The Importance of Nonobjective Judgments in Environmental Impact Assessments

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The practice of environmental impact assessment (EIA) is shaped in large part by the values and beliefs of the professionals involved. Values—or nonobjective personal judgments of merit or worth—influence the choices made at all junctures of an impact assessment. Personal or nonobjective considerations affect outcomes more than is usually recognized. We intend to describe some of the value choices

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typically encountered in EIA and to analyze the ways in which planners and engineers typically handle them—sometimes well, sometimes not so well. We think it is important for impact assessment practitioners to become more aware of the value considerations that shape seemingly technical decisions and to develop conscious strategies for dealing with them.

Our data come from four EIA case studies: (1) sludge disposal in South Paris, Maine; (2) sewering in North Branford, Connecticut; (3) relocation of the northern segment of Boston's central highway artery; and (4) relocation of a mass transit line in Boston's Southwest Corridor. Case summaries are presented with each of the case discussions in this article, and three of the cases appear in full later in the issue. We also draw on the environmental impact assessment literature.

The case studies were prepared by graduate students in the Department of Urban Studies and Planning at the Massachusetts Institute of Technology. The cases were selected because they were recent, the active participants in the EIA process were accessible, and the projects involved were relatively controversial. Each case is built upon interviews probing the key actors' perceptions of decisions made during the assessment process. Through the interviews, we sought to discover how the professional teams had been chosen and how they had developed their work plans. We asked about such things as public participation, precision of data, and concerns about uncertainty. We asked what the actors had learned from their experience with these particular assessments. Through indirect questioning, we hoped to pinpoint key value considerations, whether these were conscious and explicit or not. We have inferred values from actions and choices.

The preparation of each case study involved interviews with six to ten individuals. Most of the interviews were at least one hour long. Some of the interviewees were members of government agencies and citizen groups; most were engineers and planners from the teams selected to carry out the impact assessments and write the environmental impact statements (EISs).

We have identified seven key steps or aspects of the EIA process that appear to be shaped in large part by the value judgments of individual participants: (1) the choice of professional team members; (2) the organization of the work plan; (3) approaches to coping with uncertainty; (4) attitudes toward mitigation; (5) approaches to public participation; (6) the use of data for and the style of forecasting; and (7) attitudes toward the role of the EIS in planning and decision making. While some of these seven can be pinned to decisions made at particular stages of the EIA process, others are linked to attitudes that pervade the entire endeavor.

Our four case studies illustrate how particular value considerations tend to be handled and tend to influence outcomes. A final section of the article discusses the implications of our findings for the training of EIA practitioners.

We offer the case examples, and particularly the revealing quotations from the actors involved, as illustrations rather than as definitive proof that values play a particular role in the EIA process. Our primary purpose is to heighten the sensitivity of planners and engineers involved in the preparation of impact assessments. We hope to uncover a range of nontechnical considerations that are often hidden and to encourage EIA practitioners to develop more conscious strategies for handling value judgments honestly and effectively.

CHOOSING THE TEAM

Our South Paris, Maine, case* illustrates particularly well how choices made in the selection of the team can have repercussions throughout the assessment process and affect outcomes. Considered a "disaster" by team members, this case involved a series of disputes and delays that ended with the preparation of an EIS, the findings of which have been completely ignored by the client. Much of the "disaster" can be understood by looking at the choices made in selecting the team.

Three kinds of choices are ordinarily involved in putting a team together. Typically, the technical capacity of the team is matched with the apparent scope of the project, and a team leader with management capacity is selected. Less typically, team members may be selected because of their previous experience with similar places, problems, or clients. Even less typically, team members m&y be chosen for their ability to work together. How each of these three choices is handled depends on how the client's mandate is interpreted by the EIA contractor.

A team is usually chosen to fit the problem as perceived and defined by the client. But what if the client's definition is hazy or later proves to be inaccurate? EIA practitioners make a key choice in deciding how to interpret a client's mandate.

In the South Paris case, the U.S. Environmental Protection Agency (EPA) originally defined the problem narrowly and technically. It asked that the EIS "identify the optimum method of sludge disposal for South Paris, that is the most cost effective alternative with acceptable environmental impacts." The word-of-mouth mandate was narrower: the EPA wanted data on the properties of the effluent likely to be discharged from the new wastewater treatment plant and on the geology and soil conditions of potential dumping sites. The EPA apparently felt that the controversy leading to the EIS had arisen mainly because of the absence of these data. Although the EPA's written mandate stressed the importance of active involvement of citizens, this objective received little emphasis. The EPA representatives interviewed did not see the controversy as politically charged. The political nature of the EIS became apparent to all, however, when the team was about to publish the draft EIS. At this point, the Maine Department of Environmental Protection (DEP) contested the team's recommendations. Joined by other parties involved, DEP rejected the

•See page 338 for summary of case,

"These decisions were shoved down my throat and I take no responsibility for them." Thus, although the third EIA team did integrate staff with long-term involvement with outside specialists, and did integrate planning specialists with engineers, the alliance was not particularly cohesive.

Part of the difficulty with the first and second EISs was the lack of engineering expertise ("not enough detail on transit alternatives"). The more integrated third team wrote a more successful EIS. In the Orange Line case, however, this does not so much imply that planners were not specialized enough in engineering to write an EIS as it suggests that more engineering specialists might have been productively involved in the planning process. The expertise and commitment of both planners and engineers were needed for both the planning and the EIA functions of this group, and, when this need was acknowledged, the project flourished.

The Orange Line case provides some particularly instructive illustrations—partly because it began with so dramatic a reversal of the traditional separation of planning and assessment. The case is also instructive because its long history of early failures shows the actors learning from and becoming more aware of key choices and value judgments.

HANDLING VALUE JUDGMENTS IN PRACTICE

Our findings show EIA practitioners making nonobjective judgments in a wide range of situations. At times particular choices led to "disaster"; at other times the same choices appeared to lead to a successful outcome. The outcome of the South Paris team's decision to accept its client's definition of the problem, for example, contrasts sharply with the North Branford team's similar decision. Differences in outcome result not so much from a "right" choice or series of choices as from choices in which value judgments are in keeping with the complexities of the situation. The choice just mentioned worked well in North Branford because in that case, the client's view of the problem was well-founded and enabled the team to deal well with other nonobjective dimensions of the situation.

Since there are no right value judgments and since nonobjective choices are inevitable, what are some of the ways practitioners can handle such considerations effectively? The first alternative is obvious: *become more aware of the choices as choices.* Knowing that a choice has been made enables one to change that choice. Had the South Paris group realized that it had *chosen* a narrow view of the problem and that its team membership and work plan had resulted from this basic choice, it might have maintained more control over the outcomes by changing its definition of the problem, its team members, or its work plan at any time. Yet members continued to believe that their objective posture and traditional work plan were the only possible responses. To hide from the nonobjective elements

of our most rational pursuits is to make ourselves victims of them. Impact assessment professionals must take this into account.

In addition to becoming more aware of choices, two other strategies are possible. One is to make hidden value judgments explicit so that they can be discussed with others. For instance the head of the Southwest Corridor Office in our Orange Line case made several key judgments in deciding that his staff of planners and professors (all antihighway activists) could rewrite the first EIS without the expertise of an engineer. If he had verbalized and discussed his underlying view that the task at hand was not a technical one, rather than merely *thinking* that such a strategy would work because ‘‘all the basic decisions had been made,” others’ reactions might have helped him realize that the EIS was sure to ‘‘lack detail on transit.” Putting nonobjective concerns into words and consulting with a wide range of people regarding their validity does not relieve practitioners of responsibility, but it may help them develop a clearer perspective on the choices and value judgments that they do make.

Finally, nonobjective judgments may also be handled in a more formal way. In addition to acknowledging, verbalizing, and discussing them, practitioners can insist on an official agreement about how to treat key nonobjective, nontechnical choices. Judgments involving the definition of the problem, the scope of costs, allocation of work hours, strategies for public participation, precision of data, etc., may be talked through with the client and written into formal contracts or agreements. Such a strategy will force the client and others to become more aware of their own underlying values. More importantly, it will oblige other actors to share responsibility for the value judgments that are made and for their consequences.

IMPLICATIONS FOR THE TRAINING OF EIA PRACTITIONERS

Values are so personal that professionals rarely discuss them. We usually become aware of each other’s values through productive clashes with people whose judgments differ from our own. An EIA process often provokes such productive clashes. Our interviews revealed that many of the professionals involved in the EIAs we studied became more aware of their own values in the process. One engineer (who had previously worked only with other engineers) appreciated working on the Boston Central Artery project with planners, architects, and lawyers who had different viewpoints: "Through these experiences, I realized that there were more important questions than the grade of the road.” An Orange Line engineer told us, ‘‘I lacked . . . the sense of connecting things to people, working with designers gave me some of this sense.” Planners often said they had learned specific engineering skills. "More importantly,” one added, he had "learned how to pay attention to detail

and to look at the big picture at the same time." Such interactions may also serve to help dispel bias. One planner found his stereotype of engineers "untrue": "They were very sensitive about the effects that this project would have on the community."

Properly undertaken, the EIA process can stimulate awareness of (or change) values. A Central Artery engineer learned from experience with responsive citizens that he could trust the participation process: "If we don't walk in with our minds made up ... they won't fight us." The project manager of the Anderson-Nichols team, whose firm handles many EISs, feels this work has affected his firm's values: "Because of our EIS experience, our assessments are much more objective than a lot of others. . . I think the exposure the company had to the EIS process had a feedback on the assessments we're putting out. . . . There's an interaction . . . [with] our other projects."

Since it is usually not possible to provide the experience of working on a real EIA during the period that professional engineers and planners are in school, we must find other ways to help future practitioners become more sensitive to the important role that nonobjective judgments play in the EIS process.

Case studies like ours can be read and discussed from many different perspectives. It is not so important that values and choices be labeled or analyzed in any particular way. Rather, what is important is that students recognize the operational impact of value judgments. (The South Paris Case is a "natural" for establishing that nonobjective judgments constantly affect the most technical-seeming decisions.) A traditional case discussion method—in which reductive explanation of failure or success are rejected and all possible interpretations are investigated—can help future practitioners probe how a different set of values might have affected outcomes differently.

Cases can also be used as the basis for gaming. Students can benefit enormously from role playing the behavior of particular actors in specific case situations. (For instance, it might be useful to play-act a Central Artery team meeting with the community to discuss whether the impacts of surface street alignments should be omitted from the EIS). The ideal cases for role playing are those in which many different personal and professional viewpoints are involved and choices are not at all obvious. To sharpen interdisciplinary differences in view, it might be possible to try gaming with students from several schools or departments; engineering, planning, and architecture students might play their professional counterparts in the Central Artery case, for example. Or roles might be reversed or scrambled. The most useful, pedagogically, are those that provide enough detail so that students are able to relate to the attitudes and views of the characters they are playing without having to ad-lib or invent essentials. The most important goal of gaming exercises is for students to understand their own values by contrasting theirs with the values of the characters they are playing and of the others with whom they interact in class.

A variation on the gaming technique is to focus on professionals' communication with nonprofessionals, for it is in this transaction that values are most typically revealed. It's illuminating to watch professional engineers and planners explain a project straightforwardly to nonprofessionals (in what a Central Artery team member called "people English"). Students might be asked to evaluate simulated presentations (presented on videotape for ease of analysis). Students rarely have difficulty discerning the values of the professionals involved.

Analyses of cases, gaming exercises, and careful appraisals of simulations are all means to an end. EIA practitioners must be taught to recognize the importance of nonobjective judgments in their work. Students must understand the consequences that subjective choices can have in any given situation. They must be shown that different value judgments would yield a different outcome in the same case. More specifically, future practitioners ought to be taught that (1) EIA practitioners often give advice and make judgments that are not based solely on technical training; (2) all technical judgments have a range of value judgments embedded in them; and (3) some technical judgments are more constrained by value choices than others. It is a mistake for practitioners to pretend that nonobjective judgments play no part in their work. Rather, each practitioner should develop a "personal theory of practice''—an approach to accepting responsibility for nonobjective judgments and helping clients understand when and how such judgments shape professional behavior and advice.