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Editor's introduction to Chapter 13 (Steven Moore)

In opening this final section on *civil society, industry, and regulation*, STS scholar David Hess documents the existence of four pathways through which citizen activists can make positive environmental change. These are not ideal types of political thought deduced from a theoretical perspective, but types of action that seem to be successful from an empirical political economic perspective on sustainability. These four "alternative pathways" for social change serve as laboratories of innovation that test alternative designs of organizations, technologies, and infrastructures that would enable a transition to a more just and sustainable society.

Hess finds that that industry will struggle to undermine environmental regulations and will continue to focus on growth at the expense of the environment. Social movements and other forms of social change action provide a source of ongoing pressure for change and experimentation with alternatives. Through a process of incorporation and transformation, reformers often achieve mixes of partial victory and cooptation.

There are two significant assumptions in Hess' analysis that are consistent with Dewey's assessment of *The Public & Its Problems*: First, the interests of industry are not necessarily congruent with those of the public. In cases where private judgment has adverse consequences for other citizens, the state exists to regulate such actions on behalf of public well-being. But second, the distinction between private matters and those public ones regulated by the state doesn't cover all possible associations.[1] There is a political or experimental space in between where some associations among citizens come into being in order to advocate for norms that are not commonly held. In such cases the public, or "civil

[1] Dewey, John. *The Public & Its Problems*. (New York [reprinted in Athens, Ohio]: H. Holt [reprinted by Swallow Press, Ohio University Press], 1927), 23-29.

society" as Hess prefers, anticipates improved alternative futures and works toward the rational acceptance of new norms by a majority of citizens. The most valued characteristic of a democratic society, for Dewey and Hess both, is the manner in which experimental thought within civil society becomes, through public talk and over time, the norm to be regulated by the state. By imagining a "civil society society," Hess too argues for the creative power of the public to construct new habits.

A Political Economy of Sustainability:
Alternative Pathways and Industrial Innovation

David J. Hess

Introduction

A political economic approach to sustainability begins with the fundamental question: is a sustainable society possible within a political and economic system dominated by large, publicly traded corporations? Certainly the greening of industry is occurring, and many of the technologies that would reverse the ecological crises of global warming, resource depletion, and polluted ecosystems are available. However, as accumulation theorists have argued, to date the greening of industry takes place within an economic system that emphasizes ongoing growth as measured both by macroeconomic indices and ecological deposits and withdrawals. The growth of production and consumption overwhelms the forward steps of industrial greening with the backward steps of aggregate impact of humans on the global ecosystem.[1]

Social scientists cannot predict the state of future society any more than climatologists can predict the climate, but we can extrapolate on trends. Under the more pessimistic scenarios that examine global conditions in a future seventh generation, economic growth will continue, technological innovation will enable new forms of environmental withdrawal and deposit, regulation will fail to keep pace with environmental damage, conversion to renewable energy will be little and too late, resource wars and terrorism will proliferate, civil liberties will continue to erode, cancer incidence will continue to climb, and the wealthy will pay an increasingly steep price for the “inverted quarantine” of access to clean air, water, and food, not to mention the security of life in gated communities and cloistered workplaces. The prospect of general civilizational collapse may not necessarily come to pass, but under the pessimistic scenarios there are likely to

be increasingly large areas of the world characterized by slums, political chaos, starvation, epidemics, warfare, and genocide.[2]

If ongoing growth in consumption and environmental degradation are likely to continue to outpace ecologically oriented technological innovation, then the central political and economic issue in any discussion of sustainability is the transformation of an economic system based on ongoing growth in resource use. At the heart of that system is an amoral financial system that structures the goals of the publicly traded corporation around revenue and earnings growth. Advocates of eco-innovation argue that the self-correcting mechanisms of the market will generate increasing investments in green technologies, and there is some evidence that firms have shifted to practices that lessen their ecological footprints while also finding new sources of profit. However, studies of the greening of industry suggest that the primary causal factor behind eco-innovation is regulatory push rather than profitability pull. Even while some large, publicly traded corporations are making environmentally significant changes in their products and production processes, other corporations are finding new ways to exploit the environment.[3]

If the market alone cannot solve the problem, regulation is needed. However, the government, like the market, is likely to fail at providing adequate technological and economic change in a timely manner. Since the 1970s the trend has been for governments to adopt neoliberal policies in support of increased privatization, as Melosi described in the previous chapter, and decreased government regulation. As a result, the potential for many governments to steer the economy in a more sustainable direction is weak. Even where there is little overt hostility to the fundamental proposition that some environmental regulation is needed, the regulatory interventions of most nation-states and international treaties have been inadequate to reverse ecological crises such as climate change, ongoing habitat destruction, and pervasive chemical pollution. Furthermore, some international agreements, such as the North American Free Trade Agreement, have significantly reduced the capacity for national and subnational governments to develop environmental regulations.

If one accepts the two basic arguments—that the publicly traded corporation has a growth logic that is at odds with significant restoration of ecological balance, and that neither the self-correcting mechanisms of the market nor the regulatory push of the nation-state have to date generated an adequate response—then one is left with little hope for significant change led by industrial and political elites. Although they are responding to environmental change by sanctioning a greening process, their responses have been inadequate to address the crisis. Given the absence of adequate leadership from elites, grassroots efforts have played and continue to play a role in generating the political will to make more significant reforms. Although social movements often lack the power to have a transformative effect on society, they can, at some historical junctures, raise effective challenges to the legitimacy of the dominant institutions, and as a result the action of social movements can lead to some changes. Whether those changes can be of great enough significance to reverse the flow of greenhouse gases into the atmosphere and toxic chemicals into the biosphere is impossible to determine. However, an analysis of the diversity, trajectories, and impacts of those movements may provide some insight into how they can be made more effective.

A Typology of Sustainability Movements

The social movement literature, especially as it has developed in the English-speaking countries, is rich and complex, but in some ways it is also too narrowly focused for the study of sustainability politics. For example, it is too easy to circumscribe prematurely the object of study, the social movement, and to exclude from the horizon of analysis other forms of action aimed at societal change, especially the role of innovation that appears in the nonprofit sector, informal community networks, entrepreneurial businesses, and hobbies. A broader category of action is needed. Some of the leading social movement theorists have recognized the problem and suggested the term “contentious politics,” but not all of the interesting action that will be discussed here is recognizably politics, and not all of it is contentious. As a result, I use “alternative

pathways" as a general umbrella term for the wide range of sustainability-related movements to be discussed here.[4]

Insert Figure 13.1 about here.

Sustainability is understood here as a political value that is situated in a contested field of action that can be conceptualized as having an environmental and social axis (see Figure 13.1). Along the environmental axis there is a range of possible positions, from remedial approaches such as sunsetting worst practices to radical technological innovation such as the redesign of product life cycles, as occurs in the zero waste and industrial ecology fields. Likewise, along the social axis there is a parallel range of possible positions, from remedial approaches that correct lapses in human rights such as exposure of low-income communities to toxic chemicals to more process-oriented approaches that focus on making political and economic institutions more democratic, participatory, and deliberative. Together, the two axes form a field of potential and existing change action that would move society toward a state of "just sustainability," that is, a society that has not only solved its worst abuses of environmental and human degradation but has designed new technologies and institutions that would solve the environmental crises in a democratic way. Notice that in this conceptualization the "economic" is not a third axis, but instead a means toward achieving the value of a justly sustainable society.[5]

Business and government elites tend to define the politics of sustainability in a reductionist way. First, they often ignore the connection between environmental sustainability and social justice so that sustainability becomes a one-dimensional environmental issue, and second, they tend to define the environmental problem in terms of remediation rather than a fundamental rethinking of technological design and economic organizations. From the minimalist perspective of significant sectors of the elites, sustainability tends to be defined in terms of sunsetting various worst practices, such as immediately threatening pesticides, particulate emissions from diesel engines, or high levels

of carbon dioxide. The project of moving to new designs—a chemical industry freed from organochlorines or a transportation sector powered by renewable energy—are often relegated to long-term research, such as the hydrogen-powered vehicle. By making sunsetting the short-term goal and redesign the long-term goal, the prospect of building a sustainable society is deferred to some future time, and short-term profits are left unthreatened. In contrast, the wide range of social movements and other types of social change action help keep alive a more dynamic and broader understanding of the vision of building a more justly sustainable society.

To get some handle on the wide range of movements related to the broad vision of sustainability, I have developed a somewhat specific nomenclature that allows some comparison across the historical instances of social change action oriented toward justice and/or environmental sustainability. First, a social movement is understood here to have broad scope in terms of organizational diversity and temporal duration; an intention to change society from below, that is, by groups that are not part of the ruling elites; and repertoires of action that include extrainstitutional strategies such as protest. When the effort to change society occurs within an industry or a profession and utilized institutionalized repertoires of action, I use the term industrial or professional "reform movement." When the scope is smaller than a movement, I use the term "activist" for groups that use extrainstitutional protest and "advocates" for those who work more within the system. The term "interest group" is reserved for groups that do not seek to change society but instead hope to gain resources for a specific segment of society. The terms are only ideal types that serve as guideposts for understanding some differences of emphasis in an empirical field that is constituted by mixed types along a continuum. The terms are based on relatively common usage and are unlikely to be highly controversial, but at the same time they may have some value in making comparisons somewhat more precise. The term "alternative pathway" provides a broader umbrella for discussing movements, activists, and advocacy groups, but it can also include networks of reform movements that bridge civil society and industry, including entrepreneurs.

Thus, whereas social movement theory often explores the oppositional relationship between movements and industries, I prefer to open up the field of inquiry to include the partnerships among activists, advocates, hobbyists, and entrepreneurs.[6]

Utilizing the definition of a justly sustainable society given above, social change action can be divided into four major types associated with the poles of the two axes in Figure 13.1. Industrial opposition movements (IOMs) focus on bringing about the sunsetting of worst environmental practices. They function most recognizably as social movements because of their broad temporal and organizational scope and their use of repertoires of protest aimed at the state and industry. Alternative industrial movements, of which only technology- and product-oriented movements (TPMs) will be discussed here, focus more on designing and diffusing alternative technologies and products that embed an alternative view of society, the environment, and their relationship in systems of organizational and technological innovation. The TPMs are generally professional and/or industrial reform movements, with a component in nonprofit advocacy or trade association organizations and a component in for-profit firms that develop, produce, and market the alternative technology. Access movements and action focus on the rights dimension of the social axis; they demand greater access to goods, or reduced exposure to toxic substances, usually for the less well-off sectors of society. The organizations tend to be nonprofits that are rooted in extrainstitutional protest histories such as the civil rights movement but have often shifted into charitable and service-delivery roles due to devolution and privatization. Finally, democratic movements focus on changing fundamental patterns of deliberation, participation, and ownership. In this paper I will focus on one type: localist action, which involves action oriented toward increased local ownership and control of the economy, again a “movement” that involves organizational mixes and includes the business sector. Insert Table 13.1 about here.

Utilizing the typology of the four forms of social change action, one can develop an overview of various "alternative pathways" across different industrial fields. Table 13.1 lists some examples for four types of alternative pathways in the United States during the period from the 1960s to the present. The restrictions of period and country are based largely on the accessibility of the information, and the analysis would be deepened by an historical and comparative perspective. Not all of the actors and organizations would endorse the full spectrum of a justly sustainable society as has been outlined here. In fact, many focus on specific corners of that field, and in some cases they work at cross purposes with each other or fail to recognize the contributions of other groups.

The analysis that follows summarizes part of the argument of a larger work that analyzes in detail various alternative pathways in science and industry. The space constraints of a brief article prohibit providing detailed histories of the trajectory of each of the sixteen boxes in Table 13.1. Instead, the discussion will develop a synthetic view of sustainability action and movements in the United States and their overall historical trajectory and impacts since the 1960s. One benefit of a synthetic analysis is to foster a greater appreciation for the contributions, limitations, and complementarities of the different approaches to building a more just and sustainable society.[7]

The Industrial Opposition Movements

The IOMs are most easily identified as social movements because of their broad scope and tendency to utilize protest as a repertoire of action directed against governments and large corporations. In some cases specific corporations are targeted, such as Monsanto in the case of genetically modified food or Mitsubishi and Citigroup in the case of rainforest degradation. In other cases, such as the movement against nuclear energy, government policies that supported the nuclear industry were a primary target. Community-based opposition to highways, cell phone towers, airports, and nuclear reactors was directed against specific construction projects.

The central goal of most IOMs is to develop a moratorium on an industrial process, project, or product. The organizations demand an end to an undesirable object, such as pesticides, genetically modified food, nuclear energy, air and water pollutants, organochlorines, and specific sites for highways, cell phone towers, or other development projects. When elites conclude that they cannot ignore the demands and will have to respond to them, the grassroots goals undergo a process of incorporation and transformation. However, frequently the outcome is only a partial moratorium. By negotiating a partial moratorium, elites avoid the worst confrontations and often split movements into accommodationist and radical wings. In many cases, movements can claim a degree of victory because some of the most egregious environmental problems are remediated. However, the concessions occur within a context of continued resource utilization and technological innovation that generates a new generation of hazards, risks, and oppositional mobilization.

Industrial opposition movements in the food and agriculture field have centered on agricultural waste, pesticides, and genetically modified food. Concern with agricultural waste has grown from the health effects of pesticides on farm workers to the effects that drifting pesticides and animal waste products have on the air and water supply of nearby residents. Both the growth of cities into former agricultural land and the increasing industrialization of meat production have added to the concerns. Pesticides in food and the ecosystem have been of general concern since the publication of *Silent Spring*, which directed attention to problems of industrial pollution. By the 1980s there was an international Pesticide Action Network that drew public attention to food issues, and by the 1990s the network could claim the victory of having convinced governments to ban several of the worst pesticides in food. During the 1990s the organization's mission diversified to include support of a broad coalition to limit or ban genetically modified food; however, achievement of a moratorium on genetically modified food proved to be more difficult than for some pesticides. One reason is that some of the genetically modified food allows reductions in pesticides, so industry may argue that there are some environmental benefits,

and another reason is that the health risks are less clear, except for a few allergens, which have been banned from human food supplies.[8]

In the energy field the most salient IOM in the late twentieth century was the anti-nuclear energy movement, which had its origins in the 1950s and achieved widespread public mobilizations during the 1970s. By the mid 1970s the movement had shifted from a strategy of improving nuclear reactor safety to a call for a complete moratorium, and repertoires of action had diversified to include direct action from local groups such as the Clamshell and Abalone Alliances. Although protest action had some effect on the nuclear industry, the elimination of construction work in progress laws (which allowed utilities to charge customers for new construction on their utility bills) and the increase in interest rates shifted the underlying economics of nuclear reactor construction. With the achievement of a partial moratorium—the cancellation of new orders but not the closure of existing plants—many of the leaders and organizations shifted to anti-nuclear weapons activism.[9]

Waste and pollution were a central focus of the second wave of environmental organizations, such as the Environmental Defense Fund, Friends of the Earth, Greenpeace, the Natural Resources Defense Council, and the post-1960s Sierra Club. From the 1970s to the present those organizations dedicated resources to programs and campaigns in support of clean air, clean water, and toxics, as did science-based organizations such as the Union of Concerned Scientists, consumer organizations such as Public Citizen, and some of the older, “first wave” preservationist and conservationist organizations. During the 1970s support for environmental issues was widespread and to some degree bipartisan, and the environmental movement grew on a crest of legislative successes. Its repertoire of action tended to be more institutionalized, although street protest also occurred. However, by the 1980s the IOM in this field increasingly fought a rearguard battle that was focused less on new regulations and more on making sure that existing regulations were enforced or not watered down by neoliberal political leaders. Some of the most dangerous industrial pollutants have been limited, and emissions standards for vehicles have

continued to improve (such as for diesel buses), but overall air and water quality remains at risk due to loopholes in laws, emissions trading, and continued growth. Furthermore, increasing attention and energy has focused on the unequal burden of pollution, especially across geographical, race, and class lines. The third wave of the environmental movement, the environmental justice movement, saw substantial growth during and after the 1980s, and with the development of community-based environmental justice and antitoxics organizations, localist and access goals became prominent. Notwithstanding ongoing support, both the wave of mainstream environmental organizations and the subsequent wave of environmental justice organizations have faced a situation of partial victory and partial moratoria. Often achievement of victory in one policy arena or community leads to a shift of burden and struggle to another arena or locale.[10]

During the 1960s and 1970s the IOMs in the infrastructure field targeted new highway construction inside cities, which provoked significant opposition in some cities. Frequently, low-income and ethnic minority neighborhoods were targeted for demolition, and campaigns to stop highways were sometimes successful, particularly when multi-ethnic, multi-neighborhood coalitions coalesced, as in the cases of Boston and San Francisco. By the 1990s highway projects through dense urban areas were drawing to a close, and mobilization against infrastructure projects shifted to targets such as big-box superstores, expansions of airports, and cell phone towers. In the process, the class address shifted more to middle-class homeowners who were concerned with the impacts of development on quality of life and housing values, and, in the case of big-box superstores, to independent retailers, who sometimes joined with neighborhood associations to halt construction of “category killing” retail outlets. Again, the outcomes have been mixed, with victories in one locality sometimes resulting in a shift of the project to another community.[11]

Over time there has been a tendency for some of the IOMs to take on a localist flavor. The anti-nuclear energy mobilizations against the siting of new plants, the environmental justice and antitoxics mobilizations, and most of the

anti-infrastructure campaigns had a strong NIMBY (not-in-my-backyard) component, and some of the mobilization in opposition to pesticides has involved conflicts between farms and local residents over the drifting of pesticides, odors, and other agricultural waste into nearby communities. The localization of IOMs may occur partly because there are greater opportunities to develop public support when the threat is made more proximate and concrete, and partly because the political opportunity structure at the national and international level was more open during the 1970s than in the 1980s through the early 2000s.

The Technology- and Product-Oriented Movements

Like the IOMs, the TPMs target industry for change, but they tend to operate more as reform movements within the system, with relatively little evidence of repertoires of direct action and protest. There is often a symbiotic relationship between the IOMs and TPMs. Because IOMs are particularly vulnerable to the delegitimating claim that they are "negative"—that they do not propose a solution to the problem—members of the IOMs can point to the TPMs as the alternative to business as usual. Likewise, the IOMs tend to create opportunities for the TPMs, such as by educating consumers and the corporate sector about the availability of alternatives and by freeing up funding for research and development that support the TPMs.

Organizationally, TPMs are mixtures that include a reform movement side, often in the form of advocacy organizations, and a private sector side. From the movement perspective, the private sector side is a vehicle for social change, whereas from the private sector side, the movement can be a spur for market development. Some TPMs begin more as movements and develop toward the private sector over time, and likewise in some cases the private sector side sometimes begins as entrepreneurial firms and ends up being acquired by or displaced by large corporations. As a result, the relationship with large corporations is oppositional in the sense that the TPMs are creating alternative products and markets, but as the incorporation and transformation process unfolds, the relationship can evolve into partnership and cooptation.[12]

The incorporation and transformation process for TPMs works through two main mechanisms. In the first, entrepreneurial firms become publicly traded corporations, are purchased by them, or are marginalized by competing products developed by the corporate sector. An example is Cascadian Farms, which began as a back-to-the-land, organic, hippie farm and ended as a division of General Mills. In the second mechanism, countervailing industries sometimes step in to develop and transform the alternative technologies and products. An example is support from the energy industry for solar and wind energy when the electric power industry opposed it.[13]

To begin with the food and agriculture field, the organic food and agriculture movement in the U.S. began largely as a gardening movement and then shifted into farming due to the influence of the post-1960s counterculture. During the 1980s organic farming increasingly attracted larger growers who entered the industry because of new market opportunities that opened as a result of pesticide scares in food. During the 1990s federal standards came to replace the patchwork of state-level organic standards and to facilitate the design change of organic food toward processed organic foods such as frozen foods and cereal bars. As the category of organic became a market niche for the food industry, profits shifted along the commodity chain from farmers to food producers. Smaller, more “alternative” farmers reframed their mission increasingly as one of environmental stewardship and local ownership (e.g., “sustainable local agriculture”), and some opted to develop networks of trust with local consumers rather than certify as organic.[14]

During the 1970s a network of small-scale inventors and entrepreneurs began developing renewable energy, especially solar energy. Unlike in the agricultural field, where federal government recognition and support of organic farming did not develop until the 1980s, federal government support for renewable energy development in the U.S. began in the 1970s. However, small-scale entrepreneurs—many of whom combined social movement goals of off-grid, independent power generation with their start-up businesses—found themselves pushed aside in favor of projects developed by industry. Afraid of

widespread, decentralized power generation, the industry developed an alternative, on-grid vision of solar energy technology design. In contrast to solar, wind energy in the U.S. has a longer industrial history dating back to the nineteenth century. Wind energy has also provoked its own environmental backlash movement in the form of preservationist organizations that are concerned with bird kill and NIMBY groups concerned with viewshed pollution from wind farms. However, like solar energy, federal funding during the 1970s and after primarily supported designs oriented toward on-grid production, such as large turbine design that could be utilized in wind farms. The result in the cases of both solar and wind energy was an incorporation and transformation process that made the alternative energies compatible with centralized, corporate ownership and transmission via the grid. However, as in the case of the organic food industry, alternative designs compatible with the original movement goals of decentralized, locally controlled production also continued to be developed.[15]

As with organic food and wind energy, one can trace a history of recycling in the U.S. that dates back to the nineteenth century, but during the 1970s a new recycling movement emerged as an off-shoot of second-wave environmentalism. It had a typical TPM mix of voluntary organizations and small firms, both of which collected and channeled materials to the reuse and remanufacturing industries. During the 1970s the recycling movement went through various ups and downs, and by the 1990s the small, nonprofit and independent operations were increasingly displaced by curbside programs run by city sanitation services or privatized waste management companies. Some recycling activists shifted into the zero waste movement, which focused on the upstream issue of product design and called for the replacement of nonrecyclables (such as toxic materials in computers) with greener materials. Some firms have responded to campaigns for product redesign and take-back programs, but at the same time industry in the U.S. has generally opposed European-style mandates for extended producer responsibility. As the recycling movement became incorporated into the waste industry, some of the original recycling activists also formed reuse centers, which were generally locally owned businesses or nonprofit organizations that accepted

household products such as furniture, appliances, cabinets, wood, and plumbing fixtures.[16]

In the infrastructure field, TPMs have emerged generally as professional reform movements that have advocated alternative forms of infrastructure development. In the 1960s the reformers Jane Jacobs and Herbert Gans developed critiques of the subservient position of planning with respect to urban growth coalitions, and a variety of alternative planning organizations, often linked to tenants' rights struggles, emerged. In the 1980s a more moderate reform movement emerged under the banners of new urbanism and smart growth, which called for transit-oriented development, urban growth boundaries, infill, mixed income building, and mixed used zoning. New urbanists encountered substantial criticism, especially from the more activist and radical planners, who argued that their projects tended to lead to gentrification and displacement of renters. In addition, some of the new urbanist projects have been incorporated and transformed by suburban housing developers, who have selected some of the neotraditional principles, often setting aside the goals of mixed income buildings and transit-oriented development, to make upscale and expensive developments for the wealthy.[17]

In general, TPMs can leverage considerable change in industry by carving out alternative categories of products and infrastructure, developing new markets, creating innovative designs, and drawing attention to the inadequacies of the status quo. They have been a significant force in the greening of industry because they have provided a profitability pull motivation that complements the regulatory push motivation that the IOMs tend to support. However, TPMs play an intense game of cooptation, not only because the alternative start-up firms tend to be displaced and acquired by large corporations but also because the dominant industrial corporations tend to redesign the original alternative technologies and products to make them more compatible with existing systems. One can view such outcomes from a glass-half-full or glass-half-empty perspective, but the achievements tend to be, as in the case of IOMs, only partial transformations that rarely match the ambitions of the activists and innovators.

Access Movements and Advocacy

Access organizations work along the vertical axis of the just sustainability field to develop awareness of the need for social change that addresses human rights. The work in this area spans a spectrum from activism to charitable work, that is, from social movement organizations to interest groups and charities that redistribute resources to the poor but do not articulate a social change agenda. However, the latter can develop a social change agenda over time, and conversely activist organizations can become captured by charitable and service-provisioning goals. In all cases, the organizations are generally nonprofit entities, and their relationship with large corporations can vary from opposition—when the corporations are seen as responsible for rights violations—to partnership, when the corporations are donors to organizational efforts to provide needs.

The incorporation and transformation process of access movements tends to occur as a long-term shift from a period of advocacy and even activism, when rights and recognition are demanded from the state and industry, toward a phase of service delivery, when the organizations become conduits for the flow of materials from the state and private sector to those in need. The process is most visible in the antihunger and fair housing fields, and it is not uniformly evident across the access pathways. The historical change is associated with the downward and outward shift of welfare-related policies that occurred with the rise of neoliberal ideologies after 1980. In other words, welfare obligations have been devolved downward from the federal government to state and local governments through the block-granting process, and likewise they have been privatized through incentives that link access to government or foundation funding to matching support from the private sector. The devolution and privatization process can coincide with the incorporation of some organizations into welfare networks and the transformation of their missions from justice goals to service provisioning. However, the process may in turn lead to a new generation of organizations that resurrect the older, rights values when service provisioning arrangements come under threat due to cuts in government budgets.

In the food and agriculture field, the anti-hunger movement seeks to provide food to those who are hungry or have inadequate access to food on a regular basis. During the 1980s cutbacks in federal entitlement programs and a recession triggered rapid growth of anti-hunger organizations, and from that period to the present, most anti-hunger organizations reported that demand outstripped supply. Hunger and food security organizations channelled food from government, individual, and corporate donors through food banks to distribution centers such as pantries, soup kitchens, and homeless shelters. The large anti-hunger organizations that operated at a national level have, like the nationally oriented environmental organizations, diversified to occupy different niches. Some are best characterized as charitable organizations, whereas Bread for the World, RESULTS, and the Food Research and Action Center have a more political, social change mission. Since the mid-1990s a coalition of organizations represented by the Community Food Security Council has attempted to shift the hunger agenda toward local self-reliance based on institutions such as the farmers' markets and food cooperatives in low-income neighborhoods. The agenda is also consistent with the movement to develop community gardens, which complement hunger organizations as a second access pathway in the food sector. Whereas the historical transformation of anti-hunger organizations has tended to involve a shift from activism to service provisioning, in the case of community gardening the parallel transformation since the 1960s has been institutionalization through partnerships between grassroots community gardening organizations and city departments (such as a department of parks or neighborhoods) and local foundations. In cities where land values have risen dramatically, community gardens have been forced to secure land tenure either through purchases supported by local foundations or by moving to city-owned land such as parks and school grounds.[18]

In the energy field, federal support for energy access was inaugurated in 1981 under the Low Income Home Energy Assistance Program. Under the block grant system, federal funds were channeled to the state and local governments, and public-private partnerships developed through a system of energy banks or

fuel funds that were analogous to food banks. At the national level, advocacy work was much less developed than in the food field, and at the time of writing it appeared to be limited largely to two organizations: the National Low-Income Energy Consortium and the National Fuel Funds Network. There is limited evidence in this field for an historical process of incorporation and transformation, perhaps because government support for energy assistance has been relatively consistent over time.[19]

Access pathways in the waste field overlap considerably with localist pathways in the rapidly growing resale sector of the retail industry. The nonprofit thrift industry, such as the Salvation Army and Goodwill, operates stores that provide clothing and other household materials and serve as the equivalent of food and energy banks; indeed, a specialized segment has emerged under the rubric of "furniture banks." Increases in income equality and changes in welfare benefits have fueled the growth of the broader resale sector, which includes both the thrift sector and for-profit, second-hand stores. Although the broad resale sector is more oriented toward the access goal of providing usable goods at very low prices, environmental concerns have been a prominent motivation in one segment of the resale sector: reuse centers. Reuse centers may be set up as for-profit businesses, but many that we surveyed were nonprofit organizations that have an environmental and/or community development mission, and some provide job training to low-income residents.[20]

In the infrastructure field a parallel access pathway was the growth of community development corporations (CDCs). The first generation of organizations had a business development orientation, but over time they came to focus more on providing affordable housing. President Nixon's Community Development Block Grant Program was intended to open up funding to the non-poor, but advocacy organizations proved to be good at recapturing the funding. Cutbacks under the Reagan administration and after resulted in increased privatization of funding as well as the professionalization of community development and housing advocacy organizations. In contrast, access-oriented action in support of improved public transportation remained closer to its roots in

the civil rights movement. The concept of “transit justice” has been developed as an infrastructural counterpart to environmental justice, and grassroots mobilization has emerged over the emissions levels of public transit. However, transit justice organizations also focus on fundamental access issues such as resisting fare increases, improving the frequency and extent of service, and reducing funding disparities between bus service to low-income neighborhoods and commuter rail.[21]

Access pathways serve to remind theorists of sustainability and design that for a large proportion of the population, even in wealthy countries such as the United States, access to the basic requirements of life—food, energy, clothing, furniture, housing, and transportation—remains a much more pressing issue than saving the environment. To date the access pathways have tended to operate apart from sustainability considerations, but there are various points where a convergence can be found: the links between local agricultural networks and local hunger networks, the continuing development of sustainable practices in community gardens, the availability of weatherization and energy conservation programs for low-income energy consumers, the articulation of environmental and social justice goals that occurs in the reuse centers and some other corners of the resale industry, and the small but growing attention to the greening of affordable housing and public transportation. In the “beggars can’t be choosy” world of access economics and politics, green access may be considered an unaffordable luxury, but thinking through what it can involve could help ignite powerful synergies between the social justice and environmental sustainability agendas.

Localism

Localism is only one among many pathways that aim to strengthen and redesign democratic institutions and processes. Other approaches include demarchy (random selection of citizens as in juries) and various deliberative and participatory institutions, as well as structural reforms such as campaign finance reform and media reform. Localism enhances democracy by developing

alternative institutions that would strengthen the local economy and revitalize local ownership; in other words, it represents one response to the loss of democratic control over the economy that has occurred during an era of economic and political globalization. Localist firms are privately held, locally owned, independent businesses, such as family stores and service businesses. Unlike the large, publicly traded corporation, for localist businesses growth and profitability are often less important overarching goals than merely maintaining an adequate revenue stream to cover wages and other expenses. Other localist organizations include regional nonprofit organizations and the service agencies of the local government, such as publicly owned utilities and transit agencies, where a mission broader than growth of revenue and profits is generally explicit. The most typical localist organizations tend to be in the retail, service, and agricultural sectors, whereas in the manufacturing sector economies of scale may require firms to compete in nonlocal markets, grow rapidly to take advantage of product innovation, and seek nonlocal capital to fuel the growth.[22]

In some cases, networks of localist organizations seek consumer buycotts in favor of their products and, implicitly or explicitly, boycotts of corporate products. For example, one finds “buy local” campaigns in some of the affiliate organizations of the two main national networks of alternative, local business associations (the American Independent Business Alliance and the Business Alliance for Local Living Economies). Main street retailers who are under competition from big-box stores and small farmers who are trying to develop local direct marketing networks tend to be main sources of support for buy local campaigns, but there are also interesting examples of the use of import substitution in city government purchases that are designed to help develop a local industry.[23]

The incorporation and transformation process in the localist segment of social change action depends greatly on organizational form. Small businesses are especially vulnerable to displacement by the chains, and they often must differentiate their products from those of the chains in order to stay in business. When they are pushed out of conventional markets, they can form niches

oriented to green, fair trade, and other products that appeal to progressive, middle-class consumers, or they can diversify into the reuse and service sectors. Nonprofit organizations and public agencies are more able to resist direct acquisition or displacement by large firms, but nonprofits may undergo shifts toward professionalization that include higher levels of participation by nonlocal elites on the governing boards.

In the food and agriculture field, the case for localism has been especially easy to make because of the concern of some middle-class shoppers with supporting local farms to slow the demise of the countryside, and because high-quality, fresh, local produce is generally superior to the varieties offered in the supermarket. Frequently, localism in agriculture is combined with sustainable production, and the "sustainable, local agriculture movement" is in some ways the heir to what was formerly called the organic movement. However, localism in agriculture, as with other localist alternative pathways, is not necessarily environmentally sustainable; the primary feature is local ownership and control. Local agricultural networks are built around a mixture of institutions, some old and some new, including farmers' markets, retail food cooperatives, community-supported agriculture (subscription-based farming), local food labels, and restaurants and cafeterias that emphasize local food purchases. In all cases there is quantitative evidence of growth from the 1980s to the present, but in absolute terms each example of agricultural localism has achieved only a relatively small percentage of total market share. Most of the institutions have been relatively resistant to incorporation and transformation; the strongest case for incorporation and transformation is with food cooperatives, which are being displaced by the natural foods grocery chains and natural foods sections in mainstream supermarket chain stores.[24]

In the United States most of the electric utilities are locally owned public power agencies, but investor-owned utilities serve most of the large cities and the preponderance of consumers. Because many public power agencies possess little or no generation capacity, they must buy their electricity from electricity generators and in effect are electricity retailers. However, some of the larger

public power utilities have significant generation capacity and have provided models of renewable energy innovation. For example, Seattle City Light claims to have become the first carbon neutral utility in the country, largely because of its significant hydropower sources but also because of investments in wind and other renewable energy sources. In San Francisco there was a heated grassroots campaign to replace the investor-owned utility with local government ownership, but proponents of public power lost the referendum. San Francisco, like other cities, then pursued the alternative pathway of aggregating their customers and seeking competitive bids from investor-owned utilities that are willing to provide a specified portion of the portfolio through renewables or cleaner energy. The San Francisco aggregation may result in significant new construction of local, distributed renewable energy generation. In the case of public power, there is again evidence of an incorporation and transformation process, which occurred as the strategy of conversion to public power has given way to community aggregation. In the latter, communities aggregate all customers after an opt-out period, then they negotiate a group contract with an electricity service provider. In San Francisco, community choice aggregation has been coupled with the city's bond authority to create investment in hundreds of megawatts of locally owned renewable energy and energy conservation developments.[25]

The ideal typical form of localism in the waste field would involve the capture of local waste by locally owned or controlled organizations to produce products for sale on local markets. One can find some examples of such operations in city-owned composting, small-scale recycling and remanufacturing operations that sell to local markets, and arts and crafts enterprises that make products from recycled or reused products. However, the remanufacturing industry as a whole tends to operate at a larger scale, where inputs tend to come from local and nonlocal sources, and markets are continental if not international. Instead, localism in the waste field can be found in yard sales and other aspects of the resale sector mentioned above. About twenty percent of all Americans have held a yard sale in the past year, and the resale sector claims to be the

fastest growing sector of retail. In this case the access and localist pathways are very closely interwoven.[26]

One example of localism in the infrastructure field is sourcing to local businesses for infrastructure projects. For example, in Chattanooga the public transit agency helped to develop a local electric bus manufacturing company by shifting its purchases to the company, and in Seattle the transit agency has purchased biodiesel blends, much of which is produced locally. Likewise, in some cases building construction can substitute local materials, and points are given in the LEED certification process for buildings that use local materials. In addition to import substitution, localism in infrastructure also involves organizational innovations that have resituated the small domestic unit in larger living arrangements that allow cooperative, local arrangements to recapture labor that has been previously outsourced to the market, such as collective child-care and cooking arrangements. Cohousing provides greater opportunities for communal activities such as meal sharing, whereas ecovillages take the additional step of attempting to combine work and living arrangements. Both cohousing and ecovillage units tend to be innovative in terms of energy efficiency and other sustainable building practices.[27]

Localism has the advantage of building on widespread grassroots dissatisfaction with the loss of economic sovereignty that has accompanied the globalization of the economy. Localist projects tend to construct alternative markets in a manner similar to the TPMs, but the localist alternative flags ownership rather than green product design as the main portal to social change. Furthermore, localism can also substitute nonmarket activity, such as home improvements and collective domestic labor arrangements, for services that were previously purchased on the market. Because of the emphasis on the invigoration of the local community, localist pathways have the advantage of being able to attract support across traditional left-right political boundaries. Although localism can devolve into enclavism, it can also be opened up to alternative trade networks, which also emphasize purchasing locally owned, privately held businesses throughout the world. The complex politics of localism

are explored elsewhere, but it is worth noting that, as in the case of access pathways, localist pathways are not necessarily linked to sustainability values. For example, not all local farms use sustainable agricultural practices, and not all off-grid home power projects use renewable energy. However, there are numerous points of convergence in the worlds of sustainable local agricultural networks, public power companies, distributed and off-grid energy, the local second-hand economy, and alternative living arrangements. The localist pathways have the advantage of reminding theorists of sustainability that issues of democratic, bottom-up political organization may be important for thinking through the fundamental social changes that are needed to solve environmental and social justice problems.[28]

Conclusion

As an economic system capitalism has often been defined as based on production for profit, but under conditions of monopolistic competition in the global knowledge economy, it is more accurate to say that capitalism is also production to standard. The most ubiquitous standards are those generated by groups of large corporations to capture a price premium and customer loyalty for their differentiated brands, but governments and intergovernmental organizations also develop standards. The wide range of alternative pathways discussed in this essay provide public input into the process of defining standards and products, and they open up a public debate on “object conflicts,” or definitional struggles among firms, states, and civil society organizations over the design and shaping of the material culture of society.

The IOMs are probably the most transparent example of the role that social change actors play in conflicts over technologies, products, and their design and standards. Conflicts over pesticides in food, nuclear energy safety, cell phone tower locations, and acceptable air quality or emissions standards involve social movement and advocacy organizations as representatives of societal and environmental interests in negotiations with firms and states over standards. Where negotiations are not successful and standards are

inadequate, demonstrations and consumer boycotts can emerge, and the result can be a moratorium or partial moratorium on a technology, infrastructure design, or other aspect of the material culture. The achievement of a partial moratorium is only a partial victory, because it shifts the contours of a technological field and the development of material culture and design in a new direction but sets the stage for a new generation of conflicts.

In the TPMs, the outcome of the incorporation and transformation process is a double-edged process whereby established industrial firms may change to accept the alternative technologies and products, but the alternative technologies rarely replace those of the mainstream. Instead, a complementarization process often emerges, whereby the alternative is redesigned into a technology and/or product that is compatible with those produced by the dominant corporations of the industrial field. An example is solar and wind energy, which the power industry originally saw as very frightening because it raised the specter of transmission lines coming down due to off-grid power production. Over a multidecade process of change the industry has instead incorporated and transformed the technology in two ways. First, the concept of distributed generation allowed formerly off-grid technologies to become grid interconnected, with the grid serving as a bank for deposits and withdrawals of energy from local sources. Second, the technology itself was redesigned—especially in the case of wind farms but increasingly also in the case of solar farms—so that it could be utilized for grid-based production. This is not to say that the original, localist variant of alternative, small-scale wind turbine designs has disappeared; rather, it has become marginalized as capital investments have flowed into designs that are more compatible with existing technological systems and investments. Another example is organic food, which has gone from a fresh, directly marketed, local whole food anchored in local agricultural networks to a product category for food that can be produced on large farms, transformed into processed food, transferred through global commodity chains, and sold through mass channels such as supermarkets. Again, as the object of “organic food” is incorporated into the existing industrial system, it undergoes a change in design whereby it is

made increasingly complementary to existing forms of industrial food production and products. In particular, the localism drops out, and the whole foods dimension is relegated to one option among many.

Access and localist organizations focus less on the design of products and industrial processes and more on organizational design, that is, how economic systems can be designed to ensure goals such as meeting basic human rights and providing for enhanced democratic control of the economy. Object conflicts in access pathways tend to occur around organizational mission. For example, is the mission of an antihunger organization to relieve hunger or reduce inequality in society that is at the basis of hunger? The definition of the object of access has implications for how food production and distribution systems are organized. Likewise, in the localist pathways there are many conflicts emerging over definitions of localism, such as the extent to which local business networks will also be committed to sustainability and justice goals. As in the case of the IOMs and TPMs, there are conflicts over design, but in this case the conflicts are more focused on organizational design than material culture and production processes.

Behind the range of object conflicts is a general question of how the economy should evolve if societies are to move more rapidly toward solving the ecological crises and problems of social justice that they currently face. As accumulation and treadmill-of-production theorists have noted, among the publicly traded corporations there is little evidence for the emancipation of environmental and social values from the paramount value of profitability and growth. Indeed, the financialization of the economy tends to place an ever-greater emphasis on those goals. In the large corporate and financial organizations, the technological and discursive shifts associated with ecological modernization take place within a context of investor interest in continued profitability. Change in their paramount value of profitability growth would require significant shifts in state regulations so that large, publicly traded corporations would be required to set general societal benefit concerns above the interest in maximizing profits for shareholders.[29]

From the broader historical perspective of world history and ecological anthropology, a global economy based on an amoral, growth-oriented, economic organization might be viewed as a long-term problem of ecological adaptation of the economy. Shifts in sectoral dominance in human societies have occurred over time: in the earliest human societies, kinship relations encompassed the economic and political "systems," whereas in the urban civilizations and empires, centralized states (in some cases theocracies) dominated the economic sector.[30] The current configuration of society, in which the large corporations of the private sector dominate the state, civil society, and domestic sphere, is not necessarily the endpoint of historical development of human societies. The various alternative pathways discussed here provide experimental models of a way to organize the economy and society that would enable issues of sustainability and justice come to encompass that of amoral profit-seeking. Organizationally, one can see examples where public mission encompasses profit-seeking in revenue-generating state agencies, such as transit agencies and publicly owned utilities; nonprofit organizations that derive a portion of their revenue stream from market activity, such as nonprofit farms and reuse centers; domestic units or networks of domestic units, as found in cohousing facilities and community gardening groups; and privately held, locally owned, for-profit firms that have endorsed social and environmental values over growth. In those organizations, goals traditionally associated with civil society organizations—social justice and environmental sustainability—meet the market through the production and sale of goods and services. They raise the possibility of a "civil society society" as a next step beyond the capitalist society.

If such a transformation were to occur, it would require a significant rethinking of how financial markets operate and how corporate charters are defined. Any attempts to redefine highly profitable organizational forms that benefit elites will likely be dismissed, marginalized, and suppressed. The alternative pathways serve as demonstration projects and educational fora that teach the feasibility of significant societal change; they are, in a sense, research and development centers for the innovation of new organizational, technological,

and market relationships that might be capable of producing a more just and sustainable future. However, to bring the demonstration projects to full scale, significant reforms would be required in the standards by which publicly traded corporations are organized and the objects that they are allowed to produce. Such changes would be unlikely to occur unless severe social and environmental disruptions were to endanger the survival of elites. At that point, the alternative pathways would come to serve as resources for redefining what is left of society and the environment.

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References

Agyeman, J., Bullard, R., and Evans, B. (2003) *Just Sustainabilities: Development in an Unequal World*, Cambridge, MA: MIT Press.

Allen, P. (2004) *Together at the Table: Sustainability and Sustenance in the American Agrifood System*, University Park, Pa: Pennsylvania State University Press.

Asmus, P. (2001) *Reaping the Wind: How Mechanical Wizards, Visionaries, & Profiteers Helped Shape Our Energy Future,* Washington, D.C.: Island Press.

Bayliss, R., Connell, L., and Flynn, A. 1998a. 'Sector variation and ecological modernization: towards an analysis at the level of the firm', *Business Strategy and the Environment*, 7, 3: 150-161.

_____ (1998b) 'Company size, environmental regulation, and ecological modernization: further analysis at the level of the firm', *Business Strategy and the Environment* 7, 5: 285-296.

Brieger, T. (2002) 'Pesticide Action Network's first twenty years: an interview with Monica Moore', *Global Pesticide Campaigner* May: 18-21.

Brown, A. (2001. 'Counting farmers' markets', *Geographical Review* 91, 4: 655-674.

_____ (2002) 'Farmers' market research 1940-2000: an inventory and review', *American Journal of Alternative Agriculture* 17, 4: 167-176.

Brown, L. (2001) *Eco-economy: Building an Economy for the Earth*, New York: W.W. Norton.

Bullard, R. (1994) *Dumping in Dixie: Race, Class, and Environmental Quality*, Boulder, Co.: Westview Press.

Bullard, R., Johnson, G., and Torres, A. eds. (2000) *Sprawl City: Race, Politics, and Planning in Atlanta*, Washington, D.C.: Island Press.

Bullard, R., Johnson, G., and Torres, A. eds. (2004) *Highway Robbery: Transportation Racism and New Routes to Equity*, Boston: South End Press.

Campbell, S. (1996) 'Green cities, growing cities, just cities? Urban planning and the contradictions of sustainable development', *American Planning Association Journal* 62, 3: 296-312.

Carson, L., and Martin, B. (2002) 'Random selection of citizens for technological decision making', *Science and Public Policy* 29, 2 (April): 105-113.

Carson, R. (1962) *Silent Spring*. Boston: Houghton-Mifflin.

Cassidy, R., (ed) (2003) 'The basics of LEED', *Building Design and Construction* November (supplement):8-12.

Chase-Dunn, C., and Hall, T. (1997) *Rise and Demise: Comparing World Systems*, Boulder, Co.: Westview Press.

Cole, L., and Foster, S. (2000) *From the Ground Up: Environmental Racism and the Rise of the Environmental Justice Movement,* New York: NYU Press.

Congress for the New Urbanism (2002) 'Charter of the New Urbanism', accessed 15 May 2009: <http://www.cnu.org/charter>.

Daley-Hughes, S. (2002) *Pathways Out of Poverty*, Bloomfield, Ct.: Kumarian Press.

Davis, M. (2006) *Planet of Slums*, London: Verso.

DeSimone, L., and Popoff, F., with the World Business Council for Sustainable Development. (1997) *Eco-Efficiency: The Business Link to Sustainable Development*, Cambridge, Ma.: MIT Press.

Dowie, M. (1995) *Losing Ground: American Environmentalism at the End of the Century*, Cambridge, Ma.: MIT Press.

Dreier, P. (1997) 'The new politics of housing: how to build a constituency for a progressive federal housing policy', *Journal of the American Planning Association* 63, Winter: 5-27.

Eisinger, P. (1998) *Toward an End to Hunger in America*, Washington, D.C.: Brookings Institution.

Fenn, P. (2009) 'Local Power', accessed 10 May 2009: <http://www.local.org/local.html>.

Ferguson, R., and Dickens, W. (eds) (1999) *Urban Problems and Community Development*, Washington, D.C.: Brookings Institution.

Fischer, F. (2000) *Citizens, Experts, and the Environment: The Politics of Local Knowledge,* Durham, N.C.: Duke University Press.

Flacks, R. (2004) 'Knowledge for what? Thoughts on the state of social movement studies', in J. Goodwin and J. Jasper (eds.) *Rethinking Social Movements: Structure, Meaning, and Emotion*, Lanham, Md.: Rowman and Littlefield. Pp. 135-153.

Florida, R. (1996) 'Lean and green: the move to environmentally conscious manufacturing', *California Management Review* 39, 1: 80-105.

Gans, H. (1959) 'The human implications of current redevelopment and relocation planning', *Journal of the American Institute of Planners* 25, 1: 15-25.

Gottlieb, R. (1993) *Forcing the Spring: The Transformation of the American Environmental Movement*, Washington, D.C.: Island Press.

_____. (2001) *Environmentalism Unbound: Exploring New Pathways for Change*, Cambridge, Ma.: MIT Press.

Gusterson, H. (1996) *Nuclear Rites: A Weapons Laboratory at the End of the Cold War*, Berkeley: University of California Press.

Guthman, J. (2004) *Agrarian Dreams: The Paradox of Organic Farming in California*, Berkeley, CA: University of California Press.

Hård, M., and Jamison, A. (2005) *Hubris and Hybrids: A Cultural History of Technology and Science*, New York: Routledge.

Hawken, P., Lovins, A., and Lovins, J. H. (1999) *Natural Capitalism: Creating the Next Industrial Revolution,* Boston: Little, Brown, and Co.

Heiman, M. (1990) 'From "not in my backyard!" to "not in anybody's backyard!": grassroots challenge to hazardous waste facility siting', *Journal of the American Planning Association* 56, 3: 359-362.

Henderson, H. (1996) *Creating Alternative Futures*, Bloomfield, Ct.: Kumarian.

Hess, D. (2004) 'Organic food and agriculture in the U.S.: object conflicts in a health-environmental movement', *Science as Culture* 13, 4: 493-513.

_____. (2005) 'Technology and product-oriented movements: approximating social movement studies and science and technology studies', *Science, Technology, and Human Values* 30, 4: 515-535.

_____. (2007a) *Alternative Pathways in Science and Industry: Activism, the Innovation, and the Environment in an Era of Globalization*, Cambridge, Ma.: MIT Press.

_____. (2007b) 'What is a clean bus? Object conflicts in the greening of urban transit', *Sustainability: Science, Practice, and Policy* 3, 1: 1-14.

_____. (2008) 'Localism and the Environment', *Sociology Compass* 2, 2: 625-638.

_____. (2009) *Localist Movements in a Global Economy: Sustainability, Justice, and Urban Development in the United States*, Cambridge, Ma.: MIT Press.

Hoffman, L. (1989) *The Politics of Knowledge: Activist Movements in Medicine and Planning*, Albany, N.Y.: The State University of New York Press.

Horne, S., and Maddrell. A. (2002) *Charity Shops: Retailing, Consumption, and Society*, New York: Routledge.

Issel, W. (1999) 'Land values, human values, and the preservation of the city's treasured appearance', *Pacific Historical Review* 68, 4: 611-646.

Jackson, H., and Jackson, R. (2004) 'Global eco-village network history, 1990-2004', Gaia Trust, accessed 15 May 2009: <http://www.gaia.org/mediafiles/gaia/resources/HJackson_GEN-History.pdf>.

Jacobs, J. (1961) *The Death and Life of Great American Cities*, New York: Vintage Books.

Joppke, C. (1993) *Mobilizing against Nuclear Energy: A Comparison of Germany and the United States*, Berkeley, Ca.: University of California Press.

Kline, B. (2000) *First Along the River*, San Francisco: Acada Books.

Korten, D. (1999) *The Post-Corporate World: Life after Capitalism*, West Hartford, Ct.: Kumarian.

Lach, J. (2000) 'Welcome to the hoard fest', *American Demographics* 22, 4: 8-9.

Lounsbury, M., Ventresca, M., and Hirsch, P. (2003) 'Social movements, field frames, and industry emergence: a cultural-political Perspective on U.S. recycling', *Socio-Economic Review* 1, 1: 71-105.

Mazmanian, D., and Kraft, M. (eds) (1999). *Toward Sustainable Communities: Transition and Transformations in Environmental Policy*, Cambridge, Ma.: MIT Press.

McAdam, D., and Snow, D. (eds) (1997) *Social Movements: Readings on their Emergence, Mobilization, and Dynamics*, Los Angeles: Roxbury Publishing Co.

McAdam, D., Tarrow, S., and Tilly, C. (2001) *Dynamics of Contention*. Cambridge, Ma.: Cambridge University Press.

McCamant, K., and Durrett, C., with Hertzman, E. (1994) *Cohousing: A Contemporary Approach to Housing Ourselves*, Berkeley, Ca.: Ten-Speed Press.

McGranahan, G., and Satterthwaite, D. (2000) 'Environmental health or ecological sustainability? Reconciling the brown and green agendas in urban development', in C. Pugh (ed) *Sustainable Cities in Developing Countries*, London and Sterling, Va.: Earthscan. Pp.73-90.

Meadows, D., J. Randers, and D. Meadows (2006) *Limits to Growth: The Thirty-Year Update*, White River Junction, VT: Chelsea Green.

Mitchell, S. (2006) *Big-Box Swindle: The True Cost of Mega-Retailers and the Fight for America's Independent Businesses*, Boston: Beacon.

Mohl, R. (2004) 'Stop the road: freeway revolts in American cities', *Journal of Urban History* 30, 5: 674-706.

Mol, A. (1996) 'Ecological modernization and institutional reflexivity: environmental reform in the late modern age', *Environmental Politics* 5, 2: 302-23.

Mol, A., and Spaargaren, G. (2000) 'Ecological modernisation theory in debate: a review', *Environmental Politics* 9, 1: 17-49.

Moyer, B., with McAllister, J., Finley, M., and Soifer, S. (2001) *Doing Democracy: The MAP Model for Organizing Social Movements*, Gabriola Island, BC: New Society.

National Association of Resale and Thrift Shops (2009) 'About NARTS', retrieved 15 May 2009: <http://www.narts.org/press/>.

National Fuel Funds Network (2009) 'Mobilization for charitable energy assistance', accessed 15 May 2009: <http://www.nationalfuelfunds.org/mobilizationforcharitableenergyassistance/index.html>.

National Low Income Energy Consortium (2004) 'What is NLIEC', accessed 15 May 2009: <http://www.nliec.org/what.htm>.

Norman, A. (2009) 'About Sprawl-Busters', accessed 15 May 2009: <www.sprawl-busters.com/aboutsb.html>.

O'Connor, J. (1998) *Natural Causes? Essays in Ecological Marxism*. New York: Guilford.

Palmer, K., and Walls, M. (2002) 'The product stewardship movement: understanding costs, effectiveness, and the role of policy', retrieved 15 May 2009: <http://www.rff.org/RFF/Documents/RFF-RPT-prodsteward.pdf>.

Pellow, D., Schnaiberg, A., and Weinberg, A. (2000) 'Putting the ecological modernization theory to the test: the promises and performances of urban recycling', *Environmental Politics* 9:109-137.

Pinderhughes, R. (2004) *Alternative Urban Futures*, Lanham, Md.: Rowman and Littlefield.

Pollan, M. (2001) 'Naturally', *New York Times Magazine*, May 13, pp. 30ff.

Poppendieck, J. (1998) *Sweet Charity? Emergency Food and the End of Entitlement*, New York: Viking.

Pyatok, M. (2000) 'The Politics of design: the new urbanists vs. the grassroots', *Housing Policy Debate* 11, 4: 803-814.

Reece, R. (1979) *The Sun Betrayed*, Boston: South End Press.

Regional Commission on Airport Affairs (2009) 'Airport community groups and cities', accessed 15 May 2009: <http://www.rcaanews.org/exchange.htm>.

Reisner, A. (2001) 'Social movement organizations' reactions to genetic engineering in agriculture', *The American Behavioral Scientist* 44, 8: 1389-1404.

Righter, R. (1996) *Wind Energy in America*, Norman, Ok.: University of Oklahoma Press.

Scheinberg, A. (2003) 'The proof of the pudding: urban recycling in North America as a process of ecological modernization', *Environmental Politics* 12, 4: 49-75.

Sclove, R. (1995) *Democracy and Technology*, New York: Guilford.

Schnaiberg, A., and Gould, K. (1994) *Environment and Society: The Enduring Conflict*, New York: St. Martin's.

Seldman, N. (1995) 'Recycling: a history in the United States', in A. Bisio and S. Boots (eds) *Encyclopedia of Energy, Technology, and the Environment*, New York: Wiley. Pp. 2352-2368.

Shuman, M. (2000) *Going Local: Creating Self-Reliant Communities in a Global Age*, New York: Routledge.

_____. (2006) *The Small Mart Revolution: How Local Businesses are Beating the Global Competition*, San Fracisco: Berrett-Koehler.

Stevenson, S., D. Lass, J. Hendrickson, and K. Ruhf. (2004) 'CSA across the nation: findings from 1999 and 2001 national surveys', accessed 15 May 2009: <http://www.cias.wisc.edu/economics/csa-across-the-nation-findings-from-the-1999-and-2001-csa-surveys/>.

Summit II National Office (2002) 'Summit II briefing: celebrating our victories, strengthening our roots: our challenge for the twenty-first century', accessed 15 May 2009: <http://www.ejrc.cau.edu/summit2/EJSummitIIBriefing.pdf>.

Szasz, A. (1994) *Ecopopulism: Toxic Waste and the Movement for Environmental Justice*, Minneapolis, Mn.: University of Minnesota Press.

_____. (2007) *Shopping Our Way to Safety: How We Changed from Protecting the Environment to Protecting Ourselves*, University of Minnesota Press.

Tarrow, S. (1998) *Power in Movement: Social Movements and Contentious Politics,* second edition, Cambridge, UK: Cambridge University Press.

Warren, T. (1999) 'Onward Christian soldiers', *Washingtonian* 35, 3: 86-89.

Weinberg, A., Pellow, D., and Schnaiberg, A. (2000) *Urban Recycling and the Search for Sustainable Community Development*, Princeton, NJ: Princeton University Press.

Wellock, T. (1998) *Critical Masses: Opposition to Nuclear Power in California, 1958-1978*, Madison, Wi.: University of Wisconsin Press.

Williamson, T., Imbroscio, D., and Alperovitz, G. (2002) *Making a Place for Community*, New York: Routledge.

York, R., and Rosa, E. (2003) 'Key challenges to ecological modernization theory', *Organization and Environment* 16, 3: 273-288.

Notes

[1] Schnaiberg and Gould 1994 and York and Rosa 2003.
[2] Davis 2006, Meadows et al. 2004. On the inverted quarantine, see Szasz 2007.
[3] Bayliss et al. 1998a, 1998b, DeSimone et al. 1997, Florida 1996, and Hawken et al. 1999.
[4] On contentious politics, see McAdam et al. 2001. On alternative pathways, see Hess 2007a as well as Gottlieb 2001 and similar concepts in Brown 2001, Daley-Hughes 2002, Henderson 1996, Korten 1999, and Pinderhughes 2004.
[5] On just sustainability, see Agyeman et al. 2003. See also Campbell 1996, McGranahan and Sattherhwaite 2000, and O'Connor 1998.
[6] Flacks 2004, McAdam and Snow 1997, and Tarrow 1998.
[7] Hess 2007a. For a similar historical perspective, see Hård and Jamison 2005.
[8] Brieger 2002, Carson 1962, and Reisner 2001.
[9] Gusterson 1996, Joppke 1993, Moyer et al. 2001, and Wellock 1998.
[10] Bullard 1994, Cole and Foster 2000, Dowie 1995, Gottlieb 1993, Heiman 1990, Kline 2000, Mazmanian and Kraft 1999, Summit II National Office 2002, and Szasz 1994.
[11] Issel 1999, Mitchell 2006, Mohl 2004, Norman 2009, and Regional Commission on Airport Affairs 2009.
[12] For a more detailed discussion of TPMs, see Hess 2005, 2007a.
[13] Pollan 2001.
[14] Gottlieb 2001, Guthman 2004, and other sources in Hess 2004, 2007a.
[15] Asumus 2001, Reece 1979, and Righter 1996.
[16] Lounsbury et al. 2003, Palmer and Walls 2002, Seldman 1995, and Weinburg et al. 2000.
[17] Congress for the New Urbanism 2002, Gans 1959, Hoffman 1989, Jacobs 1961, and Pyatok 2000.
[18] Allen 2004, Eisenger 1998, Gottlieb 2001, and Poppendieck 1998.
[19] National Fuel Funds Network 2009 and National Low Income Energy Consortium 2009. Some utility companies also provide assistance to low-income customers and assistance for weatherization.
[20] Hess 2009, Horne and Maddrell 2002, National Association of Resale and Thrift Shops 2009, and Warren 1999.
[21] Bullard et al. 2000, 2004, Dreir 1997, Ferguson and Dickens 1999, and Hess 2007b.
[22] Carson and Martin 2002, Fischer 2000, Sclove 1995, Shuman 2000, and Williamson et al. 2002.
[23] Mitchell 2006 and Shuman 2006.
[24] A. Brown 2001, 2002 and Stevenson et al. 2004. For more detailed literature reviews and sources, see Hess 2007, 2008, 2009.
[25] Fenn 2009 and Hess 2009.
[26] Hess 2007a, 2009, and Lach 2000.
[27] Cassidy 2003, Jackson and Jackson 2004, and McCamant et al. 1994.
[28] Hess 2009.

[29] Mol 1996, Mol and Spaargaern 2000, Pellow et al. 2000, Scheinberg 2003, and Schnaiberg and Gould 1994. There is an exchange about the extent to which one can empirically support a claim that there has been an emanicipation of environmental values from the paramount value of profitability. Clearly, such an emancipation, when it will occur, will depend on significant regulatory changes.

[30] Chase-Dunn and Hall 1997.