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The Trashman Cometh

Is garbage really different? To answer this question, let us consider a simple hypothetical situation. Suppose a city agreed to provide its residents with all of the food they wished to consume, prepared in the manner they specified, and delivered to their homes for a flat, monthly fee that was independent of what or how much they ate. What are the likely consequences of this city food-delivery service? Most likely, people in the city would begin to eat more, because the size of their food bill would be independent of the amount they ate. They would also be more likely to consume lobster and filet mignon rather than fish sticks and hamburger because, once again, the cost to them would be independent of their menu selections. Soon the city's food budget would be astronomical, and either the monthly fee or taxes would have to be increased. People from other communities might even begin moving (or at least making extended visits) to the city, just to partake of this wonderful service. Within short order the city would face a food crisis as it sought to cope with providing a rapidly growing amount of food from a city budget that could no longer handle the financial burden.

If this story sounds silly to you, just change "food delivery" to "garbage pickup"; what we have just described is the way most cities in the country historically have operated their municipal garbage-collection services. The result during the late 1980s and early 1990s was the appearance of a garbage crisis—with overflowing landfills, homeless garbage scows, and drinking-water wells said to be polluted with the runoff from trash heaps. This seeming crisis—to the extent it existed—was fundamentally no different from the food crisis just described. The problem was not that (1) almost nobody wants garbage, nor that (2) garbage can

have adverse environmental effects, nor even that (3) we had too much garbage. The problem lay in that (1) we often do not put prices on garbage in the way we put prices on the goods that generate the garbage, and (2) a strange assortment of bedfellows used a few smelly facts to make things seem worse than they were.

First things first. America produces plenty of garbage—about 230 million tons of household and commercial solid waste that either has to be burned, buried, or recycled. (That works out to over 1500 pounds per person.) About 36 percent of this is paper, whereas yard waste (such as grass trimmings) accounts for another 12 percent. Plastics amounts to about 20 percent of the volume of material that has to be disposed of, but because plastic is relatively light, it comprises only about 11 percent of the weight. More than 70 million tons of this trash is recycled.

Landfills are the final resting place for most of our garbage, although incineration is also widely used in some areas, particularly in the Northeast, where land values are high. Both methods began falling out of favor with people who lived near these facilities (or might eventually), as NIMBY (not-in-my-backyard) attitudes spread across the land. Federal, state, and local regulations also made it increasingly difficult to establish new waste disposal facilities, or even to keep old ones operating. The cost to open a modern 100-acre landfill rose to an estimated $70 million or more, and the permit process needed to open a new disposal facility soared to seven years in some states. Meanwhile, environmental concerns forced the closure of many landfills throughout the country and prevented others from ever beginning operations. By 1992, all but five states were exporting at least some of their garbage to other states. Today, most of the garbage from some densely populated states in the Northeast ends up in other people's backyards: New Jersey ships garbage to ten other states, while New York keeps landfill operators busy in thirteen different states. Across the country, some Americans have wondered where all of the garbage is going to go.

Although the failure of America's cities to price garbage appropriately led to an inefficient amount of the stuff, much of the appearance of a garbage crisis has been misleading. Rubbish first hit the headlines in 1987 when a garbage barge named *Mobro*,

headed south with New York City trash, couldn't find a home for its load. As it turns out, the barge operator wanted to change his disposal contract after he sailed; when he tried to conduct negotiations over the radio while under way, operators of likely landfills (mistakenly) suspected he might be carrying toxic waste rather than routine trash. When adverse publicity forced the barge back to New York with its load, many people thought it was a lack of landfill space, rather than poor planning by the barge operator, that was the cause. This notion was reinforced by an odd combination of environmental groups, waste management firms, and the Environmental Protection Agency (EPA).

The Environmental Defense Fund wanted to start a major campaign to push recycling, and the *Mobro* gave things the necessary push. As one official for the organization noted, "An advertising firm couldn't have designed a better vehicle than a garbage barge." Meanwhile, a number of farsighted waste management companies had begun loading up on landfill space, taking advantage of new technologies that increased the efficient minimum size of a disposal facility. Looking to get firm contracts for filling this space, the trade group for the disposal industry started pushing the notion that America was running out of dump space. State and local officials who relied on the group's data quickly bought into the new landfills, paying premium prices to do so. The EPA, meanwhile, was studying the garbage problem but without accounting for the fact that its own regulations were causing the efficient scale of landfills to double and even quadruple in size. Thus the EPA merely counted landfills around the country and reported that they were shrinking in number. This was true enough, but what the EPA failed to report was that because landfills were getting bigger much faster than they were closing down, total disposal capacity was *growing* rapidly, not shrinking.

For a while, it seemed that recycling was going to take care of what appeared to be a growing trash problem. In 1987, for example, old newspapers were selling for as much as $100 per ton in today's prices, and many municipalities felt that the answer to their financial woes and garbage troubles was at hand. Yet as more communities began putting mandatory recycling laws into effect, the prices of recycled trash began to plummet. Over the next five years, 3500 communities in more than half the states had some

form of mandatory curbside recycling; the resulting increase in the supply of used newsprint meant that communities soon were having to pay to have the stuff carted away. For glass and plastics, the story is so far much the same. The market value of the used materials is below the cost of collecting and sorting it. About a dozen states have acted to increase the demand for old newsprint by requiring locally published newspapers to utilize a minimum content of recycled newsprint. Even so, many experts believe that no more than 60 to 70 percent of all newsprint can be recycled, and we are already recycling 52 percent of it, up from 33 percent in 1988.

Just as significantly, recycling raises significant issues that were often ignored during the early rush to embrace the concept. For example, the production of a hundred tons of de-inked fiber from old newsprint produces about 40 tons of sludge that must be disposed of somehow. Although the total volume of material is reduced, the concentrated form of what is left can make it more costly to dispose of properly. Similarly, recycling paper is unlikely to save trees, for most virgin newsprint is made from trees planted expressly for that purpose and harvested as a crop: if recycling increases, many of these trees simply will not be planted. In a study done for Resources for the Future, A. Clark Wiseman concluded, "The likely effect of [newsprint recycling] appears to be smaller, rather than larger, forest inventory." Moreover, most virgin newsprint is made in Canada, using clean hydroelectric power. Makers of newsprint in the United States (the primary customers for the recycled stuff) often use higher-polluting energy such as coal. Thus one potential side effect of recycling is the switch from hydroelectric power to fossil fuels.

Some have argued that we should simply ban certain products. For example, Styrofoam cups have gotten a bad name because they take up more space in landfills than do paper hot-drink cups, and because Styrofoam remains in the landfill forever. Yet according to a widely cited study by Martin B. Hocking of the University of Victoria, the manufacture of a paper cup consumes 36 times as much electricity and generates 580 times as much wastewater as does the manufacture of a Styrofoam cup. Moreover, as paper degrades underground, it releases methane, a greenhouse gas that contributes to global climate change. In a similar vein, consider disposable diapers, which have been trashed by their opponents because a week's worth generates 22.2 pounds of post-use waste, whereas a week's worth of reusable diapers generates only 0.24

pound. Because disposable diapers already amount to 1 percent of the nation's solid waste, the edge clearly seems to go to reusable cloth diapers. Yet the use of reusable rather than disposable diapers consumes more than three times as many BTUs (British thermal units) of energy and generates ten times as much water pollution. It would seem that the trade-offs that are present when we talk about "goods" are just as prevalent when we discuss "bads" such as garbage.

It also appears that more government regulation of the garbage business is likely to make things worse rather than better, as may be illustrated by the tale of two states: New Jersey and Pennsylvania. A number of years ago, to stop what was described as price-gouging by organized crime, New Jersey decided to regulate waste hauling and disposal as a public utility. Once the politicians got involved in the trash business, however, politics very nearly destroyed the business of trash. According to Paul Kleindorfer of the University of Pennsylvania, political opposition to passing garbage-disposal costs along to consumers effectively ended investment in landfills. In 1972 there were 331 landfills operating in New Jersey; by 1988 the number had fallen to 13, because the state-regulated fees payable to landfill operators simply didn't cover the rising costs of operation. Half of New Jersey's municipal solid waste is now exported to neighboring Pennsylvania.

Pennsylvania's situation provides a sharp contrast. The state does not regulate the deals that communities make with landfill and incinerator operators; the market takes care of matters instead. For example, despite the state's hands-off policy, tipping fees (the charges for disposing of garbage in landfills) are below the national average in Pennsylvania, effectively limited by competition between disposal facilities. The market seems to be providing the right incentives; in one recent year, there were 31 pending applications to open landfills in Pennsylvania, but only 2 in New Jersey, despite the fact that New Jersey residents are paying the highest disposal rates in the country to ship garbage as far away as Michigan, Illinois, Missouri, and Alabama.

Ultimately, two issues must be solved when it comes to trash. First, what do we do with it once we have it? Second, how do we reduce the amount of it that we have? As hinted at by the Pennsylvania story and illustrated further by developments elsewhere in the country, the market mechanism can answer both questions.

The fact of the matter is that in many areas of the country, population densities are high and land is expensive. Hence a large amount of trash is produced, and it is expensive to dispose of locally. In contrast, there are some areas of the country where there are relatively few people around to produce garbage, where land for disposal facilities is cheap, and where wide-open spaces minimize the potential air pollution hazards associated with incinerators. The sensible thing to do, it would seem, is to have the states that produce most of the trash ship it to states where it can be most efficiently disposed of—for a price, of course. This is already being done to an extent, but residents of potential recipient states are (not surprisingly) concerned, lest they end up being the garbage capitals of the nation. Yet Wisconsin, which imports garbage from as far away as New Jersey, is demonstrating that it is possible to get rid of the trash without trashing the neighborhood. Landfill operators in Wisconsin are now required to send water-table monitoring reports to neighbors and to maintain the landfills for 40 years after closure. Operators also have guaranteed the value of neighboring homes to gain the permission of nearby residents and in some cases have purchased homes to quiet neighbors' objections. These features all add to the cost of operating landfills, but as long as prospective customers are willing to pay the price and neighboring residents are satisfied with their protections—and so far these conditions appear to be satisfied—then it would seem tough to argue with the outcome.

Some might still argue that it does not seem right for one community to be able to dump its trash elsewhere. Yet the flip side is this: Is it right to *prevent* communities from accepting the trash, if that is what they want? Consider Gilliam County, Oregon (pop. 1950), which wanted Seattle's garbage so badly it fought Oregon state legislators' attempts to tax out-of-state trash coming into Oregon. Seattle's decision to use the Gilliam County landfill generated $1 million per year for the little community—some 25 percent of its annual budget and enough to finance the operations of the county's largest school.

Faced with the prospect of paying to dispose of its garbage, Seattle quickly had to confront the problem of reducing the amount of trash its residents were generating. Its solution was to charge householders according to the amount they put out. Seattle

thus began charging $16.10 per month for each can picked up weekly. Yard waste that has been separated for composting costs $4.25 per month, and paper, glass, and metal separated for recycling are hauled away at no charge. In the first year that per-can charges were imposed, the total tonnage that had to be buried fell by 22 percent. Voluntary recycling rose from 24 percent of waste to 36 percent—a rate almost triple the national average at the time. The "Seattle Stomp" (used to fit more trash into a can) became a regular source of exercise, and the city had trouble exporting enough garbage to fulfill its contract with Gilliam County.

The Seattle experience is paralleled by a similar program in Charlottesville, Virginia. A few years ago, this university town of 40,000 began charging 80 cents per 32-gallon bag or can of residential garbage collected at the curb. The results of the city's new policy suggest that people respond to garbage prices just as they do to all other prices: When an activity becomes more expensive, people engage in less of it. In fact, after controlling for other factors, the introduction of this unit-pricing plan induced people to reduce the volume of garbage presented for collection by 37 percent.

Where did all of the garbage go? Well, some of it didn't go anywhere, because many residents began practicing their own version of the Seattle Stomp, compacting garbage into fewer bags. Even so, the total weight of Charlottesville's residential garbage dropped by 14 percent in response to unit pricing. Not all of this represented a reduction in garbage production, because some residents resorted to "midnight dumping"—tossing their trash into commercial Dumpsters or their neighbors' cans during late-night forays. This sort of behavior is much like the rise in gasoline thefts that occurred in the 1970s when gas prices jumped to the equivalent of $3 to $4 per gallon. But just as locking gas caps ended most gas thefts, there may be a simple way to prevent most midnight dumping. Economists who have studied the Charlottesville program in detail suggest that property taxes or monthly fees could be used to cover the cost of one bag per household each week, with a price per bag applied only to additional bags. According to these estimates, a one-bag allowance would stop all midnight dumping by most one-person households and stop almost half the dumping by a hypothetical three-person household. Moreover, such a scheme would retain most of the environmental benefits of the garbage-pricing program.

The message slowly beginning to emerge across the country, then, is that garbage really is not different from the things we consume in the course of producing it. As long as the trashman is paid, he will cometh, and as long as we must pay for his services, his burden will be bearable.

DISCUSSION QUESTIONS

1. How do deposits on bottles and cans affect the incentives of individuals to recycle these products?
2. Why do many communities mandate recycling? Is it possible to induce people to recycle more without requiring that all residents recycle?
3. How do hefty per-can garbage pickup fees influence the decisions people make about what goods they will consume?
4. A community planning on charging a fee for trash pickup might structure the fee in any of several ways. It might, for example, charge (1) a fixed amount per can, (2) an amount per pound of garbage, or (3) a flat fee per month, without regard to amount of garbage. How would each of these affect the amount and type of garbage produced? Which system would lead to an increase in the use of trash compactors? Which would lead to the most garbage?