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ARTICLE

Waste in the Inner City: asset or assault?[1]

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ABSTRACT *In an unequal society, undesirable wastes often end up in the poorest and least powerful communities, becoming part of the economic and environmental milieu of the inner city. Two contradictory responses to waste reflect contrasting theoretical paradigms. Some wastes can become assets in local economic development, creating incomes through scavenging, industrial jobs in recycling plants or new businesses using locally available materials. Other wastes are an assault on the community that receives them; toxic wastes, polluting facilities and industrial by-products often create local health hazards rather than development. Waste as an asset is consistent with the free market model of economics. The inner city, 'endowed' with waste materials and low-wage labour, has a comparative advantage in labour-intensive processing of materials that the rest of society has discarded. Waste as an assault on the community is consistent with a different model of environmental risk. Some by-products of industry are so hazardous that they should not be produced, or should be tightly regulated. Each model has a realm of validity; the balance between the two depends on which wastes are hazardous, and which are just ugly resources waiting to be discovered.*

What should low-income neighbourhoods do with the one material resource which they possess in abundance, namely society's wastes? Two opposite answers are at times presented as part of the same strategy of sustainable community development. Some wastes are the basis for a business, adding value to discarded materials. Other wastes are the cause for a crusade, demanding environmental justice for the impacted areas. When does a community view other people's wastes as an asset, and when does it experience waste as an assault?

In an unequal society, there is little mystery about the reasons why undesirable wastes so often end up in the poorest and least powerful communities. Minorities and low-income communities may be just as concerned as anyone else about environmental protection, as suggested by public opinion polls (Ringquist, 1999). But their ability to achieve local environmental objectives is limited by their relative position in society. As long as powerful companies and communi-

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ties seek to externalise their environmental impacts, wastes will end up in remote rural areas and in the least fashionable urban neighbourhoods.

This flow of waste, running downhill along the power gradients of society, will continue for the foreseeable future. For better or, often, for worse, it is part of what economists would call the 'resource endowment' of low-income communities. While physical and financial capital, most raw materials and many categories of formally trained or skilled labour are scarce in the inner city, waste is abundant, as are many categories of labour lacking formal training or skills.

Of the two images, waste as an assault on the community is more familiar in discussions of environmental justice. Therefore, we will begin with the unusual notion of waste as an asset.

Cash from Trash

The sight is a common one in the US 'bottle bill' states, where deposits make empty beer and soft drink containers valuable. Someone methodically sifts through public litter bins or kerbside recycling bins, pulling out the beverage cans and bottles that can be redeemed for cash. From the perspective of sustainable community development, is this a problem or a solution?

We can safely ignore the superficial (and generally inaccurate) complaints about litter created or left behind by scavengers. Another possible problem is that removing beer and soft drink containers from recycling bins may deprive municipal recycling programmes of much-needed revenue. This concern is genuine but easily exaggerated. Despite the efforts of scavengers, substantial numbers of deposit containers remain in kerbside bins and are collected for recycling. A Californian innovation, crediting recycling programmes with the deposits on the estimated number of containers they receive, could eliminate the potential conflict between recycling and deposit laws (Ackerman, 1997).

A further problem may speak more directly to what is troubling about scavenging: the fact that some people find it worthwhile to collect bottles and cans out of other people's rubbish underscores the extraordinary economic inequality of our society. Until we succeed in eliminating that inequality, however, the activities of scavengers will continue—and must be viewed as environmentally beneficial. Beverage container deposit laws, among other effects, direct the energies of some poor people into cleaning up roads, parks, beaches and other public spaces, and recovering valuable materials for recycling.

In more general terms, waste as an asset is consistent with the free market model of economics. In that model, nations or communities endowed with different resources find it advantageous to produce different products. Low-income areas, so amply 'endowed' with waste materials and with low-wage labour, have a comparative advantage in labour-intensive processing of materials that the rest of society has discarded.

Although urban waste has not always been viewed as an asset in recent policy debates, the idea has a long history. Strasser (1999) describes the painstaking reuse of ordinary materials in 19th and early 20th century US household life, when scavenging and resale of scrap were far more widespread than today.

Gandy (1994) provides a related, comparative perspective on the evolution of urban waste management, and Miller (2000) traces the intricate history of schemes to profit from New York City's waste over the years. Yet higher wages have rendered these activities less attractive in the mainstream economy of industrialised countries today. As wages have risen relative to the price of raw materials, the incentive to hoard, recover and reuse materials has steadily declined (Ackerman, 1997).

Imagine a spectrum of environmentally desirable activities, ranked according to the wage rates at which they are profitable. Some are profitable even at high wages, and will therefore occur in the mainstream of the economy. Others are profitable only at low wages, and are therefore available niches that can be filled by workers and businesses from low-income communities.

On a global scale, an extreme example can be seen in the 'shipbreaking' industry that recycles big ocean-going ships when they are taken out of service. Some of them, as recorded in the vivid photographs of Salgado (1993), are beached in Bangladesh, where workers using only simple manual tools disassemble them and recover large quantities of scrap metal. Viewed from a society where power tools and machinery are taken for granted, the work appears to be back-breaking and inefficient. Yet if labour is cheap enough and machinery scarce enough, this could be a profitable way to disassemble old ships. Do workers in Bangladesh have better-paid alternatives?

There is a broad range of waste-based occupations, which can be arranged in order of increasing capital and skill requirements. Most are environmentally beneficial; problems occur at the bottom of the range (the domain of individual scavengers) and at the top (in capital-intensive, technologically complex waste-processing industries).

Starting at the bottom, the most problematic waste-based occupation, landfill scavenging, is no longer found in the USA, but is well documented both in US history and in developing countries today. When inequalities are great enough and those at the bottom are poor enough, some people will end up working on active landfills in order to glean valuable materials from the freshly dumped waste as it arrives. A Winslow Homer etching from 1859 depicts rag pickers working in a dump in Boston's Back Bay (Rathje & Murphy, 1992). In the late 19th century, when New York City and other coastal communities relied on ocean dumping of waste, 'scow trimmers' rode on the rubbish barges, or scows, and continued sorting the refuse up to the last moment (Melosi, 1981). The disastrous public health implications of such jobs should be obvious.

Landfill scavenging has vanished from the USA today, though in at least one case it has moved just across the border. A study in the twin cities of Laredo, Texas and Nuevo Laredo, Mexico found that many Mexicans made a living collecting aluminium cans on both sides of the border (Medina, 1998). Aluminium scavengers working at the landfill in Nuevo Laredo earned more than those on the streets of Laredo, because the much larger waste stream allowed them to collect more cans per hour. On average, the study found that landfill scavengers earned more than twice the official Mexican minimum wage, while street scavengers earned less than the minimum wage.

When scavenging moves off the landfill and into the streets, incomes may decline but public health is sure to improve. Beyond individual scavenging, there are many small repair businesses and second-hand stores that bring used goods back to life, often selling things that would simply be discarded and replaced in more affluent neighbourhoods. There are few environmental problems here, and there are obvious benefits to reusing rather than discarding material goods.

Viewed in a static framework, this point has bleak implications: poverty and inequality lead, in this case, to environmentally desirable behaviour that wealthier communities cannot be bothered with. In a dynamic context, the same story can convey a happier message: there are opportunities for environmentally sound economic development that are open to low-income communities.

Building Waste-based Businesses

In some cases, environmental advocates have created new waste-based enterprises. Consider one of the numerous businesses that recovers and recycles construction and demolition debris. Garbage Reincarnation, located in Santa Rosa, California, is an organisation committed to finding innovative uses for rubbish. It has created a 'Recycletown' sales yard, with buildings constructed out of recycled materials, which is used to sell salvaged building materials such as lumber, wire and fixtures. Its business arm, Beyond Waste, supplies the recycled materials by deconstructing buildings to maximise reuse of structural components. In a recent job for the City of Hayward, California, Beyond Waste removed a roof of a reservoir building, bidding US$12 000 lower than the nearest competitor, and salvaging more than 8000 m, or 45 tonnes, of old-growth Douglas fir (www.garbage.org, www.sonic.net/~precycle).

The Institute for Local Self-Reliance (ILSR), based in Washington, DC, advocates the creation of businesses like Beyond Waste as a cornerstone of community economic development. It has developed a commercial paradigm that goes beyond collection of recyclables by bringing manufacturing into the community to make the finished product. Working with city governments, community organisations and private businesses it has helped to establish more than 15 recycling-based businesses with over 250 employees and US$20 million in new investment in low-income and working class communities. The ILSR has worked in Washington, Baltimore, Cleveland, Philadelphia, Gary, Evansville, Chattanooga and Los Angeles, establishing recycling programmes where none existed, and then building partnerships to establish sound businesses that provide jobs and investment in the urban core (www.ilsr.org).

Another group of waste-based businesses, clearly products of the recent interest in recycling, are the material exchanges, described by Andrews (2001) (in this issue, pp. 149–168).

Not all waste-based businesses, though, are created by environmentalists. Scrap yards have traditionally recycled large quantities of steel and other metals. Every year, millions of cars and appliances reach the end of their useful life, yet comparatively few of them end up rusting on roadsides, in fields and yards, or in landfills. In fact, scrap yards recycled more than 13 million cars and 39

million appliances in 1999, achieving recycling rates of 91% for cars and 77% for appliances—far above kerbside recycling rates (www.recycle-steel.org).

As the example of scrap yards suggests, there is no sharp line between waste-based businesses and the industrial economy as a whole. Indeed, scrap processors have become sophisticated, complex manufacturing facilities capable of preparing and grading huge quantities of inventory to the specifications of industrial consumers. The US Environmental Protection Agency's Jobs Through Recycling programme estimates that industries related to recycling create one million manufacturing jobs and US$100 billion in revenue.

A final example, at the interface between waste-based community development and large-scale industry, reveals both the promise and the problems of recycling enterprises.

Recycling facilities may seem like innovative economic tools for community advancement, as in the well publicised proposal for a paper recycling plant in the Bronx. But despite community involvement, sensitivity to local needs and careful planning, such ideas can inadvertently become an additional burden on the community. In 1992, the Natural Resources Defense Council teamed up with a Bronx community development corporation, Banana Kelly Civic Improvement Association, to bring a paper recycling facility to the south Bronx. This partnership was designed to demonstrate that the environmental movement was sensitive to the needs of low-income communities, and to create an environmentally friendly paper-making facility in an area that has suffered from the loss of blue-collar jobs.

The plant was intended to use the cleanest technology to recycle office waste paper from New York City and make high-grade paper for newspapers and magazines. It was met with community opposition because the facility would increase air pollution in an already burdened community, and because many people viewed the project as a waste transfer station disguised as economic development (Colon, 1999). The jobs it provided would have been limited and low-skilled. As environmental justice advocates rightfully assert, communities should not have to be poisoned to get economic improvements; and no amount of money can buy self-respect. Ultimately, the conflict with the community, as well as the low and fluctuating price of recycled paper, contributed to the cancellation of the project (see Forero (2000) on cancellation, and Ackerman & Gallagher (2001) on the price of recycled paper).

Rounding up the Usual Suspects

Consider, then, the alternative perspective, of waste as an assault on a low-income community. (It is presented more briefly here, not because it is less important, but because it is more familiar.) Waste pollutes the neighbourhood, contaminates the water, fouls the air, clogs the streets with wast-disposal trucks and lowers property values. Toxic materials, sometimes dumped illegally to avoid legitimate disposal costs, create acute local health hazards. Even 'legitimate' disposal of hazardous waste in the inner city can both degrade the physical environment and worsen public health. The working poor are more

likely to be unprotected by health care insurance, to suffer more from diseases induced or aggravated by toxic materials and to spend higher proportions of their income on medical and health care as compared with more affluent groups.

Disposal of hazardous waste does not create economic development or waste-based businesses that benefit the host neighbourhood. Instead, it is universally seen as an assault on the community, and frequently results in a legal challenge. Communities have resorted to a variety of rules and tools at their disposal, and, in a number of cases, have succeeded in blocking unwanted facilities.

Charges of environmental racism have been particularly effective, highlighting the far from random distribution of the least desirable facilities. In fact, it was protest against a toxic waste landfill in a predominantly African American community in Warren County, North Carolina that galvanised the environmental justice movement in 1982. Although the community was unable to prevent the landfill from opening, it gained media attention from the imprisonment of over 400 protestors. The problem was not unique to that county: a 1987 report commissioned by the United Church of Christ, entitled 'Toxic wastes and race', found that race was the most prominent factor in determining the location of a commercial hazardous waste facility (Commission for Racial Justice, 1987).

Fierce debate continues, however, on the causal mechanisms that have led to the existing pattern of concentration of hazardous facilities. Some, such as Mitchell *et al.* (1999) and Collin (1992), provide insights (empirical and legal, respectively) into the difficulty of demonstrating environmental racism; they suggest that much inequity is the result of simple housing market dynamics while the remainder fails to meet the high legal standards required to prove 'racist intent'. Others, such as Goldman (1993, p. 21), argue that:

> … some disproportionate impacts may result from a combination of market forces, residential mobility, and housing discrimination: others may be due to regulatory decisions based on a set of physical and demographic criteria that have unintentional distributional consequences; and others still may be the consequence of an individual decision maker or group of decision makers with certain personal attitudes who skillfully work siting and other decision making processes to yield fully intentional discriminatory outcomes.

Whatever the ultimate cause may be, the fact remains that inner city communities across the country have toxic waste sites in their backyards. South central Los Angeles, an area of 1 square mile saturated with abandoned toxic waste sites, freeways, smokestacks and wastewater pipes, has been described as the dirtiest zip code (90058) in California (Bullard, 1993). In south Chicago, Illinois, state officials became more receptive to the residents' complaints when, during an inspection of one noxious waste lagoon, the boat carrying the state environmental inspectors began to disintegrate beneath them (Ringquist, 1999).

While the environmental justice movement continues to oppose discriminatory facilities, it is also employing the precautionary principle to prevent further degradation from occurring. This shift is embodied in the Ten Principles of

Environmental Justice established at the People of Color Leadership Summit on the Environment in Washington, DC in 1991. Furthermore, President Clinton's Executive Order 12898, adopted in February 1994, also addresses environmental discrimination, though it is more a covenant than a legally binding document. Finally, the environmental justice movement has also helped establish the National Environmental Justice Advisory Council.

In addition to these national milestones, local progress is being made as well. New York City has developed a 'fair share' model, to ensure that each of the five boroughs bears its fair share of noxious facilities. Chicago now assesses the demographic make-up of proposed host neighbourhoods for waste sites, and evaluates the cumulative impact a new facility would have on existing environmental burdens (Bullard, 1993). But it remains to be seen how these policies will work in practice.

What's the Difference?

In discussing waste as an assault on inner city communities, we have entered a different realm of environmental discourse, the world of Woburn and Love Canal, of Bhopal and Erin Brokovich. Scavenging hazardous waste is not a benign way to make a living. Businesses based on toxic waste should not be run on a small, grass-roots basis; they require capital, skill and complex environmental controls to avoid harming workers and communities. In the absence of those (expensive) additional inputs, hazardous wastes remain an assault on the communities where they are found. Indeed, a comprehensive strategy for sustainable community development must distinguish between wastes that are assets and wastes that are assaults, between waste-based opportunities and waste-related dangers.

What accounts for the difference between these two faces of waste? Most obviously, things described as waste vary immensely in toxicity. Some are intensely hazardous and should only be handled with sophisticated technical precautions and protections; others can reasonably be seen as merely ugly resources waiting to be exploited. Unfortunately, the identification of hazardous wastes, and hence the separation of wastes into these two categories, can itself be a task requiring technical expertise. Familiar categories of municipal waste and construction debris are generally safe to handle with modest precautions, but no such presumption can be made about chemical wastes and other industrial by-products.

A subtler distinction can also be drawn. Most of the hazards associated with waste in the inner city are caused by processing and disposal facilities. The chemical transformations that occur in these facilities may create new hazards, in addition to any that were present in the incoming feedstock. In contrast, many of the benign opportunities for waste-based occupations and businesses involve only sorting, repair, assembly/disassembly and similar processes that cause minimal emissions. When waste-based businesses reach a level of material processing that generates significant emissions, as with the proposed south Bronx recycled paper mill, they too face community opposition.

Conclusion

In conclusion, there are three waste-related requirements for sustainable community development. First, it is important to identify hazardous wastes and processes, and to insist on regulation that prevents them from harming residential neighbourhoods. The environmental justice movement rightly objects that hazards are disproportionately located in poor and minority areas; many of these hazards should not be located anywhere, but should be replaced by cleaner, safer materials and processes. Second, waste-based enterprises with significant emissions, such as recycled paper mills, should generally not be located in residential areas, and should be subject to the same pollution controls as other industries. Finally, low-income communities should welcome the opportunity to create low-emission businesses and jobs based on the non-hazardous wastes which they so often possess in abundance.

Note

[1] An earlier version of this paper was presented at 'Towards sustainability: social and environmental justice', the annual conference of the UK Royal Geographical Society/Planning and Environment Research Group, at Tufts University, June 2000.

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