabilistic, roughly correlate. But they are quite different. It is therefore a mistake to discount for time *rather than* probability. One objection is that this misstates our moral view. It makes us claim not that more remote bad consequences are less likely, but that they are less important. This is not our real view. A greater objection is that the two discount rates do not always coincide. Predictions about the further future are not less likely to be true at some rate of  $n$  percent per year. When applied to the further future, many predictions are indeed more likely to be true. If we discount for time rather than probability, we may thus be led to what, even on our own assumptions, are the wrong conclusions.

### 3. The Argument from Opportunity Costs

It is sometimes better to receive a benefit earlier, since this benefit can then be used to produce further benefits. If an investment yields a return next year, this will be worth more than the same return after ten years, if the earlier return can be reinvested profitably over these ten years. When we have added in the extra returns from this reinvestment, the total returns over time will be greater. A similar argument covers certain kinds of cost. The delaying of some benefits thus involves “opportunity costs,” and vice versa.

This is sometimes thought to justify a social discount rate. But the justification fails, and for the same two reasons. Certain opportunity costs do increase over time. But if we discount for time, rather than simply adding in these extra costs, we will misrepresent our moral reasoning. More important, we can be led astray. Consider those benefits that are not reinvested, but consumed. When such benefits are received later, this may involve no opportunity costs. Here is an example. If we build a proposed airport, we will destroy some stretch of beautiful countryside. We might try to estimate the benefits that we and our successors would then lose. If we do not build the airport, such benefits would be enjoyed in each future year. On

any discount rate, the benefits in later years count for much less than the benefits next year. How could an appeal to opportunity costs justify this? The benefits received next year—our enjoyment of this natural beauty—cannot be profitably reinvested.

Nor can the argument apply to those costs that are merely “consumed.” Thus it cannot show that a genetic deformity next year ought to count for ten times as much as a deformity in twenty years. The most that could be claimed is this. Suppose we know that, if we adopt a certain policy, there will be some risk of causing such deformities. We might decide that, for each child so affected, the large sum of  $k$  dollars would provide adequate compensation. If we were going to provide such compensation, the present cost of ensuring this would be much greater for a deformity caused next year. We would now have to set aside almost the full  $k$  dollars. A much smaller sum, if invested profitably now, would yield in twenty years what would then be equivalent to  $k$  dollars. This provides one reason for being less concerned now about the deformities we might cause in the further future. But the reason is not that such deformities matter less. The reason is that it would now cost us less to ensure that, when such deformities occur, we would be able to provide compensation. This is a crucial difference. Suppose we know that we will not in fact provide compensation. This might be so, for instance, if we would not be able to identify those particular genetic deformities that our policy had caused. This removes our reason for being less concerned now about deformities in later years. If we will not pay compensation whenever such deformities occur, it becomes irrelevant that, in the case of later deformities, it *would* be cheaper to ensure now that we *could* pay compensation. But if we have expressed this point by adopting a social discount rate, we may fail to notice that the point has become irrelevant. We may be led to assume that, even when there is no compensation, deformities in twenty years matter only a tenth as much as deformities next year.

#### 4. The Argument That Our Successors Will Be Better Off

If we assume that our successors will be better off than we are, there are two plausible arguments for discounting the costs and benefits that we leave them. If we measure the costs and benefits in monetary terms, we can appeal to diminishing marginal utility. The same increase in wealth generally brings a smaller benefit to those who are better off. We may also appeal to a distributive principle. An equally great benefit given to those who are better off may be claimed to be morally less important.

These two arguments do not justify a social discount rate. The ground for discounting these future benefits is not that they lie further in the future, but that they will go to people who are better

off. Here, as elsewhere, we should say what we mean. And the correlation is again imperfect. Some of our successors may not be better off than we are. If they are not, the arguments just given fail to apply.

## 5. The Argument from Excessive Sacrifice

A typical statement runs: "We clearly need a discount rate . . . for theoretical reasons. Otherwise any small increase in benefits that extends indefinitely in time . . . could demand any amount of sacrifice in the present . . . because in time the benefits outweigh the costs."

The same objections apply. If this is why we adopt a social discount rate, we shall be misstating what we believe. Our belief is not that the importance of future benefits steadily declines. It is rather that no generation can be morally required to make more than certain kinds of sacrifice for the sake of future generations. If this is what we believe, this is what should influence our decisions. If instead we take the belief to justify a discount rate, we can be led quite unnecessarily to implausible conclusions. Suppose that, at the same cost to ourselves now, we could prevent either a minor catastrophe in the nearer future or a major catastrophe in the further future. Since preventing the major catastrophe would involve no extra cost, the Argument from Excessive Sacrifice fails to apply. But if we take that argument to justify a discount rate, we can be led to conclude that the major catastrophe is less worth preventing.

## 6. The Argument from Special Relations

Some utilitarians claim that each person should give equal weight to the interests of everyone. This is not what most of us believe. According to commonsense morality, we ought to give some weight to the interests of strangers. But there are certain people to whom we either may or should give some priority. Thus we are morally permitted to give some priority to our own interests. As the last argument claimed, we have no duty to help others when this would require from us too great a sacrifice. And there are certain people to whose interests we ought to give some kinds of priority. These are the people to whom we stand in certain special relations. Thus each person ought to give some kinds of priority to the interests of his children, parents, pupils, patients, those whom he represents, or his fellow citizens.

Such a view naturally applies to the effects of our acts on future generations. Our immediate successors will be our own children. According to common sense, we ought to give to their welfare a special weight. We may think the same, though to a reduced degree, about our obligations to our children's children. Similar claims seem

plausible at the community level. We believe that the U.S. government ought to be especially concerned about the interests of its own citizens. It would be natural to claim that it ought to be specially concerned about the future children of its citizens, and, to a lesser degree, about their grandchildren.

Such claims might support a new kind of discount rate. We would be discounting here, not for time itself, but for degrees of kinship. But at least these two relations cannot radically diverge. Our grandchildren cannot all be born before all of our children. Since the correlation is here more secure, we might be tempted to employ a standard discount rate.

I believe that, here too, this would be unjustified. For one thing, such a rate has no lower limit. More remote effects always count for less. But a discount rate with respect to kinship should, I believe, level off. When we are comparing the effects of two social policies, perhaps effects on our children ought to concern us more than effects on our grandchildren. But should effects on the fifth generation concern us more than effects on the sixth—or effects on the fifteenth more than effects on the sixteenth? I suggest that, below some degree of kinship, such a discount rate should cease to increase.

Nor should the rate apply to all kinds of effect. Consider this comparison. Perhaps the U.S. government ought in general to give priority to the welfare of its own citizens. But this does not apply to the infliction of grave harms. Suppose this government decides to resume atmospheric nuclear tests. If it predicts that the resulting fall-out would cause several deaths, should it discount the deaths of aliens? Should it therefore move the tests to the Indian Ocean? It seems plausible to claim that, in such a case, the special relations make no moral difference. We may take the same view about the harms that we impose on our remote successors.

I have discussed six arguments for the social discount rate. None succeeds. The most that they could justify is the use of such a rate as a crude rule of thumb. But this rule would often go astray. It may often be morally permissible to be less concerned about the more remote effects of our social policies. But this would never be because these effects are more remote. Rather it would be because they are less likely to occur, or will be effects on people who are better off than we are, or because it is cheaper now to ensure compensation—or it would be for one of the other reasons I have given. All these different reasons need to be judged separately, on their merits. To bundle them together in a social discount rate is to blind our moral sensibilities.

Remoteness in time roughly correlates with a whole range of morally significant facts. But so does remoteness in space. Those to whom we have the greatest obligations, our own family, often live with us in the same building. We often live near those to whom we have other special obligations. Most of our fellow citizens live closer

to us than most aliens. But no one suggests that, because there are such correlations, we should adopt a spatial discount rate. No one thinks that we may care less about the long-range effects of our acts, at a rate of  $n$  percent per yard. The temporal discount rate is, I believe, as little justified.