A SYNTHESIS OF STAKEHOLDER PERSPECTIVES IN SITING CONTROVERSIES

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Introduction

Stakeholder resistance to the siting of noxious facilities – referred to as LULUs ("locally undesirable land uses") by Popper (1981) – has received frequent attention by researchers since at least 1977 when Michael O'Hare published an article entitled "Not On My Block, You Don't." Since then, this seemingly intractable local pattern of resistance to LULU siting has been referred to, often derisively, as the NIMBY (Not In My Back Yard) syndrome. This paper concerns only locational conflicts involving hazardous chemical wastes.

Not all hazardous waste facility locational controversies involve siting proposals, however. For example, Focht (1989) reported a study of stakeholder LULU conflict about the need for and proper means of remediating contamination from an existing facility. He found dynamics similar to those found in siting conflicts. As an analogue to NIMBY, Focht proposed the acronym, TIMBY, for "Threats In My Back Yard," to distinguish remediation from siting controversies.

This paper presents a synthesis of stakeholder perspectives identified in 15 previous studies. This synthesis produces three "ideal types" that seem to dominate these studies. These ideal types are hypothesized to represent the expected views of stakeholders in all locational controversies.

Review of Prior Research on Stakeholder Perspectives

In this section, 15 studies published in the academic literature that characterize stakeholder perspectives are reviewed. Those studies that concern complex and controversial (especially environmental) policy issues, particularly those that involved locational conflict, were preferred. However, two studies that focused on neither environmental issues nor locational conflict were included because they were instructive and applicable to the project (i.e., they concerned perspectives held by government employees who, collectively, represent one of the stakeholder classes [e.g., local citizens, experts, industry representatives, environmental activists, government officials, and perhaps others] and who also comprise one of the four "communities"]).

Six of the 15 studies assess only the perspectives of elites such as industrial, academic, governmental, and/or health care professionals. One study examines only lay citizens as information consumers. Another study characterizes three distinct languages inherent to discourse concerning hazardous waste regulation. The remaining seven studies examine the perspectives multiple stakeholder classes, both lay and elite.

Q Methodological Studies of Multiple Stakeholders

Two empirical studies of multiple stakeholder perspectives of hazardous waste facility controversies using Q methodology were found in the literature. Both concerned nuclear waste facilities. The first is a NIMBY dispute about the proposed siting of a low level radioactive waste repository in Nebraska (Thomas 1990). The other is a Brownfield controversy about the Diablo Canyon nuclear power plant in California (Hill

1992). The Thomas study involved a NIMBY controversy surrounding a proposed siting whereas the Hill study is a Brownfield controversy about risk management at an existing facility.

Thomas' (1990) Star Trek Perspectives

Thomas interviewed 27 undergraduate agricultural students at the University of Nebraska concerning their views of media reporting of a proposed siting of a low level radioactive waste repository in Boyd County. Thomas identified three common perspectives, which he named after the original Star Trek television series' leading characters: rational "Spocks," doubting "McCoys," and pragmatic "Kirks."

- "Spocks" are hyper-rationalists with a technocentric orientation and basic trust of government and private institutions. People having this perspective believe that the news media are not objective - they instead engage in sensationalistic and biased reporting which, Spocks believe, stirs controversy and inflates fear.

- "McCoys" are moralists who exhibit high environmental and justice concerns, have low institutional trust, and perceive unacceptably high risks from technologies such as nuclear power generation and radioactive waste management. To them, the media simply confirm their suspicions that these technologies are too risky and should be opposed.

- "Kirks" are pragmatists who view technological progress as inevitable and who are willing to accept risks in exchange for benefits. They have faith that risks will be satisfactorily managed. They prefer that emotions be excluded from policy dialogue. Finally, they view the media as neither biased nor confirming, but simply another source of information that should be considered in deliberation.

Hill's (1992) Past-Structured vs. Present-Structured Perspectives

In a study of citizen stakeholder views toward the Diablo Canyon Nuclear Power Plant, Hill found evidence of support for his social-process theory of citizen assessment that seeks to explain how citizens evaluate risky technologies. He shows that previous experience and other tacit knowledge are incorporated into schema that in turn structure how citizens assess risky proposals. He presents evidence that supports the argument that citizens' evaluations are more present-structured, more project-specific, and more procedure-oriented than are agency evaluations. He suggests that the past-structured, ideology-based, outcome-oriented biases of agencies produce decisions that are much less socially desirable and far more politically illegitimate than they would be had they included, from the beginning, attentive citizens representing the various social perspectives in policy dialogue.

Hill believes that identifying stakeholder perspectives can best be accomplished by using Q methodology. Interestingly (and for reasons that are not made clear), he uses cluster analysis, rather than the more commonly used factor analysis, to identify well-formed and separated "clusters of opinion" (Converse 1964). He then uses path analysis to construct causal models of citizens' project evaluations using personal control, common orientation, procedural judgment, and substantive effects clusters as independent variables and project support-opposition clusters as the dependent variable.

Hill concludes (p. 151) that his findings conform well to his social process theory. He finds that most citizens' common orientation has little to do with predicting project support or opposition. The sole exceptions are those zealous supporters who manifest high trust and faith in science and technology and zealous opponents who have low trust and low faith. Lay citizens who are more moderate tend to adopt a "wait-and-see" attitude toward siting proposals. In fact, zealots on both sides tend to be distrusted by lay citizens because they act in a manner that seems to be insensitive to community values, biased and manipulative. This is consistent with citizens' preferred reliance on procedural schema.

Empirically, personal control and procedural judgment do well in Hill's model. Supporters are much more willing to defer to expert opinion. Opponents fear a loss of autonomy: they do not believe that problems can or will be detected by the proponents and experts, and, even if they are detected, the problems will not be appropriately addressed. Opponents also react negatively against risks that are imposed without community consent. Judgments about substantive effects weakly mediate these perceptions about personal control insofar as project opposition is concerned.

The substantive effects variable also performs well in Hill's model, but not quite as well as personal control and procedural judgment. When impacts are uncertain, lay citizens tend to trust those individuals who

argue in terms of collectivities. Individual citizens then judge the credibility of the principals and judge whether the collective impacts have personal consequences. Opponents also seem to consider collective adverse impacts (such as health risks to future generations) in their evaluations, demonstrating that their opposition is not motivated by parochial interests.

Hill's model was qualitatively supported by Focht (1995), at least in part, by narrative case studies. For example, citizens in Cushing did not trust an out-of-state national environmental grassroots organization that came into town seeking to offer assistance nor did they trust federal and state agencies. In each of the NIMBY communities – but especially in Haystack – citizens were slow to form positions on the proposals, and those positions that formed were based primarily on how trustworthy the principals were perceived by stakeholders.

Q Methodological Study of Elite Stakeholders

Only one study of elite stakeholders was found that used Q methodology to identify their perspectives.

Durning and Osuna's (1994) Typology of Policy Analysts

Durning and Osuna (1994), using Q methodology in interviews of 38 policy analysts, identify five perspectives. Three of these were found to be quite similar to Jenkins-Smith's (1982) and Weimer and Vining's (1992) ideal types ("objective technicians" [both studies], issue advocates ["issue activists" in this study], and client advocates ["client helpers" in this study]. Two other perspectives seemed to be amalgamations of the original three ("ambivalent issue advocates" and "client counselors"). This finding confirms the truism that actual perspectives on an issue rarely correspond to over-simplified generalizations; perspectives encountered among actual stakeholders are combinations of and interpolations between ideal types. This fact is not lost in our analysis of Oklahoma stakeholder perspectives, as will be made clear later.

- "Objective technicians" prefer objective analyses of policies and favor analytic integrity over policy outcomes and responsibilities to clients.
- "Issue activists" believe that it is their proper role to steer policy toward their desired outcomes, though they are still sensitive to analytic integrity.
- "Client" helpers are those who combine a willingness to assist clients (like the client counselors) but with the fervor of a strategist (like the issue activists).
- "Client" counselors share much in common with the objective technicians but are more willing to consider the wishes of their clients to guide their analyses. However, they are not willing to abandon objective analyses altogether. Rather, they view analytic integrity and political accountability as equally legitimate parts of their job (thus representing a perspective between the objective technician and client helper).
- "Ambivalent issue activists" are an intriguing combination of objective technicians'/client counselors' preferences for objective analyses and issue activists' preference for desired outcomes. Those policy analysts holding this perspective seem to prefer using the best objective arguments that they can to support their desired policy outcome.

Non-Q Methodological Studies of Multiple Stakeholders Groups

The next six studies of multiple stakeholder perspectives were conducted using methodologies other than Q.

Elliott's (1984, 1991) and Hodges-Coppel (1987) Risk Acceptance Patterns

In a hypothetical simulation involving stakeholders in two communities, three hazardous waste siting proposals were offered. One proposed a risk management strategy based on advanced design technology (risk prevention). The second relied on advanced monitoring (detection) and quick and effective emergency response (mitigation). The third proposed emergency trust funds, dispute resolution procedures, and operations oversight by community representatives. Participants were asked to indicate which options they most and least preferred and then to provide responses to questions about the reasons for their choices. From this study, three patterns of preference emerged.

- "Sponsors" perceive low risks, are pro-economic development and pro-technology, approve compensation to risk bearers but do not approve of inducements that may be viewed as bribes. Sponsors also favor private-sector decision making without government intervention. They prefer risk prevention that relies on advanced design technology.

- "Guardians" perceive high risks but believe them to be controllable, recognize that economic development is important to maintenance of a high quality of life, judge technical expertise as necessary but not sufficient, favor direct input into siting decisions, reject compensation and inducements (safety can't be compromised), and are public-interest oriented. They favor community oversight of hazardous waste operations.

- "Preservationists" perceive very high and uncertain risks, are anti-development and pro-status quo, are skeptical about the benefits of technology, fear loss of control over their lives, and view compensation and inducements as extortion. They favor advanced detection and mitigation measures that empower citizens to take personal actions to protect themselves.

A few important differences among these perspectives are worth emphasizing. Opponent groups (guardians and preservationists) are not convinced that more control technology will adequately assure safety; they prefer monitoring and/or management controls. Proponents (sponsors), however, do favor technological controls. This may be due to proponents' desire to retain control over their operations whereas opponents want to share control. The opponent groups also reject compensation and inducements. Finally, sponsors and guardians believe that risks are ultimately controllable; only preservationists are skeptical of risk control technologies.

These results suggest that the implicit distinction separating opponent and proponent groups may be social trust. Hodges-Coppel (1987), in a test of Elliott's typology, addresses the trust issue. Sponsors tend to trust risk managers and technology, preservationists do not, and guardians reserve trust judgment until they evaluate the fairness of the decision process (e.g., openness and balance) and its outcome (e.g., equity).

Each group adopts a different ethic vis-à-vis their views toward technological/locational decisions. Sponsors appear to endorse a utilitarian ethic, based upon their acceptance of the propriety of compensation, pro-technology orientation, progressivist ideology, and high social trust. Guardians appear to have a pragmatist ethic based on a cautious, moderate stance on technology and reluctance to rush to judgment based on ideology. Preservationists, on the other hand, seem to embrace the "new environmental paradigm" ethic of Lester Milbrath (1981). They reject utilitarian decisions that unquestionably accept technological progress as a good and ignore non-technical and non-economic impacts. They also reject the anti-democratic character of elitist, technocratic models of decision-making.

Susskind's (1987) Political Actors

In another extension of Elliott's (1984) typology, Susskind identifies four types of political actors in technological/locational conflicts.

- "Boosters" favor economic growth and represent 10-15% of the U.S. population.

- "Preservationists" oppose any project that threatens the environment or a sense of community (15-20% of the population).

- "Guardians," comprising about 50% of the population, are fence sitters who decide on a siting proposal based on their judgments of the openness and fairness of the decision making process.

- "Non-participants," who comprise the remaining 10-15% of the population, take no stand and remain inactive.

Wedge's (1985) Tower of Babel

Wedge claims that stakeholders' responses to LULU siting suggest the Tower of Babel: everyone communicates in different languages and pursues different purposes. The incoherence produces policy stasis.

- "Technocrats" speak in scientific and legal jargon.

- "Industrialists" speak primarily in economic terms (civic concerns are of secondary importance) and tends to withhold information.
- "Politicians" talk only of compromise and of balancing economic and environmental concerns.
- "Victims" speak in emotional terms based on threats to his or her lifescape, unfairness, and the unresponsiveness and irresponsibility of government and industry. "People who feel under direct threat don't respond passively to being asked to consider the statistics of risk" (p. 26).
- "Advocates" of victims is more dispassionate and communicates better than the others.

The solution to gridlock, in Wedge's view, is to foster a common language and common understanding borne of empathy and respect.

Williams and Matheny's (1995) Competing Languages of Regulatory Legitimacy

Williams and Matheny (p. 10) cite Fiske (1987:14) in defining discourse (and language) as a "system of representation that has developed socially in order to make and circulate a coherent set of meanings about an important topic area. These meaning serve the interests of that section of society within which the discourse originates and which works ideologically to naturalize those meaning into common sense." They argue that one of the major factors hindering the successful conclusion of regulatory policy debates is that disputants fail to communicate effectively due to their different understandings of public interest based on their different languages of social regulation.

- The "managerial" language, an outgrowth of the progressive era in public policy and administration (ideal governmental structure should reflect a clear separation of value-laden politics — the province of political bodies such as elected legislators and executives — from Weberian bureaucracy which embraces efficiency and value-free scientific rationality) is founded on its disciples' "faith in science and technology as remedies for the inadequacies of participatory democracy" (p. 11). This language of expertise, still pervasive in bureaucratic culture (as reflected in recent trends toward risk-based policy making and risk/benefit/cost analyses to justify rulemaking and other decision making endeavors), threatens to undermine public trust of bureaucratic institutions and, in the end, erodes lay citizens' confidence in and their perceived political legitimacy of bureaucratic authority.
- The "pluralist" language "assumes that conflicting interests are the essence of politics and, in a democracy, cannot be resolved by appeal to an overriding public interest discoverable by experts. Instead, the public interest is served by creating an open political process that allows contending organized interests equal opportunity to influence public policy" (p. 20). The main shortcoming of pluralist language in environmental and technological policy debates is that lay citizens often lack sufficient technical expertise and have difficulty gaining access to (and understanding) technical information, both of which are prerequisites to effective democratic participation.
- The "communitarian" language, an alternative to the managerial and pluralist languages in social regulation, "holds that it is possible to sustain an enlightened citizenry capable of ruling directly through communal forms of democracy. The creation of citizens capable of overcoming narrow self-interest would allow doing away with illegitimate political institutions that are removed from popular control and would return government to its true sources of legitimacy: the people" (p. 26). The main problems with this language is that no one has yet developed an effective and relatively efficient way to (1) transform the polity into a political community capable of self-governance and (2) ensure that the inevitable patchwork of local policy making can be made coherent in a regional and national contexts.

Because all three languages fail in finding a way to incorporate all interests in policy making by existing institutions and each language tends to be incomprehensible those who embrace one of the other two languages, Williams and Matheny propose a fourth meta-language based on postmodern ideals of multi-perspective, inclusive discourses "juxtaposed rather than [an] integrated cluster of changing elements that resist reduction to a common denominator, essential core or generative first principle...We have to learn to think and act in the 'in between' interstices of forced reconciliations and radical dispersion" (Bernstein (1991:8-9; cited on p. 37). Borrowing from the work of Dewey, Habermas, Mansbridge, Barber, Forester and others, they propose a "dialogic" model of social regulation which is, at its core, a model based on a dialectical synthesis of languages – a polyglotic approach to discourse most appropriate to "strong"

democratic visions of policy making. Determining which languages should be used in which setting at what time should be left to stakeholders, not captured by elites.

Bord's (1987) Stakeholders' Views of Community Acceptance of Risk

Bord limited his research to those views that state and federal government policy makers and the public have toward low-level radioactive waste. He found two major differences between the stakeholder groups: the public favors power sharing whereas policy makers favor compensation; and the public distrusts local officials to represent their interests in siting decisions whereas policy makers not only trust local officials but prefer to negotiate directly with them on behalf of the community.[1]

Davis (1985) confirms that government officials and industry representatives do not wish to share power with residents of local communities. Both government and industry favor preemption of local authority over delegation to them as well as a multi-member siting board over local government policymaking and interstate agreements.

Rosenbaum (1983) believes that agencies resist public participation because they view themselves as acting as stewards to protect the public interest and they believe that public involvement interferes in the efficient and effective accomplishment of this mission. The irony of course is that this attitude often results in litigation and confrontation that produces the very immobilization that the agencies wish to avoid.

Otway and Fishbein's (1977) Risk-Attitude Factors

Fishbein and Ajzen (1975) defines attitude as a "feeling of favorableness/ unfavorableness towards an object such as an evaluative judgment" (p. 112). Attitudes can be measured as the product of an affective element (evaluation of an attribute, independent of the attitude object) and cognitive element (the strength of belief that the attribute is related to the attitude object). A slight modification of the example given by Greer-Wooten (1988) is illustrative. The affective element (risk attribute without the risk object) can be measured with a Likert scale (-3 = bad to +3 = good) response to the statement, "How do I feel about being exposed to risk without my consent." The cognitive element (risk attribute's relationship with the risk object) can be measured with a Likert scale (-3 = unlikely to +3 = likely) response to the statement, "The siting of a hazardous waste facility in my neighborhood will mean exposing myself to risk without my consent." The product of these two scores represents the attitude score for this attribute (consent to exposure to hazardous waste facility). The sum of such scores across all attributes represents the overall attitude toward the object (hazardous waste facility).

In a study of nuclear power acceptability using the risk attribute scoring method across 39 attributes, Otway and Fishbein (1977) found that factor analysis produces a four-factor solution (orthogonal, varimax rotated). The factors were interpreted as (1) beliefs about psychological risks, (2) beliefs about sociopolitical risks, (3) beliefs about economic and technical risks, and (4) beliefs about environmental and physical risks. This shows that, in this study at least, the risk construct is four dimensional, not one dimensional as technical risk assessors often insist (e.g., risk = probability x consequence). Upon examining the factor loadings in proponent versus opponent groups, two findings emerge. First, cognitive elements are the best predictors of group membership: proponent groups have greater faith in technology and technocratic orientation. While the two groups share common beliefs about risk attributes, they disagree on how the attributes relate to the risk object. Second, the two factors that concerned objective impacts (beliefs about economic and technical risks and beliefs about environmental and physical risks) make a greater contribution to proponents' attitudes whereas the factors that concerned subjective impacts (beliefs about psychological risks and beliefs about sociopolitical risks) make a greater contribution toward the opponents' attitudes.

These two findings suggest that risk constructions are multi-dimensional and that different stakeholders adopt quite different constructions. Proponents base their risk judgments on cognitive elements and

[1] Given these results, the legitimacy and wisdom of the policy of negotiating with local government officials for compensation in order to gain community acceptance of a low level radioactive repository is questionable. In fact, despite years of trying, this policy has not succeeded. Compensation fails to overcome opposition because citizens are not concerned about equity nearly as much as they are concerned about fear and distrust (a discussion of compensation as a solution to NIMBY gridlock is presented in Focht (1995).

objective risk dimensions whereas opponents base their risk judgments move on affective elements and subjective risk dimensions.

Non-Q Methodological Studies of Elite Stakeholders

The following five studies examine the perspectives only of elite stakeholders. Q methodology was not used in these studies.

Richards' (1993) Summary: Who Is the Victim Here?

Both industry and environmental groups, Richards claims, see themselves as victims of unfair and unjust treatment. Industry complains that their expertise is not accorded proper respect, their motives are frequently questioned and their contributions are ignored, the news media is biased against them, regulations are manipulated by those with ulterior motives, environmental interest groups are not held to the same standard of public critique as they are, current decision making processes are grossly inefficient, cost is not given sufficient weight, and change is too fast and impractical.

Environmental interest groups (EIGs) complain that industry is greedy and ignores the public interest (only EIGs speak for the public and for future generations). EIGs believe that industry performs economic accounting that undervalues natural resources and encourages waste, media and government experts are captured by industry, scientific knowledge deserves no greater weight in decision-making than cultural knowledge, and change is too slow. EIGs' perceived duty is to hold government accountable to the public.

Lynn's (1986) Attitudes toward Chemical Risks

Lynn finds a link between political ideology, place of employment, and scientific beliefs about chemical risks among occupational health professionals. In fact, group affiliation (industry, government or academia) predicts risk attitudes better than any combination of demographic characteristics can (Kraus, Malmfors and Slovic 1992).

Those employed in industry are politically more conservative, favor pro-chemical assumptions in risk assessments, think that the public is over-concerned and risk phobic, oppose further government regulation of industry, strongly support the use of cost-benefit analysis in policy making, disagree that extrapolations from animals to humans in toxicity assessments are valid, and believe that there exists a safe-exposure threshold for carcinogens. In a separate study, Davis (1985) also finds that industry officials believe that economic considerations are just as important as health and environment considerations in policy making. Kraus, Malmfors and Slovic (1992) confirmed another of Lynn's findings: industrial toxicologists judge chemical risks far lower than do either academic or government toxicologists.

Lynn finds that toxicologists and health professionals employed in government are more liberal, favor conservative risk assessment assumptions, believe that there are many more risk yet to be discovered, favor additional regulation, are moderately against the use of cost-benefit analysis in policy making, agree that inter-specific extrapolations are valid, and do not believe that there is a safe dose for carcinogens. Davis (1985) also finds that government officials believe that health and environment considerations are more important than economic considerations in policy making.

Health researchers in academia are moderate in their political beliefs, favor moderate risk assessment assumptions, agree with government occupational health professionals that all chemical risks have not yet been identified, favor more regulation, are only weakly supportive of cost-benefit reforms to policy making, are split or are unsure about the validity of inter-specific extrapolations, and are weakly suspicious of the non-threshold claim for carcinogenicity.

Jenkins-Smith's (1982) and Weimer and Vining's (1992) Typology of Policy Analysts

These authors identify three ideal types of policy analysts.

- "Objective technicians" embrace analytic integrity.
- "Issue advocates" champion their own preferences.
- "Client's advocates promote the client's policy preferences.

According to Jennings (1987) and Torgerson (1986:39), the objective technician is a technocratic positivist who strives for value neutrality in a triumph of knowledge over politics, whereas issue and client's

advocates view objective analysis as a "mask for the surreptitious exercise of power" in a triumph of politics over knowledge. The authors prefer the client's advocate model: a post-positivist approach of "analysis as counsel" in which the analyst is a participant-observer in policy formulation and evaluation.

Downs' (1967) Typology of Bureaucrats

Downs describes five ideal types of employees who work in hierarchical government organizations.

- "Zealots" are attracted by the agency's mission and dominate in the early days of the establishment of an agency. Once the agency matures and its mission becomes more diffuse and accommodative, zealots tend to become frustrated and leave.
- "Advocates" are loyal to the organization and its policies and will remain loyal regardless of changes in leadership or mission.
- "Climbers" are self-motivated and ambitious and are most interested in advancing their personal careers. They become unhappy if they hit a glass (or any other type of) ceiling and cease moving up the hierarchy.
- "Conservers" are just the opposite: they are interested primarily in security. They tend to be conservative in their behavior and avoid controversy, preferring instead lower profile and predictable jobs.
- "Statesmen" function well as agency heads – they are interested in the big picture and are good compromisers.

Alexander's (1986) Typology of Bureaucrats

Alexander describes similar types in his identification of the different roles that planners play in their profession.

- "Mobilizers" act as lobbyists to build support for and enhance the legitimacy of policy proposals (similar to Downs' advocates).
- "Mediators" (similar to Downs' statesmen) function as a mediator of conflict during policy implementation.
- "Advocates" (akin to Downs' zealots) work to advance a particular cause or interest, often creating conflict as a result.
- "Technical administrators" is an expert in systematic analysis of objective data (no Downsian equivalent).

Non-Q Methodological Study of Lay Stakeholders

One study that examined the perspectives only of lay citizen stakeholders was found. This study also did not utilize Q methodology.

O'Hare, Bacow, and Sanderson's (1983) Information Consumers

These authors identify five types of information consumers, based on the value (to them) of analysis of risk information. The order implies decreasing reliance on analytical reasoning.

- "Fact respectors" search for facts and do their own analyses.
- "Expertise takers" accept experts' or trusted others' (by virtue of credentials or office) analyses.
- "Attitude takers" adopt positions on the basis of ideology, either their own or that of leaders with whom there is identification.
- "Majority viewers" adopt positions consistent with the predominant view.
- "Personality takers" adopt the position of a charismatic opinion leader, not based on ideology, but rather on the leader's personality.

Synthesis of Stakeholder Perspectives into "Ideal Types"

Though modest differences among different researchers' typologies and descriptions of stakeholder perspectives are apparent, they are overwhelmed by the similarities – making it quite plausible to attempt an integration of their perspectives into a synthetic composite of "ideal types."[2] The studies reviewed above identified between two and five perspectives. In combining similar perspectives, three synthesized, categorical perspectives emerge. Many of the stakeholder perspectives previously identified are quite strongly related to the categories to which they are assigned (e.g., those identified by Thomas; Elliott; Susskind; Hill; and Jenkins-Smith/Weimer and Vining), while others are more weakly so (e.g., those identified by Lynn; Downs; Wedge; Bord; and O'Hare, Bacow and Sanderson).

Of course, not all types identified by the researchers correspond to one of the three categories (e.g., Downs; Alexander; and O'Hare, Bacow and Sanderson) since more than three types are described. Moreover, some researchers identified less than three perspectives (e.g., Hill; Bord; Otway and Fishbein; and Richards). As a result, a perfect fit is not possible for all stakeholder perspectives identified in the latter two groups of studies.

Despite these qualifications, the synthesis proposed in this section is compelling. Each ideal type is explained separately below. The explanations are followed with a tabular summary of the relationships between the perspectives identified in the 15 studies and the proposed ideal types.

Ideal Type A: The Technocratic Rationalist Perspective

Stakeholders adopting this perspective embrace a scientific-technical approach to policymaking and rely on Cartesian (technical) rationality to assess policy acceptability. Technocratic rationalists are inclined to judge that technology and chemicals pose relatively low risks (especially when compared to common risks routinely ignored or minimized by the public) and that these risks are controllable through technology. They tend to embrace an abiding faith in technological solutions to problems, view technological progress as good, and support pro-economic development policies. They value economic efficiency and technical sufficiency in formulating and implementing policy. Preferring objective analyses, they favor benefit-cost analysis, risk analysis, and similar decision-theoretic approaches and resist non-technical "interferences" in policy making. They also accept the validity of compensation as a commensurable tradeoff against risk imposition.

Technocratic rationalists are generally trusting of political and economic institutions. They view the news media and the public as ignorant and biased, favoring policymaking processes that reserve power to elites. They are not predisposed to involving citizens directly in decision-making unless they are technically informed. They would naturally feel comfortable with the managerial view of social regulation.

It is likely that this perspective is typical of those who work in the private sector – particularly those in industry – as well as many of those employed in government and in technical research/science-based academic arenas. Technocratic rationalists can be expected to support, even boost, proposals for hazardous facility siting and remediation if they are based on acceptable (to them and their peers) scientific and economic analyses. However, the technocratic rationalist perspective is not expected to be common among citizens not employed in these sectors and should be rare among environmental activists, whether they are affiliated with local ad hoc grassroots groups or formally constituted national and international non-government organizations (NGOs).

Ideal Type B: The Pragmatic Guardian Perspective

Pragmatic guardians are generally not ideologically committed to acceptance or rejection of technological/locational proposals. They prefer to reserve judgment on the merits of a proposal until they have sufficient opportunity to learn about potential impacts – social as well as technical – on them and their communities. Their chief concern is that the policy outcome is fair and equitable and considers community values. Until they get the facts, they rely on procedural schema concerning balanced arguments, free access to information, and open debate from all sides – similar to the tenets of the

[2] The relevance of this synthesis will be made clearer in the discussion of second order and composited first order Q factor interpretations of stakeholder perspectives exhibited in those Oklahoma communities that had experienced hazardous facility siting or remediation controversies.

pluralist (and if non-adversarial and consensus-seeking, the dialogic) languages of legitimacy. They have a reservoir of trust in sociopolitical institutions but will quickly distrust those that violate principles of fairness.

Pragmatic guardians have a conditional faith in technology. While they recognize the value of technological progress and economic growth as important to maintenance of a high quality of life, pragmatic guardians also value government regulation to protect them from hazards. They recognize that more needs to be done to understand the risks posed by hazardous technologies. In addition, they do not accept the idea of trading off health and environmental risks for economic compensation. In sum, pragmatic guardians are cautiously optimistic, preferring to share power and fulfill oversight responsibilities to ensure that technological progress brings benefits at reasonable cost.

If Susskind (1987) and Hill (1992) are correct, most of the population is composed of pragmatic guardians. These stakeholders represent the swing vote in community acceptance or rejection of LULU proposals.

Ideal Type C: The Disaffected-Ideological Opponent Perspective

The disaffected/ideological opponent perspective is either community-based (client advocacy) or ideology-based (issue advocacy). It is characterized by a distrust of political and economic institutions, a moderate to low faith in technology, and an aversion to technological progress – especially if it threatens the status quo social or physical environment. Those with this perspective adopt a social (sometimes even parochial) construction of risk and risk acceptance. They tend to perceive high levels of risk and high uncertainties associated with technologies and their supposed benefits.

Disaffected-ideological opponents generally tend to favor active government intervention, especially by local government agencies, to protect them from abuses by industry and supra-local governments. Because of their high level of social distrust, they favor community control over power sharing – insisting on a communitarian view of policy legitimacy. Those with this perspective are unlikely to be persuaded to support a technological project based on technical and economic arguments. Guided by cultural rationality and a desire to prevent technological intrusion into their lives, they value preservation of existing lifestyle patterns over change. It may be appropriate to predict that those with this perspective, at least in some cases, are potential hard-core locational opponents.

The table on the next page summarizes the posited relationships among the stakeholder perspectives reviewed above. The three ideal type perspectives synoptically developed from this review are arrayed across the top of the table, while the 15 studies are arranged in rows on the left. The various perspectives identified by the researchers are presented in the body of the table.

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Ideal Types Derived from a Synthesis of Research on Stakeholders' Perspectives

RESEARCHER	IDEALIZED STAKEHOLDER PERSPECTIVES		
	Technocratic Rationalists	**Pragmatic Guardians**	**Disaffected-Ideological Opponents**
Thomas	Rational Spocks	Pragmatic Kirks	Doubting McCoys
Elliott & Hodges-Coppel	Sponsors	Guardians	Preservationists
Susskind	Boosters	Guardians	Preservationists
Wedge	Technocrats and Industrialists	Politicians	Victims and Victims' Advocates
Williams & Matheny	Managerial	Pluralist and Dialogic	Communitarian
Jenkins-Smith and Weimer & Vining	Objective Technicians	N/A	Issue Advocates and Client Advocates
Durning & Osuna	Objective Technicians	Client Counselors and Ambivalent Issue Activists	Client Helpers and Issue Activists
O'Hare, Bacow & Sanderson	Expertise Takers and Some Fact Respectors	Some Fact Respectors, Some Attitude Takers, and Majority Viewers	Some Attitude Takers
Alexander	Technical Administrators	Mediators	Advocates & Mobilizers
Downs	Advocates	Statesmen	Zealots
Richards	Industry Groups	N/A	Environmental Interest Groups
Lynn	Industrial and Some Academic Health Professionals	Some Academic and Some Government Health Professionals	Some Government Health Professionals
Hill	Past-Structured	Present-Structured	Past-Structured
Otway & Fishbein	Cognitive-Objective Risk Construction	N/A	Affective-Subjective Risk Construction
Bord	Risk Acceptors	N/A	Risk Aversives

References

Alexander, E. R. 1986. *Approaches to Planning: Introducing Current Planning Theories, Concepts, and Issues*. New York: Gordon and Breach.

Allen, Frederick W. 1987. "Towards a Holistic Appreciation of Risk: The Challenge for Communicators and Policy Makers," *Science, Technology and Human Values* 12(3/4):138-43.

Ashford, Nicholas A. 1987. "The Limits of Cost-Benefit Analysis in Regulatory Decisions." In *Resolving Locational Conflict,* ed. Robert W. Lake. New Brunswick, NJ: Rutgers.

Ashford, Nicholas A. 1988. "Science and Values in the Regulatory Process," *Statistical Science* 3:377-83.

Association of State and Territorial Solid Waste Management Officials (ASTSWMO). 1995. ASTSWMO Brownfields Workshop (Summary). Washington, DC: ASTSWMO.

Berman, Stephen H., and Abraham Wandersman. 1990. "Fear of Cancer and Knowledge of Hazardous Waste Sites," *Social Science and Medicine* 31:81-90.

Bernstein, Richard J. 1991. *The New Constellation: The Ethical-Political Horizons of Modernity/ Postmodernity.* Cambridge: MIT Press.

Blackburn, J. Walton. 1988. "Environmental Mediation as an Alternative to Litigation," *Policy Studies Journal* 16(3):563-76.

Bord, Richard J. 1987. "Judgments of Policies Designed to Elicit Local Cooperation on LLRW Disposal Siting: Comparing the Public and Decision Makers," *Nuclear and Chemical Waste Management* 7:99-105.

Bradbury, Judith A. 1989. "The Policy Implications of Differing Concepts of Risk," *Science Technology and Human Values*. 14:380-399.

Brown, Steven R. 1980. *Political Subjectivity: Applications of Q Methodology in Political Science*. New Haven: Yale University Press.

Buckle, Leonard, and Suzanne Thomas-Buckle. 1986. "Planning Environmental Mediation in Context: Lessons from 'Failed Mediations,'" *Environmental Impact Assessment Review* 6:55-70.

Carlo, George L., Nora L. Lee, Kelly G. Sund, and Sydney D. Pettygrove. 1992. "The Interplay of Science, Values, and Experiences Among Scientists Asked to Evaluate the Hazards of Dioxin, Radon, and Environmental Tobacco Smoke," *Risk Analysis* 12:37-44.

Carter, Luther J. 1987. *Nuclear Imperatives and Public Trust: Dealing With Radioactive Waste*. Washington, DC: Resources for the Future.

Converse, Philip E. 1964. "The Nature of Belief Systems in Mass Politics." In *Ideology and Discontent*, ed. David Apter. New York: Free Press.

Crowfoot, James E., and Julia M. Wondolleck. 1990. *Environmental Disputes: Community Involvement Conflict Resolution*. Washington, DC: Island Press.

Davis, Charles E. 1985. "Perceptions of Hazardous Waste Policy Issues Among Public and Private Sector Administrators," *Western Political Quarterly* 38:447-63.

Douglas, Mary, and Aaron Wildavsky,. 1982. *Risk and Culture: An Essay on the Selection of Technical and Environmental Dangers.* Berkeley: University of California Press.

Downs, Anthony. 1967. *Inside Bureaucracy*. Boston: Little, Brown.

Ducsik, Dennis W. 1978. "Electricity Planning and the Environment: Toward a New Role for Government in the Decision Process." Ph.D. dissertation, MIT, Boston, MA.

Durning, Dan, and Will Osuna. 1994. "Policy Analysts' Roles and Value Orientations: An Empirical Investigation Using Q Methodology," *Journal of Policy Analysis and Management* 13:629-57.

Earle, Timothy, and George Cvetkovich. 1995. *Social Trust: Toward a Cosmopolitan Society*. Westport, CT: Praeger.

Einhorn, Hillel J., and Robin M. Hogarth. 1978. "Confidence in Judgment: Persistence in the Illusion of Validity," *Psychological Review* 85:395-416.

Elliott, Michael L. Poirier. 1984. "Improving Community Acceptance of Hazardous Waste Facilities through Alternative Systems for Mitigating and Managing Risk," *Hazardous Waste* 1:397-410.

Elliott, Michael L. Poirier. 1991. "Social Conflict Assessment in the Design of Risk Management Systems." In *Risk Analysis: Prospects and Opportunities* (Advances in Risk Analysis, Vol. 8), ed. Constantine Zervos. New York: Plenum.

Fiorino, Daniel J. 1988. "Regulatory Negotiation as Policy Process," *Public Administration Review* 48(4):764-772.

Fishbein, Martin, and Icek Ajzen. 1975. *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.

Fischhoff, Baruch, Paul Slovic, and Sarah Lichtenstein. 1977. "Knowing With Certainty: The Appropriateness of Extreme Confidence," *Journal of Experimental Psychology: Human Perception and Performance* 3:552-64.

Fiske, John. 1987. *Television Culture.* London: Methuen.

Focht, Will. 1989. "Groundwater Remediation Controversy in Ponca City: A Case for Negotiated Decision Making." Presented at the annual meeting of the Oklahoma Academy of Science, University of Central Oklahoma, Edmond, November.

Focht, Will. 1993. "An Normative Model of Legitimated Decision Making," *NAPEC Quarterly* 6(1):8-9.

Focht, Will. 1995. "A Heuristic Political Inquiry into NIMBY Conflict: Exploring Solutions to Gridlock." Ph.D. dissertation, Oklahoma State University, Stillwater, OK.

Focht, Will. 1996. "Uncertainty, Controversy and Distrust: Why Risk-Based Decision Making Has Limited Utility as a Decision Rule." Invited presentation delivered at the International Conference on Social Trust in Risk Management, Bellingham, WA.

Focht, Will, and James J. Lawler. 1996. "The Use of Q Methodology in Policy Dialogue." Presented in the *Symposium on Q Methodology and Public Policy* at the annual meeting of the Association for Public Policy Analysis and Management, Pittsburgh, PA, October 31-November 2.

Focht, Will, and James J. Lawler. 2000. "Using Q Methodology to Facilitate Policy Dialogue." In *Social Discourse and Environmental Policy,* ed. John Proops and Helen Addams. London: Edward Elgar Publishing (in press).

Freudenberg, Nicholas. 1984. *Not in Our Backyards! Community Action for Health and the Environment.* New York: Monthly Review Press.

Greer-Wooten, Bryn. 1988. "The Science of Locational Risk or The Risk of Locational Science?" In *Complex Location Problems: Interdisciplinary Approaches*, ed. Bryan H. Massam. North York, Ontario: York University, Institute for Social Research.

Hill, Stuart. 1992. *Democratic Values and Technological Choices*. Stanford, CA: Stanford University Press.

Hodges-Coppel, John. 1987. "State Roles in Siting Hazardous Waste Facilities," *Forum for Applied Research and Public Policy* 2(3):78-88.

Jenkins-Smith, Hank. 1982. "Professional Roles of Policy Analysts," *Journal of Policy Analysis and Management* 2(1):88-100.

Jennings, Bruce. 1987. "Policy Analysis: Science, Advocacy, or Counsel?" *Research in Public Policy Analysis and Management* 4:121-34.

Kasperson, Roger E. 1986. "Hazardous Waste Facility Siting: Community, Firm and Governmental Perspectives." In *Hazards, Technology and Fairness,* ed. Roger E. Kasperson. Washington, DC: National Academy Press.

Kasperson, Roger E., Dominic Golding, and Seth Tuler. 1992. "Social Distrust as a Factor in Siting Hazardous Facilities and Communicating Risks," *Journal of Social Issues* 48:161-187.

Kasperson, Roger E., Ortwin Renn, Paul Slovic, Halina S. Brown, Jacque L. Emel, Robert L. Goble, Jeanne X. Kasperson, and Samuel J. Ratick. 1988. "The Social Amplification of Risk: A Conceptual Framework," *Risk Analysis* 8:177-87.

Kraft, Michael E., and Bruce B. Clary. 1991. "Citizen Participation and the NIMBY Syndrome: Public Response to Radioactive Waste Disposal," *Western Political Quarterly* 44:299-328.

Kraus, Nancy N., Torbjorn Malmfors, and Paul Slovic. 1992. "Intuitive Toxicology: Expert and Lay Judgments of Chemical Risks," *Risk Analysis* 12:215-32.

Krimsky, Sheldon, and Dominic Golding. 1992. *Social Theories of Risk*. Westport, CT: Praeger.

Lynn, Frances M. 1986. "The Interplay of Science and Values in Assessing and Regulating Environmental Risks," *Science, Technology and Human Values* 2(2):40-50.

McFarland, Cathy, and Michael Ross. 1982. "The Impact of Causal Attributes on Affective Reactions to Sureness and Failure," *Journal of Personality and Social Psychology* 43:937-946.

McKeown, Bruce, and Dan Thomas. 1988. *Q Methodology*. Newbury Park, CA: Sage.

Milbrath, Lester W. 1981. "Environmental Values and Beliefs of the General Public and Leaders in the United States, England, and Germany." In *Environmental Policy Formulation: The Impact of Values, Ideology, and Standards*, ed. Dean E. Mann. Lexington, MA: Lexington Books.

National Academy of Science. 1983. *Risk Assessment in the Federal Government: Managing the Process*. Washington, DC: National Academy Press.

O'Hare, Michael. 1977. "Not On My Block, You Don't: Facility Siting and the Strategic Importance of Compensation," *Public Policy* 25:407-58.

O'Hare, Michael, Lawrence Bacow, and Debra R. Sanderson. 1983. *Facility Siting and Public Opposition*. New York: Van Nostrand Reinhold Company.

Otway, Harry J., and Martin Fishbein. 1977. "Public Attitudes and Decision Making." In *Research Memorandum 77-54*. Laxenburg, Austria: International Institute for Applied Systems Analysis.

Otway, Harry J., and Detlof von Winterfeldt. 1992. "Expert Judgment in Risk Analysis and Management: Process, Context, and Pitfalls," *Risk Analysis* 12:83-94.

Plough, Alonzo, and Sheldon Krimsky. 1987. "The Emergence of Risk Communication Studies: Social and Political Context," *Science, Technology and Human Values* 12(3,4):4-10.

Popper, Frank J. 1981. "Siting LULUs," *Planning* 47(April):12-15.

Portney, Kent E. 1991. *Siting Hazardous Waste Treatment Facilities: The NIMBY Syndrome*. New York: Auburn House.

Rabe, Barry G. 1994. *Beyond NIMBY: Hazardous Waste Siting in Canada and The United States*. Washington, DC: The Brookings Institution.

Rayner, Steven, and Robin Cantor. 1987. "How Fair Is Safe Enough? The Cultural Approach to Technology Choice," *Risk Analysis* 7:310.

Richards, Mark. 1993. "Siting Industrial Facilities: Lessons from the Social Science Literature." Presented at the Fifth Annual International Conference of the Society for the Advancement of Socio-Economics. New York.

Rosenbaum, Walter A. 1983. "The Politics of Public Participation in Hazardous Waste Management." In *The Politics of Hazardous Waste Management*, ed. James P. Lester and Ann O'M. Bowman. Durham: Duke University Press.

Ross, Lee D. 1977. "The Intuitive Psychologist and His Shortcomings: Distortions in the Attribution Process." In *Advances in Experimental Social Psychology*, Vol. 10, 173-200. New York: Random House.

Ross, Lee D., Mark R. Lepper, and Michael Hubbard. 1975. "The Perseverance in Self-Perception and Social Perception: Biased Attributional Processes in the Debriefing Paradigm," *Journal of Personality and Social Psychology* 32:880-892.

Rushefsky, Mark E. 1982. "Technical Disputes: Why Experts Disagree," *Policy Studies Review* 1:676-85.

Stephenson, William. 1953. *The Study of Behavior: Q-Technique and Its Methodology*. Chicago: University of Chicago Press.

Susskind, Lawrence E., and Jeffrey Cruikshank. 1987. *Breaking the Impasse: Consensual Approaches to Resolving Public Disputes*. New York: Basic Books.

Thomas, Kerry. 1981. "Comparative Risk Perception: How the Public Perceives Risks and Benefits of Energy Systems," *Proceedings of the Royal Society of London, Series A* 376:35-50.

Thomas, L. Lee. 1990. "Nuclear Waste Concerns, the Media, and the 1990 Nebraska Governor's Race: An Application of Q-Technique." University of Nebraska-Lincoln, School of Journalism.

Torgerson, Douglas. 1986. "Between Knowledge and Power: Three Faces of Policy Analysis," *Policy Sciences* 19:33-59.

Wedge, Bryant. 1985. "The NIMBY Complex: Some Psychopolitical Considerations." In *Not in My Backyard!: Community Reaction to Locally Unwanted Land Use*. Charlottesville, VA: Institute for Environmental Negotiation, University of Virginia.

Weimer, David, and Aidan Vining. 1992. *Policy Analysis: Concepts and Practice.* Englewood Cliffs, NJ: Prentice-Hall.

Whittemore, Alice S. 1983. "Facts and Values in Risk Analysis for Environmental Toxicants," *Risk Analysis* 3:23-33.

Williams, Bruce A., and Albert A. Matheny. 1995. *Democracy, Dialogue, and Environmental Disputes: The Contested Languages of Social Regulation*. New Haven: Yale University Press.