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Recycling Is Garbage

By John Tierney

AS THEY PUT ON PLASTIC GLOVES FOR THEIR first litter hunt, the third graders knew what to expect. They knew their garbage. It was part of their science curriculum at Bridges Elementary, a public school on West 17th Street in Manhattan. They had learned the Three R's -- Reduce, Reuse, Recycle -- and discussed how to stop their parents from using paper plates. For Earth Day they had read a Scholastic science publication, "Inside the World of Trash." For homework, they had kept garbage diaries and drawn color-coded charts of their families' trash. So they were primed for the field experiment on this May afternoon.

"We have to help the earth," Natasha Newman explained as she and her classmates dashed around the school collecting specimens. Their science teacher, Linnette Aponte, mediated disputes -- "I saw that gum wrapper first!" -- and supervised the subsequent analysis of data back in the classroom. The students gathered around to watch her dump out their bags on the floor.

Do you see any pattern as I'm emptying it?" Miss Aponte asked.

"Yeah, it stinks."

"Everybody's chewing Winterfresh."

"A lot of paper napkins."

"It's disgusting."

"They're throwing away a folder. That's a perfectly good folder!"

"It's only half a folder."

"Well, they could find the other half and attach them together."

Miss Aponte finished emptying the last bag. "We've been learning about the need to reduce, reuse and recycle," she said, and pointed at the pile. "How does all this make you feel?"

"Baaaaad," the students moaned.

Miss Aponte separated out two bottles, the only items in the pile that could be recycled. She asked what lesson the students had learned. The class sentiment was summarized by Lily Finn, the student who had been so determined to save the half folder: "People shouldn't throw away paper or anything. They should recycle it. And they shouldn't eat candy in school."

Lily's judgment about candy sounded reasonable, but the conclusion about recycling seemed to be contradicted by the data on the floor. The pile of garbage included the equipment used by the children in the litter hunt: a dozen plastic bags and two dozen pairs of plastic gloves. The cost of this recycling equipment obviously exceeded the value of the recyclable items recovered. The equipment also seemed to be a greater burden on the environment, because the bags and gloves would occupy more space in a landfill than the two bottles.

Without realizing it, the third graders had beautifully reproduced the results of a grand national experiment begun in 1987 -- the year they were born, back when the Three R's had nothing to do with garbage. That year a barge named the Mobro 4000 wandered thousands of miles trying to unload its cargo of Long Islanders' trash, and its journey had a strange effect on America. The citizens of the richest society in the history of the planet suddenly became obsessed with personally handling their own waste.

Believing that there was no more room in landfills, Americans concluded that recycling was their only option. Their intentions were good and their conclusions seemed plausible. Recycling does sometimes make sense -- for some materials in some places at some times. But the simplest and cheapest option is usually to bury garbage in an environmentally safe landfill. And since there's no shortage of landfill space (the crisis of 1987 was a false alarm), there's no reason to make recycling a legal or moral imperative. Mandatory recycling programs aren't good for posterity. They offer mainly short-term benefits to a few groups -- politicians, public relations consultants, environmental organizations, waste-handling corporations -- while diverting money from genuine social and environmental problems. Recycling may be the most wasteful activity in modern America: a waste of time and money, a waste of human and natural resources.

The obvious temptation is to blame journalists, who did a remarkable job of creating the garbage crisis, often at considerable expense to their own employers. Newspaper and magazine publishers, whose products are a major component of municipal landfills, nobly led the crusade against trash, and they're paying for it now through regulations that force them to buy recycled paper -- a costly handicap in their struggle against electronic rivals. It's the first time that an industry has conducted a mass-media campaign informing customers that its own product is a menace to society.

But the press isn't solely responsible for recycling fervor; the public's obsession wouldn't have lasted this long unless recycling met some emotional need. Just as the third graders believed that their litter run was helping the planet, Americans have embraced recycling as a transcendental experience, an act of moral redemption. We're not just reusing our garbage; we're performing a rite of atonement for the sin of excess. Recycling teaches the themes that previous generations of schoolchildren learned from that Puritan classic, "The Pilgrim's Progress."

John Bunyan's 17th-century allegory features a character not unlike the garbage barge that left Long Island: a man dressed in rags who flees the City of Destruction, desperate to find a place he can unload the "great burden upon his back." Guided by the Evangelist, the pilgrim wanders the world trying to reach the Celestial City. His worst trial occurs in Vanity Fair, a village market founded by Beelzebub and inhabited by noblemen named Lord Luxurious and Sir Having Greedy. The market offers tempting wares, but the pilgrim bravely practices the first R -- reduce -- by shunning the products of the "merchandizers" and continuing on to the Celestial City.

Today's schoolchildren, though, might be confused by one character encountered on Bunyan's road to salvation: a man, the source of our word "muckraker," who is busy raking together a compost pile. This recycler of household waste isn't presented as a role model for the pilgrim. He's a symbol of moral blindness

because, instead of looking up to see the heavenly rewards awaiting him, he "could look no way but downwards, with a muck-rake in his hand." In Bunyan's time, it would have been hard to imagine that pilgrims would one day be taught to search for salvation right down there in the muck.

The Day of Reckoning Foretold

"All I've been thinking about all week is garbage. I mean, I just can't stop thinking about it. . . . I've just gotten real concerned over what's gonna happen. . . . I started feeling this way . . . when that barge was stranded."

-- Opening lines of the 1989 film "Sex, Lies and Videotape," spoken to a psychiatrist by a woman whose real problems -- sexual and marital unhappiness -- have nothing to do with municipal solid waste.

AT THE TIME AMERICANS BECAME RACKED WITH GARBAGE GUILT, businesses were already recycling millions of tons of trash a year. They were voluntarily -- and profitably -- recycling newsprint, office paper, cardboard, aluminum and steel. But the barge's plight convinced everyone that voluntary enterprise was not enough. As Newsweek noted, the Mobro's saga was "to the trash crisis what the sinking of the Lusitania was to World War I." The magazine's cover story, titled "Buried Alive," warned: "With rare exceptions during wartime, Americans have not been adept at making individual sacrifices for the common good. That mentality will have to change. Otherwise, the dumps will cover the country coast to coast and the trucks will stop in everybody's backyard."

Suddenly, just as central planning was going out of fashion in eastern Europe, America devised a national five-year plan for trash. The Environmental Protection Agency promulgated a "Waste Hierarchy" that ranked trash-disposal options: recycling at the top, composting and waste-to-energy incinerators in the middle, landfills at the bottom.

The E.P.A.'s five-year goal, to recycle 25 percent of municipal trash, was announced in a speech in early 1988 by J. Winston Porter, an assistant administrator of the agency. Even as Porter was setting the goal, he realized that it was presumptuous for a bureaucrat in Washington to tell everyone in America what to do with their trash. "After all the publicity about the barge," Porter recalls, "I sat down with some engineers in my office to estimate how much municipal waste could be recycled. At that time, about 10 percent was being recycled. We looked at the components of waste, made a few quick calculations and figured that it was reasonable to reach a level of 25 percent within five years. It wasn't a highly quantified thing. Some of the staff didn't even want me to mention a figure. But I thought it would be good to set a target, as long as it was strictly voluntary and didn't involve a lot of regulations."

Politicians across the country had bigger ideas. State and city officials enacted laws mandating recycling and setting arbitrary goals even higher than the E.P.A.'s. Most states set rigid quotas, typically requiring that at least 40 percent of trash be recycled, often even more -- 50 percent in New York and California, 60 percent in New Jersey, 70 percent in Rhode Island. Industries were pressured to set their own goals. Municipalities followed the Waste Hierarchy by building waste-to-energy incinerators and starting thousands of curbside recycling programs -- all in the belief that it would be cheaper than landfilling. But the incinerators turned out to be disastrously expensive, and the recycling programs produced a glut of paper, glass and plastic that no one wanted to buy.

So recycling devotees hit on a new solution: if people aren't willing to buy our precious garbage, we'll force them. The Federal Government and dozens of states passed laws that required public agencies, newspapers and other companies to purchase recycled materials. These regulations, along with a wide variety of tax breaks and subsidies, have pushed the national rate of recycling up to Porter's goal of 25 percent -- an expensive achievement, since the programs lose money. But that's still not enough. Environmental groups are pressuring local governments to expand their recycling programs to meet the goals set in law -- goals that, according to the official who helped start the whole movement, are impossible to reach.

"People in New York and other places are tilting at recycling windmills," says Porter, who left the E.P.A. in 1989 and is now president of a consulting firm, the Waste Policy Center in Leesburg, Va. "There aren't many more materials in garbage that are worth recycling." Porter has been advising cities and states to abandon their unrealistic goals, but politicians are terrified of coming out against recycling. How could they explain it to the voters? How could they explain it to their children?

The Evangelist's Alarms

AFTER THE LITTER HUNT IN MISS APONTE'S SCIENCE classroom, it was time for a guest lecturer on garbage. A fifth-grade class was brought in to hear Joanne Dittersdorf, the director of environmental education for the Environmental Action Coalition, a nonprofit group based in New York. Her slide show began with a 19th-century photograph of a street in New York strewn with garbage.

"Why can't we keep throwing out garbage that way?" Dittersdorf asked.

"It'll keep piling up and we won't have any place to put it."

"The earth would be called the Trash Can."

"The garbage will soon, like, take over the whole world and, like, kill everybody."

Dittersdorf asked the children to examine their lives. "Does anyone here ever have takeout food?" A few students confessed, and Dittersdorf gently scolded them. "A lot of garbage there."

She showed a slide illustrating New Yorkers' total annual production of garbage: a pile big enough to fill 15 city blocks to a height of 20 stories. "There are a lot of landfills in New York City," Dittersdorf said, "but we've run out of space." Showing a slide of Flushing Meadows, a former landfill that's now a park, she asked, "Would you want to live on top of one of these landfills?" The place didn't look too bad, actually, but Dittersdorf explained that toxic threats could be hidden in a landfill. "Have you ever heard of a place called Love Canal? It was an old landfill that belonged to a chemical company, and they sold it to build a school on, and everyone who went to that school got very sick. There was poison in the dirt underneath."

A supermarket package of red apples appeared on the screen. "Look at the plastic, the Styrofoam or cardboard underneath," Dittersdorf said. "Do you need this much wrapping when you buy things?"

"Nooooo."

"Every week," Dittersdorf said, "75,000 trees are cut to make the Sunday New York Times." The children were appalled. A few glanced reproachfully at me sitting in the back of the room. I didn't try to justify my -- or your -- role in this weekly tree-slaying, garbage-generating, earth-defiling ritual. The children were in no mood for heresy. Dittersdorf had masterfully reinforced the mythical tenets of the garbage crisis:

We're a wicked throwaway society. Plastic packaging and fast-food containers may seem wasteful, but they actually save resources and reduce trash. The typical household in Mexico City buys fewer packaged goods than an American household, but it produces one-third more garbage, chiefly because Mexicans buy fresh

foods in bulk and throw away large portions that are unused, spoiled or stale. Those apples in Dittersdorf's slide, protected by plastic wrap and foam, are less likely to spoil. The lightweight plastic packaging requires much less energy to manufacture and transport than traditional alternatives like cardboard or paper. Food companies have switched to plastic packaging because they make money by using resources efficiently. A typical McDonald's discards less than two ounces of garbage for each customer served -- less than what's generated by a typical meal at home.

Plastic packaging is routinely criticized because it doesn't decay in landfills, but neither does most other packaging, as William Rathje, an archaeologist at the University of Arizona, has discovered from his excavations of landfills. Rathje found that paper, cardboard and other organic materials -- while technically biodegradable -- tend to remain intact in the airless confines of a landfill. These mummified materials actually use much more landfill space than plastic packaging, which has steadily been getting smaller as manufacturers develop stronger, thinner materials. Juice cartons take up half the landfill space occupied by the glass bottles they replaced; 12 plastic grocery bags fit in the space occupied by one paper bag.

Our garbage will bury us. The Mobro's saga was presented as a grim harbinger of future landfill scarcity, but it actually represented a short-lived scare caused by new environmental regulations. As old municipal dumps were forced to close in the 1980's, towns had to send their garbage elsewhere and pay higher prices for scarce landfill space. But the higher prices, predictably, encouraged companies to open huge new landfills, in some regions creating a glut that set off price-cutting wars. Over the past few years, landfills in the South and Middle West have been vying for garbage from the New York area, and it has become cheaper to ship garbage there than to bury it locally.

America today has a good deal more landfill space available than it did 10 years ago. Landfills are scarce in just a few places, notably the Northeast, partly because of local economic realities (open land is expensive near cities) but mainly because of local politics. Environmentalists have prevented new landfills from opening by propounding another myth. . . .

Our garbage will poison us. By mentioning Love Canal, Dittersdorf made landfills sound like the Slough of Despond, Bunyan's dread swamp. But it's not fair to compare modern municipal-trash landfills with Love Canal, an old industrial dump filled with large concentrations of toxic chemicals that seeped into the ground when a school was, stupidly, built on the site. (Even so, it's not clear that any of the schoolchildren were poisoned. Exhaustive scientific studies around Love Canal haven't detected any increase in cancer rates.)

Today's landfills for municipal trash are filled mostly with innocuous materials like paper, yard waste and construction debris. They contain small amounts of hazardous wastes, like lead and mercury, but studies have found that these poisons stay trapped inside the mass of garbage even in the old, unlined dumps that were built before today's stringent regulations. So there's little reason to worry about modern landfills, which by Federal law must be lined with clay and plastic, equipped with drainage and gas-collection systems, covered daily with soil and monitored regularly for underground leaks.

The small-time operators who ran the old municipal dumps can't afford to provide these safeguards, which is why corporations have moved in, opening huge facilities that might serve half a state, typically in a rural area with few neighbors. It's a prudent environmental strategy and it provides jobs for rural communities, which is why some of them have been competing to attract new landfills. But the availability of landfill space in the countryside has created an awkward situation for cities committed to more expensive alternatives like recycling programs and incinerators. Environmentalists have responded with a mythical imperative. . . .

We must achieve garbage independence. When Dittersdorf told the children that New York City was running out of landfill space, she was technically right. Mayor Giuliani and Governor Pataki have promised Staten Island that its municipal landfill will close in five years, and there's no logical place in town to put a new one. But why should the city have to use a local landfill? Why assume that New Yorkers have a moral obligation to dispose of their garbage near home? Most of the stuff was shipped to the city from factories and farms elsewhere. What's wrong with shipping it back out to be buried in places with open land?

"I don't understand why anyone thinks New York City has a garbage crisis because it can't handle all its own waste," says James DeLong, an adjunct scholar at the Competitive Enterprise Institute in Washington. "With that kind of logic, you'd have to conclude that New York City has a food crisis because it can't grow all the vegetables its people need within the city limits, so it should turn Central Park into a farm and ration New Yorkers' consumption of vegetables to what they can grow there." Some politicians in other states have threatened to stop the importing of New York's garbage -- it's an easy way to appeal to some voters' chauvinism -- but in the unlikely event that they succeeded, they would only be depriving their own constituents of jobs and tax revenue.

We're cursing future generations with our waste. Dittersdorf's slide showing New Yorkers' annual garbage output -- 15 square blocks, 20 stories high -- looked frightening because the trash was sitting, uncompressed, in the middle of the city. But consider a different perspective -- a national, long-term perspective. A. Clark Wiseman, an economist at Gonzaga University in Spokane, Wash., has calculated that if Americans keep generating garbage at current rates for 1,000 years, and if all their garbage is put in a landfill 100 yards deep, by the year 3000 this national garbage heap will fill a square piece of land 35 miles on each side.

This doesn't seem a huge imposition in a country the size of America. The garbage would occupy only 5 percent of the area needed for the national array of solar panels proposed by environmentalists. The millennial landfill would fit on one-tenth of 1 percent of the range land now available for grazing in the continental United States. And if it still pains you to think of depriving posterity of that 35-mile square, remember that the loss will be only temporary. Eventually, like previous landfills, the mounds of trash will be covered with grass and become a minuscule addition to the nation's 150,000 square miles of parkland.

We're squandering irreplaceable natural resources. Yes, a lot of trees have been cut down to make today's newspaper. But even more trees will probably be planted in their place. America's supply of timber has been increasing for decades, and the nation's forests have three times more wood today than in 1920. "We're not running out of wood, so why do we worry so much about recycling paper?" asks Jerry Taylor, the director of natural resource studies at the Cato Institute. "Paper is an agricultural product, made from trees grown specifically for paper production. Acting to conserve trees by recycling paper is like acting to conserve cornstalks by cutting back on corn consumption."

Some resources, of course, don't grow back, and it may seem prudent to worry about depleting the earth's finite stores of metals and fossil fuels. It certainly seemed so during the oil shortages of the 1970's, when the modern recycling philosophy developed. But the oil scare was temporary, just like all previous scares about resource shortages. The costs of natural resources, both renewable and nonrenewable, have been declining for thousands of years. They've become less scarce over time because humans have continually found new supplies or devised new technologies. Fifty years ago, for instance, tin and copper were said to be in danger of depletion, and conservationists urged mandatory recycling and rationing of these vital metals so that future generations wouldn't be deprived of food containers and telephone wires. But today tin and copper are cheaper than ever. Most food containers don't use any tin. Phone calls travel through fiber-optic cables of glass, which is made from sand -- and should the world ever run out of sand, we could dispense with wires altogether by using cellular phones.

The only resource that has been getting consistently more expensive is human time: the cost of labor has been rising for centuries. An hour of labor today buys a larger quantity of energy or raw materials than ever before. To economists, it's wasteful to expend human labor to save raw materials that are cheap today and will probably be cheaper tomorrow. Even the Worldwatch Institute, an environmental group that strongly favors recycling and has often issued warnings about

the earth's dwindling resources, has been persuaded that there are no foreseeable shortages of most minerals. "In retrospect," a Worldwatch report notes, "the question of scarcity may never have been the most important one."

It is better to recycle than to throw away. This is the most enduring myth, the one that remains popular even among those who don't believe in the garbage crisis anymore. By now, many experts and public officials acknowledge that America could simply bury its garbage, but they object to this option because it diverts trash from recycling programs. Recycling, which was originally justified as the only solution to a desperate national problem, has become a goal in itself -- a goal so important that we must preserve the original problem. It's as if the protagonist of "Pilgrim's Progress," upon being informed that he could drop his sinful burden right there on the road, insisted on clinging to it just so he could continue the pilgrimage to get rid of it.

Why is it better to recycle? The usual justifications are that it saves money and protects the environment. These sound reasonable until you actually start handling garbage.

The Muckrakers' Discoveries

The 1992 Plan projected that the City would realize net savings from recycling. The Department's experience to date in implementing the recycling program diverges from the assumptions of the Plan.

-- 1996 Comprehensive Solid Waste Management Plan of the New York City Department of Sanitation.

EVERY TIME A SANITATION DEPARTMENT CREW PICKS UP A load of bottles and cans from the curb, New York City loses money. The recycling program consumes resources. It requires extra administrators and a continual public relations campaign explaining what to do with dozens of different products -- recycle milk jugs but not milk cartons, index cards but not construction paper. (Most New Yorkers still don't know the rules.) It requires enforcement agents to inspect garbage and issue tickets. Most of all, it requires extra collection crews and trucks. Collecting a ton of recyclable items is three times more expensive than collecting a ton of garbage because the crews pick up less material at each stop. For every ton of glass, plastic and metal that the truck delivers to a private recycler, the city currently spends \$200 more than it would spend to bury the material in a landfill.

Officials hoped to recover this extra cost by selling the material, but the market price of a ton has never been anywhere near \$200. In fact, it has rarely risen as high as zero. Private recyclers usually demand a fee because their processing costs exceed the eventual sales price of the recycled materials. So the city, having already lost \$200 collecting the ton of material, typically has to pay another \$40 to get rid of it.

The recycling program has been costing \$50 million to \$100 million annually, and that's just the money coming directly out of the municipal budget. There's also the labor involved: the garbage-sorting that millions of New Yorkers do at home every week. How much would the city have to spend if it couldn't rely on forced labor? True, some people would probably be glad to do the work for free because they regard garbage-sorting as a morally uplifting activity for the whole family. But many others have refused to follow the law. They seem to have a more traditional view of garbage-sorting: an activity done only for money, and then only by the most destitute members of society.

I tried to estimate the value of New Yorkers' garbage-sorting by financing an experiment by a neutral observer (a Columbia University student with no strong feelings about recycling). He kept a record of the work he did during one week complying with New York's recycling laws. It took him eight minutes during the week to sort, rinse and deliver four pounds of cans and bottles to the basement of his building. If the city paid for that work at a typical janitorial wage (\$12 per hour), it would pay \$792 in home labor costs for each ton of cans and bottles collected. And what about the extra space occupied by that recycling receptacle in the kitchen? It must take up at least a square foot, which in New York costs at least \$4 a week to rent. If the city had to pay for this space, the cost per ton of recyclables would be about \$2,000. That figure plus the home labor costs, added to what the city already spends on its collection program, totals more than \$3,000 for a ton of scrap metal, glass and plastic. For that price, you could find a one-ton collection of those materials at a used-car lot -- a Toyota Tercel, for instance -- and drive home in it.

LAST YEAR, A SURGE in the market price for recycled materials prompted a spate of recycling-has-finally-arrived articles. At one point, New York was selling its old newspapers for \$150 per ton, which was almost enough to offset the extra costs of the paper recycling program. But newsprint prices have since plummeted back to familiar levels; New York is once again paying recyclers to take its newspapers, and city officials are resigned to losing money on recycling. As a result of a lawsuit by City Council members and the Natural Resources Defense Council, the city has been under court order to collect increasing amounts of recyclable material to meet goals set in law. City officials have promised to comply by expanding the recycling program and promoting a separate program in the public schools, but they've been stalling because they don't want to increase the budget deficit.

Officials in some cities claim that curbside recycling programs are cheaper than burying the garbage in a landfill, which can be true in places where the landfill fees are high and the collection costs aren't as exorbitant as in New York. But officials who claim that recycling programs save money often don't fully account for the costs. "A lot of programs, especially in the early years, have used funny-money economics to justify recycling," says Chaz Miller, a contributing editor for Recycling Times, a trade newspaper. "There's been a messianic zeal that's hurt the cause. The American public loves recycling, but we have to do it efficiently. It should be a business, not a religion."

Recycling programs didn't fare well in a Federally financed study conducted by the the Solid Waste Association of North America, a trade association for municipal waste-management officials. The study painstakingly analyzed costs in six communities (Minneapolis; Palm Beach, Fla.; Seattle; Scottsdale, Ariz; Sevierville, Tenn., and Springfield, Mass.). It found that all but one of the curbside recycling programs, and all the composting operations and waste-to-energy incinerators, increased the cost of waste disposal. (The exception was Seattle's curbside program, which was slightly cheaper -- by one-tenth of 1 percent -- than putting the garbage in a landfill.) Studies in European cities have reached similar conclusions. Recycling has been notoriously unprofitable in Germany, whose national program is even less efficient than New York's.

"We have to recognize that recycling costs money," says William Franklin, an engineer who has conducted a national study of recycling costs for the not-for-profit group Keep America Beautiful. He estimates that, at today's prices, a curbside recycling program typically adds 15 percent to the costs of waste disposal -- and more if communities get too ambitious.

Franklin and other researchers have concluded that recycling does at least save energy -- the extra fuel burned while picking up recyclables is more than offset by the energy savings from manufacturing less virgin paper, glass and metal. "The net result of recycling is lower energy consumption and lower releases of air and water pollutants," says Richard Denison, a senior scientist at the Environmental Defense Fund, which has calculated the ecological benefits of recycling. But there are much more direct -- and cheaper -- ways to reduce pollution. Recycling is a messy way to try to help the environment. Consider a few questions whose answers would seem obvious to the environmentally aware:

Does a 5-cent deposit on a soft-drink can help the environment? Mandatory deposits encourage recycling and reduce litter, but these programs typically spend \$500 for every ton of cans and bottles collected, which makes curbside recycling look like a bargain. States without mandatory deposits -- like Texas and

Washington -- have proven that the most efficient way to reduce litter is to hire clean-up crews, which pick up a lot more than just bottles and cans. Recycling takes money that could be used for other clean-up efforts: when New York's Sanitation Department started its recycling program, it cut back on street cleaning.

Are reusable cups and plates better than disposables? A ceramic mug may seem a more virtuous choice than a cup made of polystyrene, the foam banned by ecologically conscious local governments. But it takes much more energy to manufacture the mug, and then each washing consumes more energy (not to mention water). According to calculations by Martin Hocking, a chemist at the University of Victoria in British Columbia, you would have to use the mug 1,000 times before its energy-consumption-per-use is equal to the cup. (If the mug breaks after your 900th coffee, you would have been better off using 900 polystyrene cups.) A more immediate environmental impact has been demonstrated by studies in restaurants: the average number of bacterial organisms on reusable cups, plates and flatware is 200 times greater than on disposable ones.

Should you recycle today's newspaper? Saving a tree is a mixed blessing. When there's less demand for virgin wood pulp, timber companies are likely to sell some of their tree farms -- maybe to condominium developers. Less virgin pulp means less pollution at paper mills in timber country, but recycling operations create pollution in areas where more people are affected: fumes and noise from collection trucks, solid waste and sludge from the mills that remove ink and turn the paper into pulp. Recycling newsprint actually creates more water pollution than making new paper: for each ton of recycled newsprint that's produced, an extra 5,000 gallons of waste water are discharged.

Cost-benefit analyses for individual products become so confusing that even ardent environmentalists give up. After years of studies and debates about the environmental merits of cloth versus disposable diapers, some environmental organizations finally decided they couldn't decide; parents were advised to choose whichever they wanted. This sensible advice ought to be extended to other products. It would not only make life simpler for everyone, but would probably benefit the environment. When consumers follow their preferences, they are guided by the simplest, and often the best, measure of a product's environmental impact: its price.

Polystyrene cups are cheap because they require so little energy and material to manufacture -- without reading a chemist's analysis, you could deduce from the cup's low price that it's an efficient use of natural resources. Similarly, the prices paid for scrap materials are a measure of their environmental value as recyclables. Scrap aluminum fetches a high price because recycling it consumes so much less energy than manufacturing new aluminum. The low price paid for scrap tinted glass tells you that you won't be conserving valuable resources by recycling it. While price is hardly a perfect measure of environmental impact, especially in countries where manufacturers are free to pollute, an American product's price usually reflects the cost of complying with strict environmental regulations. It's generally a more reliable guide than intuitive moral judgments or abstract theories about what's good for the planet.

A theorist could logically argue that you have an obligation to recycle not just the paper in this magazine but also the staples. As a nonrenewable resource, isn't the steel theoretically even more precious than the paper? Shouldn't you take each staple to a scrap-metal dealer or, better yet, reuse it in your own stapler? But if you look at the low price of new staples -- and the fact that scrap dealers aren't scurrying to buy used staples -- you can see that it's a waste of time to worry about posterity running out of staples. Recycling devotees have too often ignored such signals, preferring programs based on rules instead of prices, and they've hurt their own cause. They've missed the obvious solution to America's garbage problems -- a solution they should have recognized from one of their seminal ecological texts.

The Tragedy Of the Dump

THE PHILOSOPHICAL underpinning of the modern environmental movement can be found in "The Tragedy of the Commons," a 1968 essay by the ecologist Garrett Hardin. It is a parable about a village's public pasture, the commons, that is open free of charge to everyone's cattle. Because no villager has a personal incentive to restrict the size of his herd, the herds keep growing, and eventually their overgrazing destroys the commons. The parable is a useful model for the many environmental problems in which the common good is damaged by individuals acting out of rational self-interest (like overfishing of the oceans or pollution of the atmosphere). It applies nicely to the garbage situation in the many communities where a free town dump has historically been treated as a commons.

There are two ways to avert the Tragedy of the Commons, as Hardin's essay explains. The first is to convert the commons to private property, dividing up the land so that every herdsman owns a piece of pasture and has a personal incentive not to destroy it. The second is to make rules limiting the number of cattle on the commons. This approach, government regulation, is the most obvious solution to some complex environmental problems, especially ones involving global commons like the oceans or the atmosphere. But garbage is not one of these complex problems.

The Tragedy of the Dump is a simple problem better resolved with the first approach: private responsibility. Your trash is already your private property. You should be responsible for getting rid of it. You should have to pay to get rid of it -- and you should pay whatever price it takes to insure that your garbage doesn't cause environmental problems for anyone else. Paying for residential garbage collection sounds like a radical idea in New York and other cities where these costs are hidden in property taxes, but it's already being done in thousands of communities, including cities like Minneapolis, San Francisco and Seattle. It's also standard practice for commercial establishments in New York and elsewhere. Some cities charge according to volume -- the number of bags or cans that you fill -- and some have begun experimenting with charging by the pound.

Once people switch to this pay-as-you-throw system, they throw away less -- typically at least 10 to 15 percent less. Some shop differently; some take their names off junk-mail lists; some recycle. Instead of following (or ignoring) arcane rules and targets set by politicians, they're personally motivated to figure out what's worth paying to discard and what's worth diverting to a recycling bin. Those who want to recycle for spiritual reasons can do so; others can recycle whatever makes economic sense to them. If the pay-as-you-throw system became common everywhere, there would be no need for recycling laws and goals and moral exhortations. "In a purely market-driven situation, people would still recycle according to what makes sense in their area," says Lynn Scarlett, the vice president of research at the Reason Foundation, which has studied pay-as-you-throw systems. "In most places it would pay to recycle aluminum cans, corrugated cardboard and office paper. A lot of newspapers and some clear glass would be recycled. But people wouldn't meet the high targets set by laws. They wouldn't bother with some of the things being mandated today, like mixed paper and certain plastics."

Environmentalists don't necessarily oppose free-market reforms for garbage -- they've supported some pay-as-you-throw systems -- but they spend much of their energy crusading for government recycling programs and regulations. They have instinctively chosen Hardin's second solution. This is partly because of their ideology -- many environmentalists trust government regulations more than market forces -- but there's also another reason. The leaders of the recycling movement derive psychic and financial rewards from recycling. Environmental groups raise money and attract new members through their campaigns to outlaw "waste" and prevent landfills from opening. They get financing from public and private sources (including the recycling industry) to research and promote recycling. By turning garbage into a political issue, environmentalists have created jobs for themselves as lawyers, lobbyists, researchers, educators and moral guardians. Environmentalists may genuinely believe they're helping the earth, but they have been hurting the common good while profiting personally, just like the village's herdsmen. This is the real Tragedy of the Dump: the waste of public funds on recycling programs, the needless public alarm about landfills.

Fortunately, though, not every community has been afflicted. For those seeking the truth about garbage, there's a mountain 300 miles south of New York that's

worth a pilgrimage.

The Celestial City Glimpsed at Long Last

THE MOST SENSIBLE comment I've heard on the subject of garbage was uttered by Linny Miles as we were looking at a mountain of it near his farm. Miles grows wheat and raises Thoroughbreds in Charles City County, Va., which has 6,000 residents and one stoplight. Next to his farm, 20 miles southeast of Richmond, is a landfill that accepts 4,000 tons of trash a day, much of it from the New York area. Private carters deliver trash from Manhattan restaurants; sealed rail cars bring municipal waste from suburban New Jersey.

The trash is surprisingly hard to spot. I got lost on the way to the landfill and drove around the perimeter of the wooded property without realizing there was garbage hidden back there. I finally got a view of it from Miles's house, which sits on a rise 200 yards from the edge of the landfill's property. He pointed to a brown ridge rising above the pine trees. The ridge was maybe 75 yards high, and the lower slopes were already covered with grass. Miles said he was occasionally bothered by odors and noise from the unloading operations, but overall he thought the landfill was good for the county. When I asked if he objected to New Yorkers using Charles City as a dumping ground, Miles shook his head and explained his reasoning in one sentence: "They brought something to the party."

Ten years ago, Charles City County had much in common with New York today. It had no money to fix its decrepit schools. Its economy was stagnant, its tax rate was among the state's highest and it was being ordered to shut down its old dump. Now, thanks to its new landfill, the county has lower taxes, better-paid teachers and splendid schools. The landfill's private operator, the Chambers Development Company, pays Charles City County fees totaling \$3 million a year -- as much as the county takes in from all its property taxes. The landfill has created jobs, as have the new businesses that were attracted by the lower taxes and new schools. The 80-acre public-school campus has three buildings with central air conditioning and fiber-optic cabling. The library has 10,000 books, laser disks and CD-ROM's; every classroom in the elementary school has a telephone and a computer. The new auditorium has been used by visiting orchestras and dance companies, which previously had no place to perform in the county.

If you are heavy with garbage and guilt, Charles City is the place to lay down your burden. There you can see garbage the way Linny Miles regards it: not as a moral issue but as an economic commodity. New Yorkers get rid of their garbage cheaply; Charles City's children get new schools. Why should New Yorkers spend extra money to recycle so they can avoid this mutually beneficial transaction? Why make harried parents feel guilty about takeout food? Why train children to be garbage-sorters? Why force the Bridges school to spend money on a recycling program when it still doesn't have a computer in the science classroom?

Several weeks after Dittersdorf's lecture there, I told her about Charles City's schools and asked if recycling needed to be so important to New Yorkers' education.

"I wish we spent more money on other things in the schools here," Dittersdorf said, "and I don't think recycling has a higher priority than things like computers or art classes. But I'd put it equal. Sure, kids should have time for other things, for reading and writing and dreaming. But recycling can be a wonderful project for kids and parents to do together. It inspires creative work and teaches valuable lessons."

Maybe she's right. Maybe parents and children correctly see the intangible value of recycling lessons. But as children pursue their moral education, as they learn to ponder the fate of the earth, it wouldn't hurt for them to also study, once again, that recycling scene in "Pilgrim's Progress." If Bunyan were an administrator in today's schools, he might call it a lesson in prioritizing. The thrifty muckraker, intent on his compost pile, doesn't notice a figure hovering overhead, offering to trade him a golden celestial crown for his rake. This scene is observed by the pilgrim, who consults a helpful guide named the Interpreter.

"This is a figure of a man of this world, is it not, good sir?" the pilgrim asks.

"Thou hast said the right," the Interpreter replies, "and his muck-rake doth show his carnal mind." The Interpreter points out the waste on the ground and sadly explains that, for the muckraker, "Things here are counted the only things substantial." The muckraker has forgotten that there is more to life than hoarding natural resources. His recycling has become the most primitive form of materialism: the worship of materials.

"Earthly things, when they are with power upon men's minds, quite carry their hearts away from God," the Interpreter says. The pilgrim cries out in horror.

"O! deliver me from this muck-rake."

