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ORIGINAL CONTRIBUTION

FACTORS CONTRIBUTING TO NIMBY ATTITUDES

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ABSTRACT. Most discussions about public resistance to hazardous waste facility siting assume that opponents to the projects—those evincing "not-in-my-backyard" (NIMBY) attitudes—have strong environmental values, insufficient or inaccurate knowledge, and can be assuaged by managerial input or economic benefits. Yet our findings suggest that a person's orientation towards the environment is not a significant factor in opposing these facilities, and that knowledge generally works to polarize differences rather than collapse them. Prescriptions for the dilemma revolve around three strategies: education, economic incentives, and inclusion in management. Yet these prescriptions generally do not work as expected, and siting is delayed or scrapped. We propose that the foregoing assumptions are in some ways inaccurate or wrong, and that NIMBY attitudes have a stronger basis in core cultural values than more immediate instrumental considerations. The case of nuclear power is used as an analogy, since research has shown clearly that presentation of the issue as one of deficient public accountability by capitalist institutions has proved more effective than alternative explanations evoking environmental quality or economic efficiency. Technical issues, such as those involving nuclear power and hazardous waste, require intermediaries for most people to understand and interpret the issues and relate them to their core values. But while there are many continuities between the two issues, we find that there are still opportunities for public attitudes toward hazardous waste to develop differently.

1. INTRODUCTION

Prevailing convictions about the so-called "not-in-my-back-yard (NIMBY) syndrome" include the assumptions that (a) NIMBY is an inclusive rejection of a proposed land-use, whether in the form of a hazardous waste treatment facility or another, such as a nuclear power plant; (b) those who reveal NIMBY attitudes are "environmentalists", committed to a set of environmental values; and (c) NIMBY attitudes are developed without substantial knowledge, either about the technical aspects of the issues involved in the controversy, the economic effects of the project itself, or the managerial and regulatory safeguards inherent in any such endeavor.

Starting with those assumptions, many analysts develop siting strategies that we believe are misguided, resulting in attempts to address issues that are not really under contention, and in taking actions and focusing energies that are misplaced. Survey research based on statewide random sample telephone polling in the State of Florida[1] has led us to recognize other factors that contribute to people's beliefs about technical controversies—such as the siting of hazardous waste management facilities. These factors include: (a) the core cultural values that people bring to an issue; (b) the manner in which an issue is presented to the public, through significant opinion leaders in the community and the media; and (c) the ways in which people make preferred connections between their core values and the resulting issue positions. If our understanding of this process is accurate, then those who desire facility siting—whether industrial interests or environmental activists—could address those factors rather than the overrated elements of the issue that are presently stressed. Education, communication, adequate funding, and community involvement will remain desired objectives, but more for their own value and long-term benefits and less as instrumental devices for siting success.

The article will address the evidence concerning generally accepted beliefs about NIMBY, and then offer an alternative explanation for people's attitudes based on core cultural values. The nuclear power issue is used as an analogy because of the rich literature available, from which links to the hazardous waste facility siting issue are drawn.

2. THE NATURE OF NIMBY

Discussions about NIMBY generally assume that it is obvious who the actors are and why they oppose

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local land uses. Yet this "common wisdom" needs examination.

First, NIMBY attitudes represent qualified acceptance as well as qualified rejection. People revealing NIMBY attitudes resist locally unwanted land uses (LULUs), but not necessarily those types of land uses elsewhere. In fact, the survey results show that 64.3% of respondents believe that hazardous waste treatment facilities (HWTFs) *should* be built somewhere, and another 26.9% are in the middle—neither for nor against their being built. Only 8.8% believe the facilities should not be built. Therefore, most of those considered as NIMBYs are not opposed to *all* cases of such land use, wherever it might occur (1).

Second, NIMBYs are not necessarily environmentalists. Our measures show that environmental orientation is *not* a significant factor in opposing hazardous waste siting. The survey shows almost no differences of opinion concerning siting of HWTFs between those with high and low levels of environmental concern. This finding perhaps conflicts with the intuitive assumptions that, per se, people who oppose hazardous waste siting must be environmentalists, or that an environmentalist will naturally oppose such land use.

Generally, those dealing with the NIMBY dilemma have attempted several familiar approaches. These might broadly be termed education, economic stimulation, and inclusion.

As educators, we are predisposed to believe education to be a fundamental path for addressing NIMBYism because it is so consistent with our lifestyles and careers. Yet education tends to reinforce rather than change people's attitudes. For example, often as a community becomes more informed, resistance builds. Our survey findings suggest that, in fact, information is polarizing, and that those who help shape opinions in technological issues—"elites" in our terminology—simply find more convincing material for their beliefs.

Economic incentives, too, have been tried, with little success. Communities can be induced, it is reasoned, by financial rewards associated with such activities: more employment, lower taxes, etc. But the financial tactic is usually unsuccessful, and one reason may be that, as will be discussed later, the very opposition to LULUs is imbedded in people's view of the economic system (1–3).

Finally, it is suggested that including people in the management of these endeavors will increase their support. Familiarity, feeling of control, and building of trust will mitigate fear and suspicion. Studies differ, but our results suggest that there are real and practical difficulties with this strategy, and it tends to reflect the experience of education: familiarity with the objectives and operations tend to strengthen people's initial beliefs (4).

Our analysis relies on alternative explanations for people's attitudes. If lack of education or deficiency of financial incentives are not explanatory variables, then what are? If offers of involvement or common planning do not overcome community resistance, then what types of changes might do so?

In raising these questions, we looked for a comparable issue, one that combined widely shared benefits (or collective benefits) with narrowly borne risks (or concentrated costs). The literature has neglected the potentially powerful parallels between LULUs and other technical controversies, such as those in the 1950s and 1960s over fluoridation or the decades-old debate over nuclear power (5,6). An instructive avenue, then, has been the case of nuclear power, and the development of the issues surrounding it.

3. NUCLEAR POWER CASE AS ANALOGY

The emergence of nuclear power in the 1950s was a dramatic outgrowth of World War II and the technological abilities that the United States displayed. As such, it represented the idea of progress and American ingenuity. That theme—reinforced by the idea of "electricity too cheap to meter"—captured people's imagination for almost two decades.

But the situation changed in the 1960s and 1970s. Many paradigms competed for public attention, but one centering around public accountability—as a controversy between corporate capitalism and its victims—emerged as dominant (7). This paradigm questioned corporate motives and competence, and relied on evoking cultural ties to people's views about capitalism and equality issues. People who questioned capitalist institutions and favored equality approaches were open to antinuclear arguments. It provided better cues for the mass public's reactions than alternative models, such as those involving environmental concerns or cost–benefit calculations. Research has shown that the opposition to nuclear power was rooted in those attitudes toward public accountability, rather than fears of polluting reactors or of costs (7).

The nuclear power experience suggests that mass attitudes appear to be informed by basic cultural values. People "make sense" out of political life by referring to "core values" concerning individualism, capitalism, equality of opportunity, religion, etc. We now understand that these cultural attitudes can serve as a source of dissensus or disagreement as well as one of consensus. And we are interested because *if* people use cultural values to figure out issues, we want to know *how* they do it. From this research, we believe that the extent to which a person's core values will inform or constrain his or her position on an issue depends on

three related variables: (a) the objective content of the issue; (b) the way the issue is framed by elites and intermediaries; and (c) the individual's level of attentiveness to the claims made about the issue.

Obviously, some issues have fairly direct reference to people's core values, such as abortion or gay rights (8,9). People can relate these issues to their own moral or egalitarian values without much direction; they require only minimal attentiveness or social intermediation to be understood. Other issues, lacking these properties, are "hard" issues with unfamiliar technical, means-oriented aspects, and the public's response will depend more on framing by social agents and an individual's attentiveness.

This means that technical issues—such as nuclear power—have no simple referents for people, and so are more open to "framing" by others, such as the media or policy entrepreneurs. Early on, nuclear power was framed as "progress," and that portrayal lasted for some time. People had little else to hang their beliefs on. But, as with many issues, mass behaviors are byproducts of strategic competition among opportunistic elites, who strive to offer a prevailing paradigm. Most fail. But some endure, and these framing attempts—or "packages"—generally have "ideas and language [that] resonate with larger cultural themes" (7, p. 5).

In terms of nuclear power, many issue packages had limited success in influencing mass behavior. Environmental concerns and cost–benefit calculations did not resonate with the mass public. By contrast, packages that explicitly questioned corporate motives or competence fared much better. This means that complex arguments about nuclear power evoked greater reaction if they were cast as debates about capitalism and equality (i.e., public accountability) rather than debates about environmental quality or economic efficiency.

We find that in nuclear power, at least, there is a central role for elites in influencing public opinion on an issue that has weak foundations of understanding in everyday life and remote connections to core values. Also, environmental arguments—vital to cultural entrepreneurs—were not evident as important factors.

Finally, as political attentiveness grew, so did polarization on the issue. As the issue began to be framed differently, people began to tap different core values. The issue package that could appeal to more people's cultural beliefs, then, became increasingly effective as those people were exposed to such a framing of the issue.

As indicated earlier, these packages are most important when the connection between core values and the immediate issue is not direct or evident. Views about homosexuality need little interpretation for most people. The cultural context of nuclear power, however, is much more diffuse, and so needs intermediaries for explication. Attention to these intermediaries and the cues they provide magnifies the effects of an individual's core attitudes.

From this description, we believe that nuclear power policy development illustrates elements important to NIMBY. These include the nature of the issue—whether it directly or indirectly relates to people's cultural beliefs, the competition in framing the issue through the media (including the nature of media understanding and presentation), and the attention people pay to the issue, including how they relate to their cultural attitudes toward capitalism, religion, and science and technology.

4. HAZARDOUS WASTE CONNECTION

We believe these findings are instructive for issues surrounding hazardous waste. In both cases it is clear that the issue has cultural connections rather than an environmental basis. People appear to have a proclivity for arguments that reference their cultural beliefs—for instance, about capitalism and equality. In contrast, there is little relation between environmental beliefs and NIMBY attitudes.

Political ideology is also a poor predictor of attitudes about the siting of HWTFs in this survey. As Table 1 shows, acceptors (those who believe HWTFs should be built in general and are willing to have them in the community) and rejectors (those who believe that HWTFs should be built in general but *not* in their community) are virtually evenly divided among ideological categories. But what we do see is that acceptors have more favorable attitudes toward business and free enterprise and are suspi-

TABLE 1
Support for Hazardous Waste Treatment Facilities By Self-Described Political Ideology

Ideology	Attitude Toward HWTFs				
	Accept	In between	Reject	Total	N
Conservative	21.7%	49.6%	28.7%	100.0%	230
Middle of the Road	22.7%	50.5%	26.8%	100.0%	384
Liberal	21.6%	45.9%	32.4%	99.9%	111
N	161	359	205	—	725

Chi-square = 1.418, NS

cious of government intervention in the economic system. Rejectors, by contrast, have strong egalitarian beliefs and think government should regulate the economy (Table 2).

Also, we find that people who are more politically informed are more polarized, so that those who are well informed are apparently only reinforced in their existing belief systems. Some other characteristics are evident. Acceptors, as opposed to those who are either rejectors or in between the two, are 63.4% male and 36.6% female. In other words, we have found women to be much more opposed to HWTFs than men, even after all possible spurious factors are considered (Table 3). This finding reflects similar research findings on nuclear power (10, 11, 12).

Income differences also arise: acceptors have higher incomes than rejectors. One explanation for this belief is the widespread truism that HWTFs will be located in areas housing lower income families, so that those with higher incomes might see the siting as less of a potential threat than those with lower incomes. We do not know if this is a contributing factor or not.

But acceptors are more likely to believe that there will be a positive or balanced economic impact (88.1%), while rejectors are likely to believe that there will be a negative economic impact (58.9%). Acceptors believe that HWTFs are very safe or fairly safe in very high proportions (87.4%), and, interestingly, while many rejectors deem such facilities fairly unsafe or very unsafe (39%), a healthy majority of rejectors also consider them to be very safe or fairly safe (61%) (Table 4). These measures reinforce the idea that people generally feel that HWTFs are needed and that they are relatively safe (76.9% of all those surveyed), but the problems with siting emerge when people consider who will be planning, siting, and operating those plants, and where those plants will be located. Two separate points or axes that have emerged from our studies, then, are the risk–aversion problem, and the economic–threat problem. More people, apparently, fear the latter than the former. This analysis would indicate that the greatest problem to surmount is associated with how people relate to their economic wellbeing, both concerning their place vis a vis the capitalist institutions they depend upon—both for their immediate and long-term comfort—and the most visible economic commitment they have made—their home.

TABLE 2
Support for Hazardous Waste Treatment Facilities By Support of Capitalism-Egalitarianism

Capitalism Egalitarianism	Attitude Toward HWTFs			
	Accept	In between	Reject	N
Pro-Capitalism	43.5%	39.6%	34.9%	287
In between	28.6%	27.2%	25.8%	199
Pro-Egalitarianism	28.0%	33.2%	39.2%	248
Total	100.1%	100.0%	99.9%	
N	161	364	209	734

Chi-square = 5.482, $p < .10$

TABLE 3
Support for Hazardous Waste Treatment Facilities By Gender

Gender	Attitude Toward HWTFs			
	Accept	In between	Reject	N
Male	63.4%	51.6%	53.6%	402
Female	36.6%	48.4%	46.4%	332
Total	100.0%	100.0%	100.0%	
N	161	364	209	734

Chi-square = 6.338, $p < .05$

5. ANALYSIS

The continuities between these two technical issues, nuclear power plant siting and HWTF siting, are great. Yet it is clear that the hazardous waste issue has a different profile than that of nuclear power, in at least one important dimension. There is no singular package that has attached itself to the hazardous waste issue the way that "public accountability" has in the nuclear field. Cultural entrepreneurs who are "issue surfing" (or searching for the best explanatory variables) may still be able to find a package that engenders resonance among a large sector of the mass public. And media elites appear open to such issue entrepreneurship as well, which is crucial to communicating the frame to the public.

Since media framing is central to the development of prevailing mass attitudes, our interests have extended to exploring attitudes of the media

TABLE 4
Support for Hazardous Waste Treatment Facilities By the Evaluation of the Safety of Such Facilities

Safety of HWTFs	Attitude Toward HWTFs			
	Accept	In between	Reject	N
Very Safe	24.4%	9.1%	9.0%	73
Fairly Safe	63.0%	73.1%	52.0%	370
Fairly Unsafe	8.1%	14.0%	25.4%	93
Very Unsafe	4.4%	3.8%	13.6%	40
Total	99.9%	100.0%	100.0%	
N	135	264	177	576

Chi-square = 58.367, $p < .01$

toward hazardous waste issues. We have found in an earlier survey that the media elites were generally more supportive of building hazardous waste treatment facilities than the general public, both the informed and uninformed public. (Levels of support for building the facilities were 73.1% for the media elites, 67.9% for the informed public, and 63.1% for the uninformed public.) Media elites questioned effects on the environment, and were not generally supportive of hazardous waste sites as local events, but showed an openness to the *concept* of such land uses. However, as in the nuclear issue, their views are distinctly more negative than those of scientists and technical specialists in the field. Thus, one can assume it to be unlikely that a positive frame—such as that concerning nuclear power as progress—would take hold. Impressionistic evidence is that the media continue to highlight the perceived dangers and associated fears about HWTFs. The portrayal of hazardous waste in such a manner opens the public to core value associations that may well reinforce suspicion of capitalist institutions and governmental compliance with those entities, and so lead to opposition superficially based in physical risk possibilities (accidents, leakage, etc.) that are actually rooted more deeply in cultural value orientations toward societal institutions. If this explanation is accurate, then the ramifications for public policy development and change are significant in technically complicated issues such as those surrounding hazardous waste management.

ENDNOTE

1. This survey work was undertaken in November, 1991, by the Florida International University Institute for Public Opinion Research. The method was a random-digit-dialing telephone sample of the adult Florida population, aged 18 and over (N = 1220). Respondents were asked a series of questions about equality, capitalism, religious values, environmental priorities, and hazardous waste treatment facilities. Most of these questions were multiple-category responses gauging direction and strength. What follows are important parts of the question texts showing the basic choices given to respondents. Equality (three questions): (a) should each person "get ahead on his own" or should "the government provide jobs?"; (b) should "the government not concern itself with income differences" or should the government "do something to reduce the differences between rich and poor?"; (c) regardless of treatment, do some people "turn out better than others" or do almost all of them "turn out to be equally worthwhile?" Capitalism (three questions): (a) when businesses are allowed to make as much money as they want, do "workers and the poor get less" or does "everyone profit?"; (b) does government regulation of business "do more harm than good" or is "regulation necessary to keep industry from becoming too powerful?"; (c) do businesses and wealthy people "pay their fair share" of taxes or not? Environmentalism (three questions): (a) if protecting the environmental leads to higher unemployment, is it more important to "protect jobs" or "protect the environment?"; (b) if a new highway will help the economy a lot but destroy some wetland areas, is it more important to "help the economy" or "save the wetlands?"; (c) if given the choice, would the respondent choose "a worse quality of own material life but a higher quality environment" or a "worse quality environment but a higher quality of own material life?" Moral values (two questions): (a) does the "best hope for the future of mankind" lie in "science, technology and human reason" or in "faith in God?"; (b) how important are religious beliefs in respondent's "everyday life?" Hazardous waste treatment facilities (two questions): (a) hazardous waste treatment facilities "should not be built because they cause more problems than they solve" or they "should be built because they solve more problems than they cause"; (b) if you were going to move to the area in Florida where a hazardous waste treatment facility will be located, how close to the facility would you be willing to live? (Those willing to live "within 10 miles" or closer were counterposed to those responding "beyond 10 miles" or "nowhere near.")

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