

Why Individuals Provide Public Goods

DAVID D. HADDOCK

A fanatic is one who can't change his mind and won't change the subject.

WINSTON CHURCHILL

Two people are rivals if each wants to wear the same pair of shoes, so economists call items such as shoes rivalrous goods. In contrast, an economist calls something a public good if consumption is nonrivalrous and non-excludable. In other words, one person's consumption of a public good is completely consistent with its consumption by another person, and neither can interfere with the choices of the other. You can either look at a beautiful vista or not as you prefer. Typically, however, you will neither know nor care whether I am looking, but you could not prevent me from enjoying the vista even if you wanted to. The view is a public good. Improving a view confers a positive externality on any bystander who appreciates the change but played no role in obtaining it.

Smog is a public bad because the suffering that it inflicts on you is unrelated to whether I am suffering. An increase in smog inflicts a negative externality on sufferers who have no influence over an actor's smog-producing decision. Negative externalities also affect rivalrous goods, as when a cigarette thrown from a passing automobile sets a wheat field afire, and that sort is much discussed as a general category. Economists rarely discuss public bads per se.

Public bads such as smog obviously exist and often are important, but a public bad implies symmetrical public goods. Since smog is a public bad, anything that mitigates smog is a public good; the benefit that you experience from a reduction of smog is unrelated to any benefit that I receive. Therefore, one can ask how to arrange for the proper amount of smog—the public bad—or how to arrange for the proper amount of mitigation—the public good; they are the same question. Following from the recognition that each public bad implies public goods, for each public good there are obverse public bads. Building a fence that hides a beautiful vista creates a public bad, for example. Failing to appreciate the symmetry between public goods and public bads, inexperienced observers imagine that the two require separate theories. Such thinking is erroneous, and the confusion encourages incoherent policy.

A straight line provides a useful analogue of public goods and public bads. A public good can be visualized as a movement in a positive direction from the status quo and a public bad as a movement in a negative direction. Because a movement in either direction entails costs as well as benefits, the optimal amount of a public good is rarely the most that is feasible; nor, speaking in the converse, would the optimal amount of a public bad ordinarily be zero. The ideal would be to create a public good whenever the benefit of doing so exceeds the cost, and to forego that movement from the status quo otherwise. More subtly, the ideal would be to create a public bad when more cost can be avoided than the benefit that is lost by that movement from the status quo. The last statement will seem an outrageous oxymoron until one recalls that a public bad does not translate as bad for everyone, merely as a nonrivalrous bad—bad for at least one person whose suffering will be unaltered if others suffer as well.

Those who appreciate beautiful vistas or abhor smog face a potentially crippling obstacle. Optimizing the number of beautiful vistas or amount of smog often requires widespread participation to finance a movement away from the status quo. If nonpayers cannot be excluded from the benefits, however, many potential beneficiaries will refuse to participate—the dilemma of free riding. In consequence, a desirable public good may not materialize, or the amount may be inadequate. That is to say, we may fail to move from an undesirable status quo, or fail to move far enough.

Scrutiny of the definition of public goods shows that the theory concerns consumption, not ownership or production. It is based on the meaning of *public* that is incorporated in phrases such as the general public—the pub-

lic as a collectivity of individuals. Such a meaning is distinct from *public* as sometimes used to indicate government ownership, as in a public stadium. The owner of a stadium that is filled to capacity may be a government, but the stadium is no more a public good than are shoes; the seat you occupy is unavailable to me, and thus is rivalrous. Additional teams cannot be admitted to the playing field until the present contest concludes. Many other things that governments own or produce are rivalrous rather than public goods.

Many public goods—nonrivalrous in consumption—existed before governments formed to produce or own anything, and they exist today in the farthest reaches of the Amazon and Congo basins, where for practical purposes no formal government functions. There are vistas to see and birdcalls to hear all along the Amazon, as well as widespread benefits or detriments when one person burns a grove of trees to increase a ground-dwelling prey animal's food supply. American Indian nomads volunteered for substantial work and danger to participate in war parties that faced threats against the entire band, though individually they often had the option of simply leaving the group instead. Among anarchistic medieval Icelanders, elderly Njál's life was lost along with his wife's because he voluntarily (though unsuccessfully) tried to mediate a dispute that until then had scarcely involved him at all (*Njál's Saga* 2001).

Nonetheless, careless people often mistake the public in public goods as though the word were being used in a public stadium rather than in the general public. One need not resort to the scribbling of peripheral scholars to discover examples of that non sequitur, as shown in a book recently published by a group of senior Harvard economists and law professors:

Goods (or services) that are nonexcludable and nonrival are called *public goods* by economists. . . . It is apparent that public goods will not be adequately supplied by the private sector. The reason is plain: because people can't be excluded from using public goods, they can't be charged money for using them, so a private supplier can't make money from providing them. . . . Because public goods are generally not adequately supplied by the private sector, they have to be supplied by the public sector. (Jackson et al. 2003, 361–363)

The quotation begins with a definition but ends with a fallacy. Every day Americans listen to radio and pass beautiful gardens on their way to the office, then they admire attractive colleagues after arriving. Radio broadcasts, gardens, and personal appearance provide collectively consumed but privately produced goods that are nonrivalrous in consumption and typically

nonexcludable, hence are public goods. For many public goods it is not even obvious what "zero" would mean in terms of an amount; nearly anyone could look either worse or better, for instance, so some level of public good (or bad) issues automatically from a person's personal appearance. That explains why the status quo, not zero, was the starting point above in the straight-line representation of public goods and public bads.

Certainly, a danger that "public goods will not be adequately supplied by the private sector" is an issue worth pondering, but an ill-developed assertion that "they have to be supplied by the public sector" is unhelpful; there are several additional sources.

A few observers have been less fanatical about the government/public-goods nexus; incompatible evidence has changed their minds. That is hardly to say that they believe that private provision will inevitably result in the ideal amount of every public good, merely that a great many public goods are provided by private groups.

That private associations sometimes provide public goods has followed three distinct but mutually compatible paths. First, individual consumers sometimes volunteer contributions over and above the minimum required. Ticket prices, for instance, may be inadequate to keep a museum operating, and philanthropic contributions provide funds to make up the difference (Spiegel 1995).

Second, Olson (1965) argued that the incentive to free ride might be alleviated when an organization also provides other benefits that are excludable and supplied only to those who help provide the public good. A simple example illustrates: if only those who participate in collecting roadside trash are invited to a party at the completion of the project, many of the beneficiaries may prefer to contribute to the effort rather than miss the celebration.

The third path employs evolutionary models (North 1990; Ostrom 2000; Rubin 2003) that focus on social norms, cultural beliefs, and ideologies. The theory of bounded rationality holds that people are not entirely calculative. In other words, individuals do not and cannot carefully think through everything they do. Suppose that through some accident of fate a community begins to provide public goods for itself, while the free-rider problem prevents other communities from doing the same. The cooperative community would be more likely to have members survive hard times. Before they were old enough to appreciate free-rider opportunities, children in that more successful community would learn a mode of behavior that facilitated voluntary contribution to the provision of public goods. Though potentially

costly to impose, overt or subtle penalties that the rest of the community threatened could more than deplete any advantage to a free rider. Free riding would be rare if that threat were widely understood, and the costly sanction would seldom be needed. The community would have an advantage over alternative communities, and public goods providers within it would do better than free riders.

This chapter admits that strict reliance on voluntary participation may lead to less than ideal provision of a subset of public goods, though government involvement sometimes exacerbates rather than mitigates the shortfall. Public goods may issue from acts of pure charity. An organization may successfully tie participation in the provision of a public good to an excludable benefit. A community may evolve norms, cultural beliefs, and ideology.

The chapter will focus elsewhere, however. First, a redefinition of property rights may facilitate the provision of public goods that appear superficially to be obtainable only with government intervention. Second, utilizing an unfortunately neglected idea of Buchanan and Stubblebine (1962), the chapter will show that a public good may be provided by an individual who acts unilaterally solely from self-interest. The reason is that people are far from identical, a fact that is both obvious and often neglected in scholarly work. Even if everyone else could overcome their free-rider problem and obtain the proper amount of a public good for their purposes, anyone with an abnormally strong preference for the good would remain dissatisfied. Such people cannot satisfy their supernormal preferences for the public good without privately arranging at least for the excess. But there is more: if the free-rider problem foils contribution from the rest of the community, a person with an abnormal preference may shoulder the entire burden. Once the public good is created, however, everyone can enjoy it, provider and free rider alike.

Through careful theoretical and institutional investigation, a government/public-goods nexus may plausibly be urged in certain instances, but that nexus can never be derived as a matter of pure theory. Sound theory is indispensable, but a proper understanding of public goods requires careful scrutiny of the nature and environment of the particular one at issue.

Sand Dunes

Contemplate the following public bad and the appropriate mitigation strategies. The world's largest concentration of freshwater sand dunes are scat-

tered around Lake Michigan's perimeter. Like the Great Lakes themselves, the dunes are an ancient legacy of the most recent ice age, which began retreating from the region some twelve thousand years ago. The longest continuous swath of duneland threads through government and private property from the lake's southern extremity well up its eastern shore into Michigan.

About a quarter of a century ago, my friends purchased a vacation property there, the dunes shielding their cottage from the lakeshore. My first visit revealed an unbroken vista to the west. The highest dunes seemed to rise a hundred feet above the lake. Tall, coarse dune grass covered open sand, but in many places copses of trees cascaded down the slopes. Several narrow foot trails permitted traverse across the dunes and hikes along the crest.

Today, little dune grass grows there. Wind and gravity readily move the sand. A nearby cottage is situated somewhat closer to the dunes. Attempting to keep the sand at bay, the owners of the cottage have erected a concrete wall on the duneward side. The dunes farther south are little changed, a reference showing that their neighboring dunes have been reduced by perhaps ten or fifteen feet, or roughly a half-foot per year.

At some point after my first visit, that sector of lakeshore was discovered by dune buggy enthusiasts. First a few, then more, and by today quite a number of people have decided that speeding up and down, and back and forth across that stretch of sand is great fun. Unfortunately, buggy wheels quickly destroyed the dune grass that had been holding the sand in place over the millennia. The buggies often create their own traffic jams up top. In consequence, drivers spread farther afield. The damage is creeping northward.

Occasionally, people blaze new routes through the woods, and gullies eventually supplant their trails. If their roots become exposed, adjacent trees fall in. On cool evenings people break up these dried tree carcasses to feed small campfires. Some trees that do not topple become engulfed and smothered by sand. Today, it is necessary to hike some distance from the cottage to find living trees on the dunes.

An incessant beelike drone often infuses my friends' cottage from first light until well past dark—a few buggies have headlights. The passing roar of a poorly muffled engine heralds a new entrant rushing into the fray or an exhausted driver leaving it. Rather than anticipating sojourns at their cottage, today my friends often remain in their Chicago home during holiday weekends.



Figure 12.1. Tree line marks boundary between vegetated private land and degraded public land. Photo by David D. Haddock.

Ultimately, the dunes may become so degraded that the buggy drivers will abandon them for more exciting terrain. Preserving the dunes would appear to be a public good. Does the free-rider problem prevent private preservation?

Categorical Imperatives

I would conjecture that at least one hundred cottages are in my friends' immediate neighborhood, though there must be tens of thousands of similar ones in the four states that surround Lake Michigan. The cottage owners nearest the dunes regard buggy drivers with contempt. Those whose cottages are removed from the noise and dust are less disdainful. By now, however, a number of cottages house buggy drivers. Still others who lack any local landholding bring their vehicles in for day use.

Because of congestion and the readily apparent degradation of the dunes, even some of the buggy owners favor restrictions on dune use. The drivers who own a cottage think that keeping "outsiders" away would be the place to begin, though half-hearted extralegal attempts to do so have

proved unavailing. Those whose buggies lack headlights would ban night-time driving. The old guard would prefer to be rid of the vehicles altogether. How is one to sort out the conflict of interest?

Those who oppose such dune use often answer with a categorical imperative.

[T]hough sand dunes cannot be re-created once they are gone, Lake Michigan's . . . continue to be lost, acre by acre. The dunes are valuable, spectacular, and biologically diverse landforms . . . within the extraordinary Great Lakes ecosystem. . . . [According to] The Lake Michigan Federation's report, *Vanishing Lake Michigan Sand Dunes* . . . Michigan must enact legislation that [would add] 12,000 acres . . . to the Critical Dune Atlas and regulate activities in them as required by the Act, [removing] the loophole . . . that allows expansion into critical dunes from existing . . . operations. (Alliance for the Great Lakes 2004, Chapter 1)

A glaring weakness of the statement is the implication that a political solution is the only solution; Michigan, it says, *must* enact legislation, not that Michigan should consider legislation as one plausible approach to be compared with alternatives. Political solutions characteristically deprive one interest group of a use (without compensation) in order to provide (at a zero price) a different interest group with an incompatible use. The statement makes no attempt to compare the losses to be suffered by the first group with the benefits to be expected by the second.

Other people adhere to a different categorical imperative: a yearning for limited government. The opposing groups can agree that the dispute pits moral necessity against selfish irresponsibility, but they disagree about which side is being irresponsible. By the nature of the confrontation, one side inevitably will feel wounded but nonetheless will be taxed to impose on itself the will of their opponents.

Groups with greater political clout win political battles, and, contrary to the wishes of the Alliance for the Great Lakes, to this moment the winners have been their dune-exploiting opponents. It is of little avail for the Alliance simply to work harder to acquaint people with the degradation; that is general knowledge among those who visit the dunes. The problem is not ignorance or stupidity, but different priorities. I expect that everyone who visits or lives in the area would love to preserve the dunes in their entirety if that were costless. The real issue is different: how much to achieve in the face of a cost that is both positive and increasing with the magnitude of preservation. Obtaining dune preservation—something of value—requires

the sacrifice of something else of value—a place to drive dune buggies, along with potential home sites and industrial sand uses at other locations.

A compromise might lead to results rather than acrimony. Weak desires of one group in an area would give way to strong desires by the other group, while the give-and-take would reverse elsewhere. Neither side would get everything it desired, but because the plots the competitors most intensely covet are unlikely to be identical, each side might get those things it most desired. To facilitate that compromise, the competing interest groups should spend more time searching for a mechanism to gauge the strength of competing individual desires and less time trying to shout down the opposition.¹

Why not just vote? One-person-one-vote democracy does an admirable job of comparing positive with negative desires and thus is quite useful for advancing broadly congruent interests such as national defense, rescue operations following natural disasters, or suppression of epidemics. Democracy is poor at gauging the strength of conflicting desires, however. Anyone familiar with faculty meetings knows that an impatient and ill-informed group with weakly felt predilections can frustrate a slightly smaller though well-informed group with strongly felt preferences.

What is needed is not a way for one group to impose its preferences on another, but a mechanism that permits a group with intense preferences to persuade those with trifling ones to voluntarily step aside. This chapter turns next to an age-old mechanism that in appropriate circumstances facilitates just such an outcome, and then asks whether the circumstances are appropriate vis-à-vis the Lake Michigan dunelands.

Property Rights

Consider still a third categorical imperative: whenever the benefits exceed the costs, recognize and enforce property rights. In the case at hand, property rights were implicated, but the rights as structured proved unenforceable; they were rights in theory more than in reality. My friends own the final cottage along a private road that they share with ten other families. Since cottage owners often entertain visitors and occasionally let out their cottages for a week or two, it was never easy to determine whether a passing driver was entitled to be on that road. At the time my friends purchased their property, however, a sign that read Private Road was adequate, informing the few who had made an erroneous turn.

That changed with the coming of the buggies. There is alternative legal route onto the beach along the side of the dunes facing the lake, but it is quite a distance to the north. Despite the sign, a handful of aggressive buggy drivers began taking a shortcut along the private road and onto the dunes. That being inconsistent with the intended use, the cottagers erected a barrier of dead trees, branches, and the like to make it plain that the road ended thirty feet or so short of the foot of the nearest dune. The buggies detoured around the barrier, in the process driving through some shrubbery and destroying it. Trying to stop the road at its proper terminus imposed substantially more inconvenience on the cottagers than on the drivers.

The county sheriff was asked to issue citations. The sheriff judged that (1) more pressing problems demanded his meager budget; (2) given a legal, albeit less convenient, route, citations could do little to halt the neighborhood's true grievances—noise and dune degradation; and (3) the cottagers were entitled to sue the perpetrators for trespass.

Suits against perpetrators presented a difficult evidentiary matter; trespass along the private road could be completed in less than a minute. Once a buggy entered the duneland, it was on state property. Most of the cottages are vacation residences, and the owners usually are hours away tending to their jobs. Even when present, nobody was willing to spend vacation time lurking by a window merely to identify passing buggy drivers. Moreover, as Ellickson (1991) discovered in Shasta County, California, even when one knows a perpetrator, people who live in small communities rarely sue a neighbor; quite apart from the expense of legal action, too many unrelated matters would be tainted.

The neighborhood eventually dropped the matter. No longer serving its purpose, the Private Road sign was allowed to deteriorate. An informal spur off the state highway system, begun by a few aggressive buggy drivers with knowledge that they were violating private property, is now used at will by people who assume it is a county road. The moral of the story is that encroachment does not halt merely because it violates legal standards. The nearby dunes are already under the auspices of the state of Michigan. If the legislation that the Alliance for the Great Lakes demands is to preserve dunes, someone must be given the ability and incentive to enforce it.

That the dune degradation near my friends' cottage can be gauged against those farther south is informative. Recognized property rights extend to the lake's waterline there, and those dunes are fenced along both sides. Aggressive buggy drivers might wish they could invade that property, but they



Figure 12.2. Buggy tracks show clear violations; unenforced public rights are no rights at all. Photo by David D. Haddock.

could not complete their trespass in a moment. Instead, they would be trespassing for as long as they were enjoying (and damaging) the dunes, substantially facilitating apprehension.

Rightly or wrongly, many people are resentful if a wealthy individual purchases a large area and in that way monopolizes the enjoyment of a landscape, whether or not that means the land is better preserved. The rights to the south, however, are communal rather than private. The dunes there are not owned by a wealthy individual but jointly by a community of cottagers whose individual properties are otherwise similar to those in my friends' neighborhood. That community is entitled by their more complete rights to exclude buggies. The southern dunes remain covered with grass and trees, much as when I first saw them. The dunes adjacent to my friends' cottage, on the other hand, are government property—some would say nobody's property—and no cottager has a legal right to order anyone off.

Though it forms no part of their intention, the communal dune owners to the south provide a public good for anyone who places existence value on Lake Michigan's dunes. Buggy owners in that neighborhood, however, have little incentive to give similar consideration to the dunes near my friends' cottage. The difference does not arise from a change in charitable attitudes as they exit their property, but from a difference in the extent of the property rights.

Transaction Cost

From a property rights perspective, it is insufficient to note that dunes are being degraded. It is impossible to live while altering nothing. The proper question is whether in some other way degradation increases the well-being of society more or less than would preservation. The task is not to rigidify the world or to return to some imagined Nirvana, but to decide which things to preserve and which to use for alternative purposes that are even more valuable. Where people value pristine dunes relative to the value derivable from driving buggies there rather than elsewhere, pristine dunes are the better use. Where people place a low value on maintaining a given stretch of pristine dunes relative to the value of driving buggies, dune buggies are appropriate. Similarly, that the highest and best use of some duneland is as a source of industrial sand is quite plausible. The task is to find a mechanism to weigh the relative values. A market would suffice if transaction cost were low.

Economists use the term *transaction cost* to mean the cost to mutually incompatible users of an asset of discovering each other and negotiating. Incurring a transaction cost does not mean that a transaction will necessarily occur, only that the parties can establish which one values the right more highly and can complete a transaction if that is necessary to transfer the right to the higher valued use. If property rights are well defined, eventually those who value them most will hold them, providing that the transaction cost is modest (Coase 1960; 1988).

The problem in this instance is that the transaction cost is substantial, so it is not obvious which value is greater. Indeed, the proper choice will likely vary according to the density of cottages along the lakeshore. Recognition of high transaction costs inevitably induces calls for government intervention, but such intervention is premature before it has been determined why the transaction cost is so high. Even if government intervention is appropriate, its proper form depends on the source of the high transaction cost.

There are a number of reasons that transaction cost might be substantial. That an insufficiently defined property right can lead to an insuperable transaction cost is often overlooked. In such instances, government intervention to better define rights will likely be preferable to more encompassing government directives.

To see the link between weak property rights and high transaction cost, imagine that the owners of the first rank of cottages place the higher value on the right to the dunes. Assume away the free-rider problem for the moment and imagine that the owners contributed sufficient funds to buy off the buggy drivers who have been using the local dunes. Thus, the parties are not relying on a property right but instead are attempting to sort out incompatible preferences contractually. Contractual rights bind only the contracting parties and thus are weaker than property rights, which are characterized as being good against the world (Merrill and Smith 2001). Those dunes, now devoid of traffic, would become more attractive to a completely different set of buggy drivers who had heretofore been dealing with congestion elsewhere. Indeed, those who had been paid to leave would likely increase congestion elsewhere rather than forego buggy driving, thus augmenting the relative attractiveness of the dunes near my friends' cottage. In consequence, a new set of drivers would arrive. Such strangers to the contract cannot legally be bound by it, so they too must be bought off in a separate transaction. In extreme cases, people who have hardly any interest in dune buggies might acquire one if that enables them to collect a part of the largess.

Reversing the hypothesized relative values will not eliminate the difficulty. If buggy driving is the more highly valued use, and in order to decrease the hazardous congestion the more avid drivers paid the less avid ones to leave, the less congested dunes would again attract strangers to the contract. When nobody holds recognized property rights to duneland, those who place the higher value on the right to use it will be unable to afford a contractual alternative if the population of potential entrants is large.

One might speculate in this instance that the cottagers would place the higher value on the dunes, given that the cottages existed before dune buggies arrived. Considering the age of most of the cottages, they must have been there well before the first dune buggy had even been built. Buggies are highly mobile by their nature, and there are other locales where they could be used. The drivers in my friends' vicinity must prefer those dunes to the alternatives, but how strong is the preference? The payment that would

persuade them to go elsewhere might well be modest. In contrast, the cottages cannot be relocated economically. Even if the transaction cost were zero, buggy drivers might be unwilling to pay enough to obtain or retain the right. Without well-defined property rights, however, this is speculative, hardly an adequate basis for legal fiat.

Inadequate definition or enforcement of property rights may cause people to turn instead to a contractual substitute, which can augment transaction cost (possibly to prohibitive levels) if the number of people who are required to participate is large. People may even be induced to resort to other costly alternatives such as force (Haddock 2003). Other sources of high transaction cost are more obvious to the casual observer. Many commentators focus on the masses enjoying public goods while despairing of the prospect of taking a careful census, much less gauging individual preferences.² Comprehensive negotiations would prove insuperable even if individuals had no incentive to misrepresent interest, but people often do have that incentive. If everyone else accurately reported and paid according to private interest, one's own trivial addition would cause barely a ripple, whereas if each of the others, thinking along a similar line, conceals personal preference, one's forlorn bit would finance next to nothing.

So the best strategy seems to be concealing one's individual preference, the foundation of the free-rider problem that threatens to defeat adequate voluntary funding of public goods. For instance, my friends and their neighbors have not, to this time, collected enough funds to buy off the buggy drivers. Perhaps each of them is trying to free ride, hoping to receive the benefit while the others bear the cost.

To draw an illustration from a different part of the country, consider the market for timber. Absent a jointly produced forest amenity, an unfettered timber market would seem to provide lumber efficiently. But the amenity registers in formal markets much less comprehensively. Perhaps Dakotan bricklayers value Oregon's forests—as ecosystems, not as lumber—and if necessary would willingly pay a bit to preserve them, but high transaction cost prevents those who are interested from overcoming their mutual free-rider problem.

It seems that there will be enough shoes in the Dakotas but too few trees in Oregon unless a government intervenes—presumably the U.S. government because interested parties are more numerous outside than inside Oregon. But wait, some Quebecois and Paraguayans also value Oregon's forests. Even the U.S. government seems too constricted, so some would

urge the United Nations to assume responsibility. Scoffers may point to Oregon's incentive to maintain woodland for tourists; but is that adequate, given the large number of people who never visit Oregon but nonetheless value knowing that great forests survive there?

Surprisingly, as the next section discusses, there may be no public goods shortfall with respect to Oregon's forests despite substantial existence value to those who never visit them.

Illusory Transaction Cost

People are not plants or sponges that must live or die wherever their embryos happen to lodge. Not everyone who lives in Oregon is there to enjoy the evergreens, but someone who deeply loves forestland will more likely end up in Oregon than an otherwise identical person who does not care for trees. People move to locations that afford more of those public goods that they value and try to avoid locations that impose the public bads that they find odious. A forest provides nonpecuniary income to anyone who enjoys it. Holding pecuniary returns constant, a forest lover would fare better in Oregon than would other people. One who loves forests will enjoy Oregon more than someone who only likes forest; unlike a political outcome, it is not merely positive versus negative preference but the strength of preference that counts.

Thus, anyone who likes Oregon's forests will be more likely to accept a job there if it is offered, while someone who loves forests will be quite likely to accept that job, or even to become self-employed in order to move to the state if no offer is forthcoming. People who are enthralled by Oregon's forests predictably would be especially common in Oregon, and those who most intensely love badlands would be concentrated in the Dakotas. Thus some (not all) Oregonians want more forest in their state than do most non-Oregonians.

Few evergreens are Christmas trees, but each household wants its own Christmas tree so the children can place baubles on it. In contrast—and here is the beauty of it—tree-loving Oregonians enjoy the amenity that their state's forests exude as a sense of solitude, the sights and sounds and smells of the flora and fauna, just knowing the forest is there. These joys in no way interfere with simultaneous enjoyment by people from the Dakotas, most of whom are not even in Oregon right now and some who never will be. Oregon's forests, in other words, provide public goods, including that particular form of public good called existence value.

Of course, several million people live in Oregon, so perhaps the governmental task of determining the appropriate amount of forest amenity has merely been localized rather than eradicated. Even so, a federal system with states handling state-sized problems and the national government limited to nation-sized problems would have distinct advantages. The government in Salem, the state capital, rather than the one in the District of Columbia could better govern any high-transaction-cost/free-rider problem relating to Oregon's forest amenities.³ Though people from elsewhere enjoy those forests, most of them have less intense preferences than do many Oregonians.

Point taken, but in many instances even the localized-not-eradicated viewpoint fails. Far out in the distribution's tail a few Oregonians will have atypically intense preferences for the forest in their neighborhood relative even to the majority of their fellows. It is clear that most other state residents also enjoy Oregon's evergreens, just not nearly as much as those who are way out in the tail of the statistical distribution. If those in the tail achieve an amount of forest adequate for their preferences, taking into account the cost, other Oregonians might well be satiated. The tail dwellers may satisfy themselves through county or local government, but even locally some will have more intense preferences than others. If they achieve enough forest to satiate themselves, other people in the locale may be satiated, and if everyone in the county is satiated, everyone in the state may be satiated, and so on. Indeed, a nonpolitical solution does not depend on where people with intense preferences live, only that they be few.

Economists are skeptical of the existence of some "bliss point" where people become satiated with good things in general; however, people do demonstrably become satiated with particular good things. Indeed, goods can become bads if they become too abundant. Perhaps you enjoy tomatoes (a rivalrous good), but if generous neighbors leave too many of them on your doorstep, they become a garbage disposal problem. Similarly, suppose your neighbor is a pianist who performs with the best symphonies in the world. You may enjoy listening to her practice for the performance next month (a public good since your listening does not interfere with your neighbors' ability to listen). But as she repeats the piece over and over, trying to get it down perfectly, you gradually lose interest. When it dawns on you that the repetition is likely to be a three-hour-per-day prospect until the performance, a willingness to expend resources to shield yourself materializes. You have moved so far past satiation with a public good that it has become a public bad.

Thus, matters of special concern to a fringe present no inevitable high-transaction-cost/free-rider problem—certainly none more daunting than those attending political alternatives—and thus would be irrelevant even if millions of others benefit from the efforts of those few. Private parties will often deal with such problems more effectively than any diligent bureaucracy could even be imagined doing.

In some instances, as the following section shows, even when numerous people enjoy a public good, the relevant transaction cost may be minimal or nonexistent.

Free Range Bison

Wealthy media mogul Ted Turner loves the West. When the Flying D cattle ranch, which spans a narrow valley in southwestern Montana, came on the market some years back, Turner purchased it. Mountains wall the ranch, so all of the land that Turner can see from the Flying D ranch house belongs to him.

It is well-known that Turner likes wildlife. He would have noticed that bison, antelope, grizzly bears, and other wildlife occasionally came onto the Flying D. If Turner was satisfied with the amount of wildlife that he observed, he could enjoy it without reducing the pecuniary returns he derived from his ranch. Turner, however, was dissatisfied, and in consequence substituted bison for the cattle that had previously been raised on the ranch. Meat from the bison is marketed much as had been the beef before the substitution. Bison are large, short-tempered, and therefore dangerous animals—more difficult to manage than cattle. Consequently, bison are more costly to raise, and the ranch's profitability would have been reduced, as Turner's accountant must have pointed out.

Assuming no amenity value was attributable to the cattle that were on the Flying D, their value and the cost of raising them could be observed objectively from market prices. The same would be true of the bison meat marketed after they were substituted for the cattle. Because Turner does not market the amenity attributable to the bison, however, but in a manner of speaking consumes it, its value has no objective measure to contrast with the reduced ranch profits. Thus, an observer such as Turner's accountant would be unable to ascertain the ranch's optimal use pattern; only Turner could do that. If a man of Turner's acute business sense is prepared to sacrifice some profits from the Flying D in order to see bison rather than cattle

outside his ranch house, the bison's amenity value to him must be greater than the lost profits.

Other costly wildlife-friendly alterations were available. Herbivores such as antelope had competed with the cattle for the limited grass on the Flying D pastures, and now competed with the bison. Rather than shooting them or driving them away, Turner might permit the antelope to mix with the bison on the pastures. Because the antelope are not marketed, they would yield no pecuniary benefit to Turner, but would impose a cost to the extent that the productivity of the bison herd fell. Turner would willingly bear that cost if the value to him of seeing antelope nearby was greater. Predators such as the grizzlies had threatened the cattle, and now threatened the bison. Again, rather than shooting them or driving them away, Turner would tolerate those animals if the amenity value to him exceeded the losses from the animals that the bears killed. Turner pursued each of those options to the extent it pleased him personally. Because of its rich population of wildlife, the Flying D ranch now puts some national parkland to shame.

Note that in the somewhat peculiar jargon of economics, the wildlife would be a public good even under the present assumption that only Turner visits the Flying D; his act of viewing the wildlife would have no impact on the ability of anyone else to view it. Under the assumption, it just happens that nobody else would be present to view it. That public—Turner alone—faces no free-rider problem and therefore will be able to see that the optimal amount of wildlife—the amount that satiates Turner, given the cost—lives in the valley. The wildlife amenity is a public good with no free-rider problem. The assumption, however, has trivialized the policy issue that ordinarily arises, but that can be corrected.

A small state road traverses the valley, wending its way between a highway in the Gallatin Valley and a state-owned campsite. Drivers passing along the road can see and photograph the animals living on the Flying D. Legally, Turner cannot charge for the excellent views because the drivers are on a state road. This complication does not necessarily alter the conclusion that there is no relevant free-rider problem in the valley. In the terminology of Buchanan and Stubblebine (1962), the wildlife may provide an irrelevant positive externality. The amenity may be a public good that raises no policy issues of relevance to the general public.

It has been seen that Turner has satiated himself with wildlife, given the cost that wildlife imposes on his ranch. Because Turner is on the ranch more often and for more extended periods than those who drive through, and

visits parts of the ranch that cannot be seen from the highway, the drivers might well be satiated with fewer animals than Turner has selected solely to satisfy his personal preference. Assume for the moment that this is true. Then, to rephrase a point made with respect to Oregon's forests, the joy that Turner experiences by having wildlife on the Flying D does not interfere with simultaneous enjoyment by other people, including some who never will drive through the valley but are gratified to know of the wildlife habitat there. Because observation does not consume the animals, we can all enjoy the exact same ones at the exact same moment, but by the present assumption we are satiated before Turner is. Public goods may create a lot of positive externalities, but a lot of those externalities are irrelevant to optimal public policy.

The additional animals that are required to satiate Turner comprise a public good in the economist's nonrivalrous sense, but the public interest can hardly be implicated. Though taken in its entirety Turner's investment confers a positive externality on those driving by, their free ride is inconsequential if only Turner is able to notice the last few animals that have been added, and is willing to add them at his own expense. People driving along the highway cannot be excluded from enjoying the view though they pay no part of the expense, but the animal population on the Flying D would be optimal nonetheless.

The free riding would actually increase the value of the wildlife. If Turner could demand a fee from passing drivers, some would be unwilling to pay. Those drivers would be denied the ability to see the wildlife, which is of positive value to them though insufficient to justify the price Turner asked. No countervailing increase in enjoyment by other people would ensue, however, because observation of wildlife is nonrivalrous.

As to the Flying D, no public involvement will be necessary to achieve the optimal amount of the public good. Turner has selected it of his own volition and at his own expense. A public good certainly exists because people enjoy viewing the animals while driving through the ranch but depreciate nobody else's enjoyment in the process. There is free riding because the passersby bear none of the cost, but that is irrelevant.

The intuition that more users inevitably require more of a good betrays careless thinking. Given a willingness to pay at least incremental cost, it is indeed appropriate that all demands for a rivalrous good such as shoes affect output. But relatively weak preferences have no effect on the optimal amount of a public good. People with weak demands may value the public

good, but they are satiated before their preferences affect optimal provision. Paradoxically, the irrelevant demanders are the lucky demanders—they are able to enjoy the public good while paying none of its cost.

Even if, given the drivers passing by, the ideal wildlife population is larger than Turner selects to satisfy his personal preference, an appropriate adjustment might be accomplished through voluntary negotiation. But with a potentially large group of drivers passing by, how likely is a transaction cost low enough to permit that outcome? Surprisingly, low transaction cost is plausible precisely because the amenity is a public good and consequently is not denied to less avid consumers merely because more avid ones rush to enjoy it. Various drivers undoubtedly have varying interests in viewing wildlife. As a result, even though (under this new assumption) Turner has failed to satiate the drivers passing by, a private arrangement whereby the most avid passerby pays Turner to expand the wildlife population might potentially satiate all the other drivers. It hardly matters how many drivers pass by, two or two million; only the most avid of their preferences is relevant, only that one need negotiate with Turner, and all the others can free ride.

Perhaps two million people might eventually drive through the Flying D or derive benefit from the existence value of the ranch's wildlife. The cost if all two million of them attempted to negotiate with Turner would certainly be prohibitive, but just as certainly pointless. Imagine what would be discovered if new technology reduced transaction cost to zero?—that after Turner had satisfied himself and possibly one or a few passersby, nobody else would pay one iota to expand the wildlife population even further. Thus, the level of a many-party transaction cost is irrelevant if either (1) because of a greater number and duration of his visits, Turner inadvertently satiates all the passing drivers, or (2) transaction cost between Turner and a relevant few passersby is modest.

Turner is attuned to the market for bison meat, to local transport, to the prices of hay and all the other inputs he uses, and thus can cheaply judge the opportunity cost of additional wildlife on his ranch. Bureaucrats can find objective information for some of such variables, though collecting the information is costly. Suppose that the bureaucracy manages to hit the nail on the head. Market prices of meat, timber, hay, and the like are unlikely to be static. Thus, even a perfect bureaucratic judgment is unlikely to remain perfect. Of course, if one believes that a tolerable bureaucratic estimate yesterday was plausible, a tolerable bureaucratic estimate tomorrow is plausible. But formulating a new estimate after the relevant variables have

changed requires canvassing those affected—in other words, once again obtaining costly information that the participants already possess. Partly because of that greater information cost, bureaucratic policy tends toward inflexibility and episodic but large changes. This has actually understated the bureaucrat's problem. The few most avid passersby are the only reliable judges of the subjective value to them of the amenity, just as Turner is the only reliable judge of the amenity value to him. No bureaucrat, regardless of motivation, can measure the subjective values of anyone but himself or herself.

Transaction cost for public goods—even those demonstrably enjoyed by millions—are chronically overestimated in policy discussions. Only one or a few avid parties often determine both actual and ideal provision, and even two million free riders can be irrelevant.

Nonoptimal Government Provision of Public Goods

Erroneous though it is, a belief that “public goods are generally not adequately supplied by the private sector, [so] they have to be supplied by the public sector” does not logically imply that “public goods are generally adequately supplied by the public sector.” Nevertheless, the government / public-goods nexus forms a focal point that distracts attention from demonstrable government failures. Even if shown examples of adequate private provision, nexus fanatics often believe that designating the government as the default provider is wise. Private arrangements are imperfect, but so are government arrangements (Demsetz 1969).

This section explores two failures to optimize government-provided public goods. The first concerns the national park system, where a separate and inconsistent policy reduces public goods to rivalrous goods. The second analyzes the effort to protect endangered species, which concentrates so large a share of the cost of the public good on particular individuals that potential allies become saboteurs.

National parks in the United States are often referred to as a national treasure. Surely there are enough people with an avid preference for, say, Yellowstone National Park to frustrate optimal private provision. Perhaps. Speaking counterfactually, present congestion in Yellowstone *might* have arisen because high transaction cost frustrated private efforts; speaking factually, it *did* materialize despite a century and a third of government preemption of private efforts.⁴ We have little evidence regarding private

amenity provision in Yellowstone, though initially people were able to enjoy it solely through the efforts of three private railroad companies, the Union Pacific, the Burlington, and the Milwaukee (Anderson and Hill 1994; 1996). Motivated by company, not public, benefit, the railroads then lobbied for national government (and national treasury) involvement.⁵

All that is beside the point. Though Yellowstone's amenities are nonrivalrous during low season, so many members of the public try to enjoy the park during high season that the amenity becomes rivalrous.⁶ One cannot visit Yellowstone during summer without diminishing others' enjoyment because government policy prevents the admission fee from clearing all manner of queues. Transaction cost for dealing with the queues is the cost of one ranger at the entrance collecting a fee from one automobile at a time, which is borne already. It is a fraction of the transaction cost one bears to purchase a pair of shoes. Thus the good is nonrivalrous but excludable. The low-fee policy is justified as making it possible for anyone to visit the park regardless of income, but anyone who could not afford even a tenfold increase in the admission fee at national parks cannot afford the much greater expense of getting there. A tenfold increase in the fee would divert some of those who can afford the trip to alternative attractions. The main beneficiaries of present policy are middle-class and wealthy individuals who can afford the trip but are spared the higher fees that would maintain the public goods nature of our national treasures. Thus, despite self-serving claims to the contrary, the policy is regressive.

The second illustration of a discrepancy between the ideal and a government-provided public good concerns the Endangered Species Act. Superficially, the legislation is straightforward: when a rare species is discovered at a site, development of the site that would alter the habitat is severely restricted. This provides a public good; the joy that I experience by knowing the rare species exists over a previously unexpected range does not interfere with your joy. You and I pay nothing in exchange—unless one of us owns the land upon which the species has been found. One person, the landowner, is forced to bear the entire cost of a public good that benefits the whole world. Most of us are prepared to bear such a cost to maintain particular goods for which our individual preference is especially avid. Some people, such as Ted Turner, are prepared to bear substantial cost in such a cause. If they are the first to detect on their land a rare species for which they feel no such avidity, however, some landowners resort to what

is known colloquially as the Three S Policy—shoot, shovel, and shut up. In other words, kill the animal or plant, dispose of it quietly, and speak of it to nobody. Some landowners who fear they are at risk do not wait to discover the endangered species but alter the likely site to render it an incompatible habitat (Lueck and Michael 2003).

Fanatics of the government/public-goods nexus often treat examples such as these two as aberrations. The solution, they believe, is merely to root out the system's occasional miscarriage. Given enough space, however, I could relate dozens of substantial deviations between the policy the government pursues with regard to a public good and the policy the government should pursue with regard to it. I have little doubt that the readers could come up with thousands of additional examples.

Conclusion

The point of this chapter certainly should not be taken as a claim that private action inevitably produces an ideal amount of any particular public good. Rather, the point is that though government provision might potentially be an improvement in particular instances, there exists no inexorable nexus. Moreover, private and government actions can both be imperfect. Government sometimes provides excessive amounts of a public good or moves in the wrong direction altogether (Haddock 2006). The task, then, is not to identify perfection as a theoretical matter but to select the avenue that comes closest. Discovering that a good possesses public goods attributes should not end careful analysis so much as set it in motion.

We are awash in externalities, including those conferred by many public goods (and inflicted by many public bads). Many people believe that properly managing such impacts requires government intervention. This chapter is a rebuttal of that view, challenging several of its tenets. First, it disputes the notion that the optimal amounts of public goods can be inferred from a theory that was derived to understand rivalrous goods. Because a public good is not used up as an individual enjoys it, the appropriate amount cannot be determined from the population of users, but instead depends on the preferences of a subset of users—the most avid one(s). Similarly, the optimal amount of a public good has no logical connection with the sum that a typical user would pay to enjoy the good if forced to do so. Thus, many surveys intended to establish that amount are beside the point, quite apart from the difficulties that they have in eliciting accurate responses. Second,

the chapter contradicts the notion that free-rider problems inevitably become more severe as the number of parties consuming a public good grows. Third, it argues that private parties can readily arrange for an appropriate amount of many public goods.

A public good, even one enjoyed by a very large public, creates no policy issue if other people are satiated by the most avidly interested person's own voluntary decisions. Even if others are not satiated in that way, no policy issue arises unless transaction cost seriously burdens negotiations between that person and the other relevant people, in Buchanan and Stubblebine's meaning of relevant. Given enough interpersonal variance among preferences, the other relevant parties may consist of only a few people, and little transaction cost would be incurred to negotiate the proper amount.

That scholars would fail to notice voluntary provision of a public good by an individual is especially peculiar given that the provision of public goods is an important component of our own output. Many scholars are employed by universities such as Harvard (founded in 1636), Yale (1701), Dartmouth (1769), and Northwestern (1851) that existed before government became involved in higher education. The entire academic salary bill is not provided by the government even today.

To be sure, some research yields private benefits such as salary increments and prestige—just as Turner's bison yield private benefits to him. Although the private benefits explain why scholars pursue ideas so avidly, once developed, an idea's use by one person rarely destroys its usefulness to another. Some ideas would have been anticipated to yield the provider little private reward apart from personal satisfaction; a price theory text placed on its author's Web site after the book is out of print is an easily examined example (Friedman 1990). Similarly, Einstein was driven to his paradigm-shifting view of the universe by a long-standing yearning to understand the nature of light, an obsession that most contemporary physicists thought so inane that Einstein could obtain no university position for years.

Hiking trails in Great Britain often traverse farmland. The farmers maintain their land for private purposes but do not resist anonymous hikers who enjoy seeing it and "take nothing but memories; leave nothing but foot-steps"—the same motto that is urged on hikers in our national parks. Some parts of the Appalachian Trail cross private land. Guest ranches in the West seek out especially beautiful locales and then purchase and preserve them in order to maintain high occupancy. Enjoyment of the views is definitely

nonrivalrous, so the views are public goods, often nonexcludable, and they provide existence value.

Even if some government involvement might prove beneficial, production itself would often be better done privately. In most nations, government ownership and operation of radio and television are the norm, but opportunistic censoring of news is a problem in a majority of those nations. In the United States noncommercial set-asides are a long-standing government policy, but with very few exceptions, ownership and operation of the individual stations has been placed in the hands of privately organized non-profit organizations. Such organizations often receive government subsidies, but the proportion of operating expense that is drawn from private sources has risen dramatically in recent years.

In a similar way, rather than being government-operated parks, sites such as Yellowstone that provide exceptional environmental amenities could be designated geographic noncommercial set-asides, with their operation endowed to privately organized nonprofit organizations, with intrusive forms of development barred. Supervision would be near at hand and would be concerned with an individual site rather than being thousands of miles away in the District of Columbia and intermingled with issues peculiar to any of hundreds of other parks.

The government / public-goods nexus should be seen as a special case, not a general rule. One may ask how to determine whether government provision of a public good or one of the private alternatives is to be preferred. The answer is that the policy maker must leave the ivory tower from time to time. Theory can tell us what a screwdriver is capable of and what a saw can do. One can never know whether to use the saw or the screwdriver without first determining whether the task requires cutting the wood or fastening it together. Theory exists on a pedestal in universities, often to the exclusion of serious institutional and empirical analysis. Theory is a tool, however; it can never put aside the necessity of observation.

Much mischief arises from a misapprehension that a large number of public good beneficiaries creates prohibitive transaction cost. This will be true only if comprehensive negotiation among them is necessary, but comprehensive negotiation will be unnecessary with a large variance across beneficiaries in the strength of their interest in the good. Nor does widespread, even rampant, free riding necessarily recommend a headlong charge up the capitol steps. For public goods, there can be such a thing as a free lunch.

Notes

1. Such a possibility is no academic pipe dream. Acting on suggestions put forward by Meiners and Kosnik (2003), parties holding mutually inconsistent demands for water use in southern Oregon have initiated negotiations that aim to convert what had seemed to be an intractable conflict into an orderly mechanism for channeling the water where its use is most critical during any given period. See Chapter 5.
2. Boudreaux, Meiners, and Zywicki (1999) review the literature and critique frequent overreaching.
3. Or the problem might best be delegated to specialized agencies with borders not coincident with any other political unit's, being either larger than a state—perhaps Washington and northern California (even British Columbia) in addition to Oregon—or smaller—Oregon's Willamette Valley might encompass a complete unit. More external effects would no doubt spill across the borders of a smaller unit, but it would simultaneously provide information and offset agency costs while mitigating the monopoly potential of geographically large sovereigns. The matter involves cost versus benefit rather than good versus bad (Haddock 1997).
4. In 1872 Congress removed the Yellowstone area from the domain that could be claimed by private individuals, though technically it became a national park only when the National Park Service was created in 1916. Until then such reserves were administered directly by the Department of the Interior.
5. Similarly, a recent Public Broadcasting System series revealed that railroad companies were instrumental in opening both the south (Santa Fe) and north (Union Pacific) rims of the Grand Canyon, as well as the areas that became Zion and Bryce Canyon national parks (Union Pacific again).
6. Having less of a public (during low season) makes the Yellowstone amenities public goods; having more of a public (during high season) means that they are not!

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