

**RECYCLING VS. REMANUFACTURING:
REDISTRIBUTIVE REALITIES**

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ABSTRACT

This paper contrasts two models of "recycling": re-use and remanufacturing. I argue that the adoption by American government bodies of remanufacturing ignores many of the socially-progressive and ecologically-benign features of re-use activities, including both *social re-use* and *market re-use*. Both these forms of re-use involve more labor-intensive relations of production, with broader use-value considerations of institutional and individual actors and more limited exchange-value considerations (especially for social re-use). The use-value model is more diffused through lower-income U.S., European and third-world societies. Recent U.S. policies favoring recycling, in contrast, have been heavily associated with capital-intensive remanufacturing relationships of production. In part, this reflects the dissonance between state support for capital accumulation, on the one hand, and NIMBY resistances to landfills over the past decades. In contrast with earlier environmentalist ideologies of recycling for resource conservation, the present state push is oriented more to limit landfill utilization in an "economic" way.

In the state and private-sector's search for technological fixes which will have minimal drag on U.S. economic development, recycling has emerged as an **economic** policy that is legitimated as an **environmental** policy. However, recycling both limits the creation of employment for low-skilled workers, and create many potential new pollution and resource depletion issues in remanufacturing. But it does permit profits to be made on solid waste, which is increasingly becoming a valued commodity, through the process of remanufacturing and marketing of remanufactured products. This extreme form of waste commodification process entails considerable contradictions of ecological ideals, as well as with some social goals. State agency policy-making is only likely to be altered if **sustained resistance**, a new form of political mobilization involving more lasting coalitions of social welfare and environmental movements, emerges to monitor state and private capital actions in an enduring way.

ENVIRONMENTALISM AS A STATE DILEMMA: RECYCLING AND SOCIAL INTERESTS

Recycling as a recent response to modern environmental problems has become widely diffused in the U.S. (and increasingly in other industrial societies). For some analysts, it represents a sociopolitical ideal, in which government agencies, environmental movement organizations, and large-scale capital owners have negotiated a mutually acceptable "solution" to a major problem of solid waste disposal in landfills in these societies. This paper develops one alternative sociological perspective on these contemporary recycling policies. By offering the outlines of a political-economic interpretation of recycling, I hope to stimulate more systematic research on the *social* distributional implications of such policies (along with concomitant efforts to screen the *ecological* costs and benefits of them).

This paper is thus an effort at developing an alternative theory the nature of state policies about recycling. As with the state's other "environmental" policies, these often reflect the dominance of economic interests in the policymaking process (Lowi, 1979), while the resulting policies are labelled as responses to environmental problem complainants (Spector & Kitsuse, 1977). While the paper aims at theory-building, I do draw upon empirical observations, but primarily to illustrate the linkages among concepts. These empirical observations are based on a number of different data sources. Included in these were content analyses of articles on recycling in the Chicago Tribune over the 1986-1992 period, with a focus on seeing whether there was consensus on the "problem" that recycling policies in Chicago and Illinois were aimed to "solve". I also gathered written materials from local recycling coalitions, and conducted informal interviews with leaders of these, as well as local scholars involved with such movements. Public announcements regarding recycling issued by state and local agencies, as well as environmental movement representatives, were also content analysed, to understand these organizations' definition of "problems" and "solutions". Finally, I supervised a junior tutorial class of seven students who explored (in spring 1991) various social constituencies for recycling in Evanston, Illinois and Northwestern

University (in Evanston). They evaluated the attitudes and behaviors of these constituents relating to local and university recycling programs. This included interviews of local environmental movement participants, observations of residents' compliance with local recycling programs, discussions with recycling intermediaries in the private sector, and social experiments on recycling "ease" and student compliance. Finally, discussions with environmental sociologists and environmental agencies in other communities were carried out to see whether Illinois was typical in its policies was also conducted. Responses to my earlier work (, 1990a,b) on this matter was widely circulated, and comments by various readers about local variants of recycling are incorporated in this paper. Eventually, I hope that this initial empirical exploration and theoretical analyses may help reshape both future social and political research on recycling programs, and our waste treatment policies.

SOCIAL CONFLICTS AROUND ENVIRONMENTAL 'PROBLEMS':

A POLITICAL-ECONOMIC PERSPECTIVE

My basic conceptual-theoretical model here is political-economic. I seek to trace the roots of both stability and change in sociopolitical conflicts (Mankoff, 1972: 6) around the environmental problems associated with waste disposal. One key political-economic fact that has drawn to my attention to recycling is the historical anomaly that manufacturers of beverage containers, who spent millions of dollars opposing container deposit {"bottle bills"}) and other legislation designed to facilitate container re-use over the past two decades, are among the most enthusiastic industrial supporters of recycling of plastic and aluminum beverage containers. Ironically, this group of producers had spawned an early "cosmetological" social movement, interested in keeping communities "looking good", in its Keep America Beautiful campaign against litter (, 1973). This historical juxtaposition alone should suffice to give a sociologist pause in viewing

recycling only as an expression of the dominance of [environmental] politics over economic markets (Lindblom, 1977).

The model used here assumes that all actors involved in political-economic conflicts around environmental issues have enduring interests in using some parts of ecological systems (Catton & Dunlap, 1989). Further, it can be argued that environmental conflicts are about the scarcity of these ecosystem elements, as experienced by these groups, organizations or social aggregates. They are thus struggles over decisions to allocate or restrict access by such classes or groups to ecosystems. Moreover, these interests are organized within the structure of modern industrial society that I have elsewhere labelled the *treadmill of production* (, 1980: ch. 5).¹ This treadmill and its associated class structure is reproduced by a shared commitment of virtually all actors in advanced industrial society to some form of economic expansion, in order to meet their material needs. The core logic of the treadmill is that ecosystem elements are converted by capital owners through market exchanges into profits. Capital owners reinvest some of these profits in more productive physical capital, which requires still greater ecosystem access to "efficiently" operate this equipment, i.e., to generate exchange values and eventually profits by using this equipment in and on ecosystems. This technological change in turn raises the capital-intensification of production. Thus, because a growing share of national production is then required to repay capital owners, expanded ecosystem use is necessary. Production must generate enough surplus to support this outlay to capital owners, to provide enough additional exchange values and social surplus to supply an adequate level of wages to maintain consumer demand, and to generate enough tax revenue to cover social expenditures of the state.

To understand the origins of conflicts around modern environmental problems such as waste disposal, we need to appreciate how the environmental interests of actors outlined above relate to the physical-biotic organization of ecological systems. The history of expanding industrial production has provided sufficient data to outline a

dialectical conflict between social and ecological organization in advanced industrial societies (, 1980: pp. 423-4.). Dialectical conflicts emerge when social systems have two or more goals which cannot simultaneously be met (e.g., Bunker 1985; Gould 1991a, b ; Gould & Weinberg 1991). Essentially, the dialectical tension in relationships between modern societies and their environments emerges from two axioms: (1) most elements of ecological systems cannot meet both exchange-value needs and use-value needs; and (2) the treadmill of production places a primacy on exchange-value uses of ecosystems, downplaying other ecological uses which are a biological and social necessity for all classes. It is this dominant institutional and cultural commitment to expanding the production of commodities that many contemporary social and ecological theorists see as the root of alienation of humans from natural ecological systems (e.g., Schumacher, 1973; Devall, 1980; Evernden, 1985; cf. Hawkins, 1984, Brown & Mikkelson, 1990).

In the case of recycling policies, they have emerged in a historical context in which the treadmill of production has increasingly become dependent upon discarding most producer and post-consumer wastes. Such actions stimulate demand for new disposable products and also reduce some labor costs of production and distribution by using machine packaging and disposability. Incineration, landfill, and other modes necessary to deal with growing waste volumes have produced growing ecological additions of water and air pollution, as well as taking productive land out of alternative uses. These outcomes in turn have diminished the use-values of local ecosystem resources for local community groups, some of whom have become mobilized in opposition to this process.

The simplest way of delineating conflict trajectories within the treadmill is to first contrast the major conflicts between capitalist producers and environmentalists, and the role of the state as a "mediator" of these conflicts. Producers, whether capitalist or socialist (Goldman, 1972; Stretton, 1976), because of their routinized calculation of monetary profits, are highly conscious of their material interests in expanding access to natural resources. They mobilize all forms of control capacity (social, political, and

economic assets) to capture their potential exchange-values in markets. Accordingly, they influence the modern state, which partly regulates social access to ecosystems. Part of the treadmill's institutionalized bias is that exchange-value benefits are often specific individual goods (e.g, wages, jobs, social security payments), while environmental use-value benefits are diffused collective goods (e.g., clean air, clean water, nature preserves). Individual workers and their families are thus more attentive to their "interests" in the treadmill expansion than in ecosystems, *ceteris paribus* (e.g., Brown & Mikkelsen, 1990).

Environmental movement organizations and participants usually have more diffused and diverse mixtures of use-value interests in ecosystems. These range from biological sustenance (from air, water, and agricultural land) to recreational or aesthetic interests in these systems viewed as natural habitats. This interest in use-value is usually not directly tied into these movements' activity in economic markets. However, economic issues such as the levels of taxes for waste or sewage disposal are nonetheless involved in many of these conflicts. Thus, our view of recycling is that local NIMBY [not in my back yard] community activists, and some major national environmental organizations forced state agencies to thrust recycling upon reluctant producers. They did so for reasons of protecting their community from the ravages of air and water pollution produced by landfills and incinerators. They also sought to reduce land-use subsidies to producers that critics have noted (e.g., Szasz, 1990). This allowed their communities to recapture some exchange-value of this waste, through curbside recycling of consumer waste materials, which they anticipated would lower local waste disposal costs. State agencies were induced to respond to this mobilization because these constituents would withdraw political support for those administrations failing to take these environmental and fiscal policies.

Workers and their labor organizations are more conflicted in this process. They have both exchange-value interests in ecosystem access as workers in production

organizations that are subject to environmental protection regulation, and use-value interests as citizens living in ecosystems that are being disorganized by these production organizations (, 1983a, 1983b, 1986, 1992; Burton, 1986; Buttel, 1986). These groups, who constitute the bulk of the class structure, are thus potential adherents of environmental movement ideologies. But they are always capable of being politically mobilized by capital owning classes who employ them in labor markets, and who supply them with goods in consumer markets. Thus, paralleling the empirical work of Hawkins (1984) on water pollution enforcement and Brown and Mikkelson's (1990) on toxic waste pollution control, we find that local and regional manufacturers of products which end up creating problems in landfills can not readily be shut down, since local employment and wages would be reduced.

THE ROLE OF THE STATE IN ENVIRONMENTAL POLICY-MAKING ABOUT
'WASTES'

These conflicts about "doing something" about waste problems were then transferred into conflicts within the political organization of the state. Modern structural theories of the state have moved well beyond the earlier academic consensus around this pluralistic model of mediation (Buttel, 1985). Three major perspectives on the advanced industrial state have emerged in the past twenty years, each of which has some relevance for this paper. Instrumentalist views of the state (Miliband, 1969) conceptualize it as an agent of the interests of the capitalist class. State actors and agencies reflect the domination by the activities of the members of the dominant class of capitalist producers. A revision of this perspective by Poulantzas (1973a, b) envisioned the state as a reflection of the entire class structure of advanced industrial societies. This structural concept of the state theorized that the major goal of the state apparatus was to reproduce the capital logic of the society, with a broader and longer-term perspective than that imposed by the immediate interests of any segment or fraction of the capitalist class

itself. The most recent reformulation of the state, most widely expressed in the work of Skocpol (1979, 1980) and her students (Evans et al., 1985; Skocpol & Amenta, 1986) offers a more complex and dynamic view of the state. State actors and agencies are conceptualized as having some autonomous interests of their own, and this becomes an additional factor in determining state actions. As well, this concept of a state-logic argues that the state's policies are more volatile than suggested by the earlier conceptualizations. The embeddedness of the state in national and world-systemic contexts produces a historical and comparative variability across time and states because of the opportunities and constraints that this offers to state actors and to various classes and class segments in advanced industrial societies.

In the arena of waste disposal issues (cf. Szasz, 1990), state agencies such as the Environmental Protection Agency once more confronted "the environmental movement". Its reformist and radical wings (1973, 1980: ch.VIII; 1983a,b,c; 1991b, 1992) represent significant challenges to the existing social relations of production, with political demands for greater social equity in the distribution of the benefits and costs of ecological extraction. Both of these heighten our attentiveness to social use-values of natural resource extraction and ecosystem preservation. Such concerns center on how individuals and groups actually get to use ecosystems to generate broad dimensions of social health and welfare. In the area of recycling policies, however, such challenges were less salient than the concern to do something about the "garbage problem" (Bukro, 1991b; Young, 1991; Szasz, 1990; cf. Goering, 1992). This permitted more influence by dominant capital interests to place market or exchange-value considerations uppermost on our political agenda (Bachrach & Baratz, 1962, 1963, 1973). The central issues in recycling then became profits and wages, in the 1980s context of U.S. producers operating in a world-system with changing competitiveness and shifting capital and natural resource flows (Lipietz, 1987; O'Connor, 1988), and the domestic politics of Reaganism.

A major unpredictability of environmental conflict trajectories within the treadmill is the variability of material interest and the political expression of such interest by those who are largely dependent on wage income. In periods of economic decline or recession (Blumberg, 1980), these segments rely more on expanding transfer payments from the state, and also avidly support expanded industrial activity. The state, in turn, also "earns" its revenues by taxing the surplus generated by the treadmill. Thus in times of economic stress the usual emphasis on exchange values is further heightened. In their individual work roles, for example, even many environmental movement participants (especially those in NIMBY-type movements) have more consciousness and concern about their market or exchange-value interests in ecosystems, which restrains their political activity (Brown and Mikkelsen, 1990). Likewise, the actions of many worker-citizens who are not committed to environmental movement organizations are determined partly by their interests as workers and as taxpayers, and partly as ecosystem users (O'Connor, 1988; Hawkins, 1984).

CONFLICTING "LESSONS" FROM THE DIFFUSION OF RECYCLING POLICIES

Environmental movement organizations are subject to considerable cross-pressures in their demands for the state to modify waste disposal policies through limiting some kinds of access to ecosystems. Typical policies they advocate involve either direct regulations to restrict economic access to ecosystems, or the use of various user-fee systems to allocate natural resources among potential users. In this paper, I analyse some dimensions of the recent state recycling policies to respond earlier environmental movement initiatives to reduce the rapid U.S. accumulation of solid waste (1991b). Rather than ecological factors dominating the policy formation in this area, I have recently argued (1990 a,b) that economic factors have predominated in the 1980s political responses to these initiatives dating from the late 1960s and 1970s, illustrating this by examining emergent recycling policies in Illinois and the Chicago area (e.g., Papajohn 1987; Tackett 1990; Bukro 1989).

I argue in this paper against the social construction (Spector and Kitsuse, 1977) by many environmental movement organizations that recycling is a considerable social and political victory for "environmentalism". My earlier detailed analyses (1990a,b) of the definition of this problem as "a garbage glut", "solid waste problem", or "landfill problem" suggest that we should entertain doubts about the changing environmental consciousness of state agencies involved with recycling and related "materials policies" (Goering, 1992; Szasz, 1990).

While recycling is the major focus of this paper, the theoretical issues illuminated here also address the general topic of state policymaking in broader environmental and other social policy issue areas (e.g., Skocpol & Amenta, 1986; Evans et al. 1985; Hooks 1990). I concur with the caution expressed by Skocpol and Amenta (1986) that such social policymaking is greatly dependent on particular social contexts of decision-making. My argument in this paper is that major economic classes with the greatest

interest in capital accumulation have created and sustained conditions of political unconsciousness, in a period of "supply-side" Reaganomics, and more competitive world markets. They eventually subverted political movements for more ecologically and potentially socially benign reforms in U.S. materials policies. In light of Skocpol and Amenta's cautions, this paper may contribute more to our understanding of the processes by which political agendas are shaped, and the consequences of such processes, following the earlier path of Bachrach and Baratz (1962, 1963, 1973), than they may predict the outcomes of such processes in future environmental or other conflict areas. I suggest below that neither state officials nor dominant market actors have become resocialized into a new ethos of environmentalism through the process of fashioning a recycling policy. But I leave open whether this will necessarily emerge in future resolutions of the societal-environmental dialect (, 1992).

The facts are that new recycling programs do reduce the volume of solid wastes dumped into landfills in the near term. They also may temper some associated those social complaints about pollution and other hazards of such dumpsites in the near term that have arisen from environmental movement organizations and other local organizations. But I argue that they do not now systematically reduce the dominance of capital accumulation as the major influence on state environmental policymaking. Indeed, recent history suggests that they may even enhance the dominance of exchange-values in modern society.

Waste accumulation problems are thus likely to recur in various ways, because the political action of the state is aimed not at the ecologic of production. It sustains an economic logic of increasing to only the minimum degree the level of transaction costs of producing goods and services that the state deems politically expedient, in order to reduce some social complaints about waste accumulation (cf. Evernden 1985). The detailed and empirically-illustrated argument in this paper extends and complements my earlier (1990 a,b) analyses in several ways. Generally, I argue here that:

1. "Recycling" has been socially perceived as "re-use" among many movements and their political adherents: use-values appear to dominate the policy.
- ii. Modern recycling in fact is dominated by the economics of remanufacturing, with its emphasis on exchange-values.
- iii. The state reinforces public perceptions of use-value predominance at the same time as its policies are *de facto* oriented to enhancing exchange-values for capital interests.
- iv. This state deception creates budgetary and social legitimacy problems for the state, which will ultimately undermine and/or transform contemporary recycling policies.

TWO PATHS TO RECYCLING: RE-USE VS. RE-MANUFACTURING

The starkest way to examine the state's role is first to see two paths to recycle, and how the state might operate to produce social and ecological amenities in each. The re-use path is more prevalent in lower-income communities in the U.S., in European and third-world societies. In the United States, the range of re-use activities includes what we might call *social re-use*, those more oriented to use-values of consumers. These include garage sales (run by individuals), rummage sales (run by churches and other non-profit organizations), and thrift stores (run for profit or by non-profit service organizations). In most of these paths, prices are set by the consumers' capacity to pay, and the use-value of the goods to consumers. In addition to this user-oriented mode of re-use, we can outline another mode of *market re-use* of consumer (and some producer) cast-off goods, which

involve price-setting based on more exchange value considerations of the sellers: this includes traditional antique dealers and newer antique malls, conducted house sales, and some used appliance, furniture and automobile agencies (included sales of previously-rented goods). Both of these paths reduce material use, maximize the re-utilization of materials previously involved in production and/or consumption, and typically involve more labor-intensive processes than do remanufacturing. In poorer communities, paper sacks and glass and plastic containers are resold, for example. [In other settings, consumers essentially short-circuit the re-use cycle by essentially **not** using packaging, as when they use string or other durable bags instead of **both** "paper or plastic"]. Some firms may be more sparing of energy and materials in production, and re-introduce back into production lines those materials that have been discarded or rejected. Most important from a social distributive perspective, though, the common denominator in many of these re-use processes is **higher inputs of lower-skilled human labor**. Workers sort, move, re-work, re-classify, and re-think how to re-use discarded production and consumption by-products. One account of early market re-use is the following example from the first quarter of the twentieth century in Chicago is detailed in Eastwood (1992: 28):

"Another specialized form of junk peddler ... started out with a horse and wagon, but instead of collecting junk from ordinary consumers, he concentrated on collecting the waste from manufacturers in the area, particularly those producing mattresses, pillows, and other sleeping equipment. As his business flourished, he acquired a warehouse and a truck to bring materials for storage, and his sons entered the business....*[T]he importance of these peddlers in recycling materials cannot be overestimated.* Instead of waste collecting in landfills, much could be reused, while at the same time, *employment was available for countless immigrants when they needed it...*The regression in this form of recycling [occured] when *synthetics replaced natural fibers*, such as wool, cotton, and jute,

and the scrap from soft goods could no longer be effectively reprocessed. [Italics mine]

The assumption in the remainder of the paper is that this type of policy is generally more socially progressive than remanufacturing. This is because it affords more labor participation opportunities for workers with lower education and lower skills than remanufacturing. Both policies involve some exchange-values, of course, since all goods tend to be distributed in some form of marketplace. But the re-use model is more dominated by social use-value interests in consumers of re-used materials, sometimes because original consumers donate these goods for resale, or merely discard them for scavengers to pick up. Generally, the criteria for re-use are more heavily dominated by what utility social actors can derive from using the previously discarded materials, rather than by what can be remanufactured with a profit. In part, this is historically indicated by the fact that most re-use has not been mandated by state policy, but has been spontaneously generated by consumers and social intermediaries [e.g., flea market "dealers"]. This is sharply distinguished from the major role of U.S. government agencies in the past five years, mandating "recycled content" in goods to be marketed. In overview, then, re-use is a somewhat less "commodified" way of dealing with waste production and disposal than the present system of remanufacturing. Although there are markets to bring re-use sellers and buyers together, the material outcomes are much less dictated by the profitability criteria of dominant economic organizations (often negotiated with state agencies) than by the use-values anticipated by consumers entering small-scale markets. Another way of viewing this is that re-use markets are actually closer to an ideal "free market", unmediated by external forces controlling conditions.

The social organization of labor occurs in different sites and modes of production to accomplish re-use. For example, a flea market is one way of re-using consumer products; it requires labor in transporting, sorting and marketing in open-air or closed settings, often on state-leased property. Low-income scavengers often perform similar

services for production organizations, transporting discarded materials from one user to another. Labor involved in materials sorting is often used earlier in the production process by the first user, to separate re-usable wastes from non-reusable ones.

One example related to me by a colleague many years ago was about food wastes in Hong Kong. Traffic is heavy there throughout the night, I was informed, because intermediaries moved unused food from one level to the next lower one in the hierarchy of food services. Street stalls were at the bottom, and first-class tourist hotels at the top of this hierarchy. By contrast, in American society, it is only the homeless and the very poor -- whose labor is unpaid -- who scavenge for wastes from many of these restaurants. Hence, while the end-user of recycled goods may still be capital-intensive, the process of organizing goods for re-use entails a relatively high labor-to-capital ratio. Both large European flea markets and third-world human sorting of "tips" or dumps are examples of this latter approach.

In contrast, consider what the U.S. state has evolved as "recycling". Some of the less-visible efforts of producers may involve processes similar to those above, although they usually involve higher capital-to-labor ratios in production operations. This new path has come to dominate our concept of "recycling", as the following quote parenthetically suggests:

"Old clothes can't be recycled the way bottles and cans are. You can't melt down an old pair of bell-bottoms and come up with new blue jeans. But they can be reused. And why should they be? First, it saves resources....Reusing clothes can save landfill space....By donating clothes to non-profit organizations....you provide clothes for disaster victims and the homeless, and you're redistributing them into your community. Your second-hand clothes are important to people in Third World countries." [Javna 1991]

Ironically, this advisory column has to educate readers that there actually is a **non-**remanufacturing path to recycling points to the dominance (Swanson 1990) of

remanufacturing in American recycling policies and markets. The clothing example above is interesting, since there are in fact market intermediaries who are already selling used clothes (in re-sale shops). By contrast, we have a recent voluntary movement in the U.S. just beginning to recruit commercial caterers to donate their leftover foodstuffs to the poor and homeless, paralleling the clothing donations noted above.

But generally, labor and capital are both used quite differently in the dominant remanufacturing path of U.S. recycling. For example, a firm may use engineering design labor to re-design a materials flow system. It would then purchase and install expensive equipment, to recover liquid wastes that used to be disposed of. Less labor, and especially low-skilled labor, is involved than in the case of re-use. In other producer and consumer recycling, we seem to be moving more towards collection and mechanized processing, to centrally relocate recyclable materials, in preparation for remanufacturing. The state is increasingly subsidizing this effort, primarily through curbside collection from consumers. It picks up discarded materials at residences, sorts and transports the sorted materials to either for-profit business intermediaries, or directly to remanufacturers. Moreover, it may also subsidize the marketing of remanufactured goods, (1) by favorable tax treatments, and/or (2) by mandating recycled [i.e., remanufactured] materials in the state's own purchasing (even if it is less economic or of lower quality than products which use virgin materials), and/or (3) by legislating that other producers must incorporate in their products some mandated level of recycled/remanufactured materials .

Even though lower-skilled labor is involved in some of this sorting in preparation for remanufacturing, two realities must be noted. First, more of the **preparation for remanufacturing** is becoming capital rather than labor-intensive. Whereas scavengers used to collect aluminum cans and bottles with carts or bicycles, today municipalities with curbside collection are outlawing such scavengers and replacing them with trucks and trailers used for pick-up. Moreover, the intermediaries that are becoming involved

with municipalities in processing for remanufacturing are becoming more capital-intensive as well, using more machines for sorting, crushing, and packing, as the volumes of collected materials grow and the specifications of some remanufacturers become more rigid (West and Balu 1991). This displaces low-skilled labor, which operated with low levels of capital. As the state coerces and seduces producers into using more recyclables in their production, we then find an increasing capital-intensification of the remanufacturing processes. The distributive reality is that **remanufacturing** is becoming isomorphic with **manufacturing**, in terms of capital to labor ratios. Recycling-remanufacturing is becoming, in other words, more "rationalized", thereby commodifying wastes (1990a, b) in terms of rationalized exchange values. [Note that this differs sharply from re-use, which often involves extensive bargaining and negotiating, in the absence of such highly-rationalized exchange-value systems.] Thus, aluminum cans are melted in standard furnaces, and paper mills are established to disaggregate and reaggregate newsprint and other paper recycled. As with manufacturing, we see similar patterns of withdrawals (especially energy), and additions; Gould notes (1991a,b,c), for example, the water pollution in the Great Lakes produced by a paper recycling plant in one of his community sites.

Gould's work points to another paradox of the treadmill and the relations of state and capital interests. In remanufacturing, the state often colludes with capital interests in disregarding water pollution, to avoid interfering with local capital accumulation. Waste recycling then in turn leads to new waste-disposal problems arising from the remanufacturing processes themselves. Equally important, there is a selective private-sector response to recycling, dictated primarily by profitability. Everyone wants aluminum cans today, and virtually no one wants newsprint, which is defined as a "glut". A "glut" may be defined from a use-value perspective as an ecological resource, but one that from an exchange-value view lacks profitability. Again, the state is ambivalent here. While the state could instantly transform the "glut" into a valued commodity by

outlawing virgin paper products, it is reluctant to impose new capital requirements on manufacturers, especially in tough competitive times and particularly during a recession. Nor does the state propose to re-use papers through more labor-intensive processes (e.g., street vendors in the poorer European countries third world use old office and notebook papers to vend nuts and other dry foods).

SOCIAL CONSCIOUSNESS AND THE PROCESS OF RECYCLING

There are many other features that differ between the two paths to recycling. Among them is the social consciousness under the two forms of the recycling process. Recycling/re-use makes end-users much more aware of the labor-intensive forms of recycling: the transformation of wastes into use-values and exchange-values is more socially visible. In contrast, the growing use of machinery and centralization in recycling/remanufacturing puts waste "out of sight, out of mind" for product end-users. This continues patterns of social unconsciousness that have characterized our previous disposal of waste into landfills and dumpsites.

Moreover, remanufacturing extends our historical pattern of allowing production science to dominate socio-environmental impact science (1980: ch. 6), thereby preserving the definition of "success" according to a "bottom line" of market share and profitability. Thus our recent indicators of remanufacturing-recycling success include measures of (1) the putative percentage of a product that is constituted by recycled materials, and (2) the profits generated by recycling collectors and/or remanufacturers. Excluded from this are measures of net employment changes introduced by substituting recycled for virgin materials (1990a), or of net energy and pollution comparisons of remanufacturing, re-use, and disposal.

These sharp distinctions between re-use and remanufacturing paths to recycling are partly blurred in those extant communal programs of recycling-remanufacturing that grew out of earlier social movement efforts. The Resource Center in Chicago, headed by

Ken Dunn, is one such program that emerged in the past 20 years, in a low-income area near the University of Chicago. It relies on local labor, in large part, and welcomes local scavengers. The Center is skeptical about the more capital-intensive curbside recycling programs currently being proposed by the Chicago sanitation agency:

"Now that recycling is on the city's political agenda, Dunn and the organization that embodies his vision stand at a critical juncture. No longer confronted by indifference on the part of the city, they must now contend with competing interests and agendas...Dunn and other critics counter that the studies on which the city plan is based are biased and flawed...At stake, as Dunn sees it, it not only the future of the Resource Center but also the potential of *recycling as a vehicle for social change*." [Kalven 1991: 23; emphasis mine].

Two of the contrasts between the Chicago program and the Resource Center emanate from recycling goals and means. The City program is aimed at reducing landfill needs, because of rising costs of and political resistance to landfills by NIMBY (not in my back yard) protestors. Dunn's program, in contrast, was initially aimed at resource conservation. His concern was with reducing ecosystem withdrawals. To do this, he relied on concepts that he had developed in his Peace Corps experiences of preserving Brazilian rain forests. In contrast, the recycling process currently proposed by the City of Chicago involves the use of a single bag for all recyclables. This entails less labor and more machine separation at City sorting yards. But Dunn and others estimate that it also involves high losses of recyclables before remanufacturing.

In contrast, the Resource Center uses much hand labor in separating materials brought in from pushcarts and truck-loads of wastes. Most of this sorted material nonetheless eventually does go into remanufacturing, which often involves machine compression [his Center forwarded 24,000 tons and generated two million dollars in gross revenues in 1990]. Yet Dunn attempts to attract local unskilled and impoverished

labor, in an attempt to enhance community development along with the remanufacturing process.

Thus the presence of recycling programs such as Dunn's, which is more oriented to use-values, often initiated by earlier social and environmental movement activists, provides a hybrid model between the two major paths to recycling noted above. While most of the materials gathered will be remanufactured (for exchange as well as use-value) rather than re-used, the process by which the gathering and sorting occurs is more labor-intensive and use-value oriented. The sorting sites themselves, for example, use communally-gathered and socially-discarded materials (such as old van bodies) as part of their structures. And the labor is often constituted of socially-discarded workers:

"Many of those who have found a livelihood with the Resource Center are from the

impoverished surrounding neighborhoods. 'Most people assume that day laborers or unskilled people are stupid and don't care,' Dunn says, 'but these guys really work hard. Their production is phenomenal.'

With the exception of a few brightly colored pieces of machinery, everything in sight is recycled - used and reused and used again. It is a strangely consoling - and even, in its way, a beautiful - place. In this setting, man-made materials take on an almost organic quality - perpetuated, reincarnated, giving ongoing life by the care conferred on them. And the postures of the workers, winnowing through these artifacts, suggest both the hard labor and the dignity of farmers bringing in the harvest." [Kalven 1991: 23]

Ironically, though, because the Resource Center ultimately gathers local wastes for remanufacturing, it too competes with other "free-lance" local gatherers [personal communication]. Poor and street people in the University of Chicago area struggle with

each other (and with Dunn's vans) for aluminum cans and other more-valuable recyclables, which they can also "cash in" at the Resource Center. Thus the exchange-value portion of even this communal operation leads to some of the same negatively redistributive features as those of municipal curbside collection. In a way, this is a powerful testimonial to the dominance of the logic of the treadmill of production (1980, 1991). It indicates just how socially different (in terms of the *relations* of production) are the remanufacturing-recycling approaches (as *forces* of production), in contrast to the previous local technology of re-use recycling.

If this communal exception only proves the rule of social unconsciousness about the social and ecological impacts of remanufacturing-recycling, then what are our options with regard to state-organized recycling? I turn to this next.

SOCIAL OPTIONS IN RECYCLING: POTENTIALS AND PITFALLS

One logical implication of the above analysis is that environmentalists ought to be chary of any remanufacturing process in recycling. Following Szasz's model (1989), our analytic and political efforts should also focus on the negative as well as the positive ecological and social features of remanufacturing-recycling. This should include a review of the alternatives to remanufacturing-recycling, including political restrictions on the amount of waste products produced and discarded, even if they are discarded into recycling containers. As van Vliet (1990: 33) has eloquently argued:

"Consistent with the dynamics that propel capitalist systems, effective markets for secondary materials are critical to the success of recycling programs. The most important prerequisite in this connection is a large, steady supply of materials, with low contamination, at prices that permit a certain profit margin, cities by some as a constraint on large-scale recycling. However, an analysis by the EDF [Environmental Defense Fund] has produced a view of market development more as an opportunity

for economic development (EDF 1988b). It is important to recognize the limitations of such as perspective that is accepting of the premise that recycling programs have to be lucrative to be successful. When waste becomes a profitable commodity, the underlying logic implies that there is money to be made by selling and processing garbage. An approach relying on economic incentives is largely reactive and may help generate additional waste. From an environmental view point, a preferable approach is more proactive, political intervention to reduce the production of waste."

One simple example of the complexities of reducing waste production should suffice. As Belsie (1991) indicates, a substantial share of waste material consists of paper products, which has generated the much-publicized "glut" of recyclable (but not recycled) paper. Much has been written in recent years about how "excessive packaging" in retail supermarkets and other shops generates much solid waste for landfills. But few analysts have traced the historical underpinning of this packaging "revolution". A number of observers have noted that consumers express preferences for the health and convenience features of prepackaging, particularly when both spouses work and want to reduce the time needed for shopping. This suggests that consumers will resist older forms of bulk-marketing that require less packaging (1991a). However, the history of packaging is not solely determined by such functional consumer preferences. Packaging is one of the "four P's" of marketing: it is one element of producer persuasion aimed at consumers (1980: ch.4; 1991a). These marketers will likewise resist some forms of packaging control.

Moreover, still another major function for retail prepackaging is to reduce the wage labor needed by retail outlets. Where clerks once had the responsibility to sort and package goods at the retail level, shop-owners needed to pay these workers enough to ensure their trustworthiness, since they were "agents" of management that had

considerable discretion (Shapiro 1987). They had to monitor pilferage and damage by customers (especially in food stores), as well as to avoid the temptation to pilfer small items themselves. Clerks in many modern retail shops have far less discretion. They pass bar-coded, prepackaged goods over computer screens, which automatically record prices and tally bills. [Many stores with larger items also have magnetic tags which set off door alarms if the items are removed from the shop (such tags do not generate a solid waste problem, though)]. These agents of management thus have reduced opportunity to pilfer and steal prepackaged goods and to cheat customers, then, relative to earlier generations of retail clerks.

For managers and owners, this means that they can "serve" customers while paying far lower wages for their clerks. *Ceteris paribus*, then, profitability is higher with prepackaging, as both the discretion of wage laborers and their wages are thereby reduced. Yet the *ceteris* is neither *paribus* as far as ecological withdrawals/additions are concerned, nor as regards the distribution of wage income. Modern clerks do not generally earn a "family wage", regardless of whether they are male or female workers. That is why recruitment of retail clerks has increasingly focused on younger workers (with the exception of some recent efforts to hire the retired). It is also one basis why two wage earners are needed to approach a wage sufficient for them to raise children. This is yet another example of how the negative externalities of production are passed along from production organizations into both the social and ecological spheres. In order to increase profits in the face of increased competition, retail operators have reduced wage costs and increased solid waste generation, through extensive prepackaging. Thus, retailers will also join some consumers and many producer marketing departments in resisting serious limitations on packaging, thereby impeding the kind of material policies that van Vliet calls for above.

How we could transform this situation is unclear, and beyond the scope of this paper. What is clear is that there are substantial and powerful political interests

associated with "excessive packaging". Thus there are few conflict-free paths to eliminate much of this packaging (The Economist 1991; Gold 1991). It is not surprising, therefore, that manufacturers and retailers have been substituting "green packaging" (made with recycled materials), rather than eliminating packaging. As Holusha (1991) and Bukro (1991b) have recently reported, profit motives have led to persuasive forms of "green marketing", which include distorted reports of these products' "recyclability" and other environmental attributes. As one reaction to this, ten states' attorneys-general have issued a "Green Report", challenging many of these green marketing claims, and advocating new Federal Trade Commission regulations. The label of "recycled" is often used in ways that confound ecological realities, they note:

"The point of recycling is to re-use materials used by consumers, thus reducing the drain on natural resources and shrinking the amount of trash that must be disposed of. In manufacturing, these are called 'post-consumer materials'. But some industries routinely reuse scrap from their own processes in making new products and call these recycled. According to some definitions, paper that does not contain any trash can be labeled recycled."

Similarly, packaging that is labelled "recyclable" may also mislead consumers and environmentalists:

"Why should a consumer buy one product instead of another because of the claim that it is recyclable, when both will actually end up in a landfill. The study contends that the recyclable label should be used only where recycling is actually taking place." [Holusha (1991)]

Another option that more socially-progressive environmentalists might offer as a path to recycling is to offer incentives to producers, to get them to accept some form of re-use along with remanufacturing, as a substitute for a more utopian ecological goal of

reducing solid waste production (Szasz, 1991). To achieve more social equity in various stages of this process (Lowi, 1964, 1972, 1979) the following are some ways that an environmental-social equity coalition might achieve more employment and wage opportunities for low-skilled workers. This would require some political mobilization at the community and regional level, somewhat along the lines of Chicago's Resource Center organization discussed above (Kalven, 1991) and with some recent efforts by the nearby city of Evanston (West and Balu 1991). Possibilities include the following:

1. Obtaining municipal and state subsidies for communal waste collection systems. This could include more favorable contracts for non-profit organizations; lease arrangements for uses of municipal vehicles in off-hours for waste collection; tax credits or subsidies for local communal waste collectors.
2. Placing legal restrictions limiting waste-sorting to communal non-profit organizations. This could include local underwriting of waste-sorting land areas and more labor-intensive sorting at such sites. With some reorganization, it may be possible to argue that this is more cost-effective than current arrangements, if reduced local social expenses (such as unemployment and welfare costs) are integrated into the balance sheet of this more communal system.
3. Intervening in the broader remanufacturing process with local labor (ideally, in non-profit organizations), to recycle local tax revenues in support of the local community. These efforts can organize some local remanufacturing, or at least more involvement of local labor in packaging, transportation, and marketing of remanufactured goods (e.g., through

setting up communal local marketing organizations for some consumer or business service products).

4. Making more socially visible the contracts between state agencies and remanufacturers and recycling haulers, to determine how socially-effective the local government agencies are in recycling income back into the community, in the process of reducing waste dumping and/or incineration.

Social mobilization for such social distributive goals (Lowi, 1972) would pressure the state into different objectives for modern recycling programs. What might bring about this transformation of the state's role (Skocpol and Amenta, 1986)? I conclude with a set of critical questions about the political feasibility of this transformation.

THE AMBIVALENT STATE & THE FUTURE OF RECYCLING

I started this paper by noting that state agencies were not using recycling to achieve social legitimacy by attending to constituents' use-values. Rather, they were primarily supporting increased rates of capital accumulation. Instead of carefully weighing the social and ecological dimensions of a *materials policy* (1990a, b), most state agencies have patched together a set of waste treatment "programs". This "cools" out those environmentalists who, in the 1960s and 1970s, had been the primary social agents claiming that solid waste was a social problem (Spector & Kitsuse 1977). As I have argued earlier (1990a), the 1980s push for recycling came more from local, NIMBY-type political resistance to local landfills, because of fears of toxic and other pollution. Such local movements generally had little general critique of materials usage in America. State agencies attending to these problem definitions in the 1980s were local and regional rather than national ones, and were even more likely to respond to immediate and localized issues. Most common among their goal was "reduce landfill usage", in order to "extend landfill lifetimes". In addition to local NIMBY groups, the other prime constituents that

the state responded to were economic elites, who were concerned about the increased costs for business that a landfill limitation would produce (e.g., changes in manufacturing, and/or in waste treatment).

The result of this non-redistributive (Lowi, 1972) political context is that the state developed pragmatic recycling policies that retained a patina of environmental legitimacy. They used the *rhetoric* of environmental movement organizations from the 1960s and 1970s. To a considerable extent, contemporary environmental movements have actively or passively colluded with this misspecification of policy impacts (Bachrach and Baratz, 1962, 1963, 1973). For the movements, they could now claim that they had achieved some policy gains during the 1980s, a decade in which they were frustrated by Reagan's anti-environmentalism. In this acquiescence, they have abandoned broader and perhaps utopian goals of *environmental justice* or *sustainable development* (1991a).

Paradoxically, though, current non-redistributive or socially-regressive recycling policies implemented by many levels of state administration have begun to create new dilemmas for state actors. One major innovation by these government agencies has been the widespread introduction of curbside recycling (Belsie 1991; Gold 1990; New York Times 1991; Schneider 1991; Swanson 1990, 1991a; West & Balu 1991). A second has been the regulatory intervention in the market, to require new levels of industrial recycling. However, the capacity of the state to evaluate compliance with such requirements are rather weak, as Holusha (1991) and Weinberg (1991) have noted of related state materials policies. Many state actors supported curbside recycling with the expectation that the costs of the program would be recovered by payments from remanufacturers. This has not proven to be the outcome (e.g., Gold 1991; New York Times 1991; Schneider 1991, Swanson 1991a), as the net local cost of waste disposal has risen with curbside recycling. This has raised local tax costs of waste disposal, while facilitating higher exchange-values for large-scale remanufacturers, through their political influence on these state programs.

In the transition of waste streams from state to private-sector control, the state agencies attempted to maximize the exchange-value of their waste commodities, through sales of the materials they had centralized through curbside recycling of dispersed post-consumer wastes. But their capacity to "sell [wastes] dear" turned out to be far less than the remanufacturers' capacity to "buy [wastes] cheap". This expanded private sector profitability at the expense of state garbage collection budgets. Ironically, in this procedure, the state garbage agency was merely the latest arena where conflict between use-values and exchange values was extended. Environmental movement organizations had earlier confronted this conflict in their attempts to move towards meaningful re-use and remanufacturing. As noted earlier, this was exemplified by the repeated failures of environmentalists to pass "bottle bills" designed to encourage container re-use. Opposition to such bills was strong from both bottlers/packagegers and aluminum and plastic container *manufacturers*, who now are the major **remanufacturing** agents. In effect, the state has having taken on some of this environmental re-use agenda in its recycling policies, and now confronts its own naive economic naivete. The arguments against bottle re-use bills was that they were too expensive; the argument for selective remanufacturing is that it is economically sound (i.e., profitable).

Interestingly, discontent with state costs for recycling is rising. This has been particularly acerbic in an era of recession and state indebtedness. Critics (e.g., Gold 1991, Schneider 1991, Swanson 1991a) have noted that municipal costs of recycling exceed revenues from remanufacturers. One logical approach would call for higher fees from remanufacturers (an exchange-value orientation). Another would reason that the negative environmental externalities justify these net costs (a use-value orientation: e.g., van Vliet 1990; 32-33). But the most frequent argument is that this "unprofitability" of waste collection calls into question the social value of waste collection programs. These critics suggests scaling down the extensity and intensity of collections. A recent New York Times (1991) editorial puts this argument most directly:

"Recycling is obviously a laudable goal. It conserves materials at little cost to the environment. But until recycling generates its own revenues, the increased expenses

of collection, like rising landfill costs, will have to be paid by cutting other city programs. [The Sanitation Commissioner] is right to go slowly."

This response strongly suggests how far recycling has become transformed from its ideological origins in the environmental movement. Essentially, the editorial above reflects the dominance of exchange values, and the concomitant decline of earlier use-value arguments such as those of environmental movements (cf. Bukro, 1991a). Markets once more are elevated and dominate political decisions about waste processes (Lindblom, 1976; Young, 1991; Swanson, 1991b). From this position, only those elements of solid waste that generate profits should be recycled: the rest should be disposed of in other "more economic" ways. If landfills are too politically risky, then perhaps incineration or shipment abroad should be tried instead.

Instead of simply attacking this argument, this political dilemma offers sociological analysts a political pause during which we might re-examine how the remanufacturing-recycling policies arose. As I noted earlier, expanding landfills has become less politically and economically attractive to governments and industries (including waste management firms) because of local political resistance, the not-in-my-back-yard (NIMBY) social movements (Szasz 1990). Yet these diffused social reactions were never systematically integrated into a regional or national "program" by either environmental or other social movement organizations. Instead, economic elites have pressured local and regional state agencies and political actors to "do something" to relieve the "waste crisis" (1990a). Not surprisingly, therefore, we have emerged with *exchange*--value solutions to *use*--value protests. As a result, the future expansion of recycling programs is more uncertain. On the one hand, local recessions may increase local willingness to accept new landfills (Goering, 1992) because of a desire for new tax revenues and employment.

Moreover, the market for recycled aluminum is becoming attenuated by the policies of the U.S.S.R. and its successor states, desperate enough for foreign exchange that they have been dumping metals on world markets and depressing prices for both virgin and recycled metals (Arndt, 1992).

Environmental movement organizations may thus have failed to *sustain resistance* to the coordinated efforts of state agencies and capital interests to promote capital accumulation. They have at least acquiesced in the dismissal of many social justice and environmental protection objectives, some of which were at least crudely articulated by NIMBY protests (1991c; Brown and Mikkelson, 1990). Environmental movements often are naive about the fields of political force around state decision-makers, arising from dominant economic interests. This sometimes cedes this political field to capital accumulation interests (Hooks 1990; Evans et al. 1985; Skocpol & Amenta, 1986). In contrast, environmental groups might have established some coalitions with NIMBY and other social welfare movements could have mobilized locally to monitor, evaluate, and critique proposals for alternative waste policies, in a coordinated and sustained fashion (1991c; cf Staggenborg 1989; Bullard, 1990; Logan & Molotch, 1987).

Rather than episodically and separately offering pot shots against some policies and programs, a coordinated socio-environmental coalition might have exerted a sustained division of labor to partly offset the ongoing political influence of dominant capital accumulation interests. As with the NIMBY groups, the increasing universality of resistance would pressure state agents to reassess their relative attentiveness to use-value groups, rather than exchange-value institutions (O'Connor 1973; Skocpol & Amenta, 1986). With such sustained resistance, many of the more progressive and ecological goals of recycling/re-use could have been used to temper current capital-intensity of remanufacturing programs. The U.S. might have emerged into the 1990s reusing both valuable aluminum cans and discarded newsprint, regardless of the market prices of each.

By employing underutilized local labor pools, moreover, "uneconomic" waste could have been turned into "socially usable", reused or remanufactured goods (van Vliet 1989: 32-33; West & Balu 1991). By failing to organize such coordinate and sustained resistance to overriding of these other social goals, the movements lent social legitimacy to current recycling programs and capital accumulation (Gutin, 1992), without achieving any broader social-environmental objectives. This is, alas, a socially-solid waste.

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