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FUTURES: PREPARING TODAY FOR TOMORROW'S ISSUES

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Speaking about legislators and citizens, Harlan Cleveland in *The Futurist* magazine not long ago said, "We know in our hearts that we are in the world for keeps, yet we are still tackling 20 year problems with 5 year plans, staffed by 2 year personnel working with 1 year appropriations. It's simply not good enough" (Cleveland, p. 59). Can the public policy process, with the assistance of education, be more future-oriented rather than crisis-short-term-oriented? In this presentation we want to challenge ourselves as public policy educators to view our work through a futurist perspective, including the use of techniques for generating futures perspectives among public officials, citizens, other stakeholders and experts.

To provide a concrete basis for a discussion of techniques for futures perspectives related to public policy education efforts, I will focus first on a current policy situation in the state of New York: the issue of alternative municipal sewage sludge disposal. After briefly describing this public policy education situation, I will describe how four major approaches for generating futures perspectives are relevant to the case and to the work of public policy educators.

A Public Policy Education Situation

Disposal of municipal sludge is a growing problem in terms of environmental impacts and economic costs for communities of all sizes (Hill, 1990). The volume of sludge will increase as more wastewater treatment plants meet United States Environmental Protection Agency (EPA) guidelines. Ocean-dumping of sludge will terminate by December 31, 1991. Alternatives for disposal are becoming more restricted because existing landfills are being closed and it is becoming more difficult to site and develop new facilities. Energy costs of incineration and the concern for better air quality standards make these facilities problematical. A lack of municipal experience with disposal alternatives contributes to negative public attitudes about and acceptance of alternatives, e.g., agricultural and forest land application (Decker and Donovan).

Southeastern New York, including New York City and Nassau, Suffolk, Westchester, Rockland, Putnam, Orange, Dutchess, Ulster, Sullivan, Columbia, Green and Delaware counties, produces approximately 515 dry tons of municipal sludge per day. Almost 79 percent of this is dumped in the ocean. Since this disposal method can no longer be used after December 31, 1991, even more pressure will be placed on alternatives requiring more economic and environmental resources. New York City and Nassau and Westchester counties will be affected most by the termination of ocean dumping. New York City has entered a consent agreement with the EPA to meet the 1991 deadline. New York City has contracted with consulting engineering firms to develop a sewage disposal plan as an alternative to ocean dumping. While the consulting engineering firms have demonstrated their technical expertise in sludge management, they do not possess the technical expertise or the delivery network necessary to develop and implement an education and citizen participation program. However, without the development and implementation of the education program, it is unlikely that any regional sewage sludge disposal or beneficial-use strategy will be developed for Southeastern New York (Gigliotti and Peyton).

Cornell Cooperative Extension and the Cornell University Center for Environmental Research, along with faculty members from several departments including the Department of Natural Resources, have been requested by New York City's Department of Environmental Protection (NYC DEP) and New York State Department of Environmental Conservation (NYS DEC) to develop a policy education and citizen involvement pilot project to develop a plan for a comprehensive, regional educational program that will meet the need to: (a) increase public awareness of the situation/problem; (b) increase public understanding of available alternatives and their related economic and environmental costs/benefits; (c) improve understanding of technical, economic and environmental aspects of all sewage sludge disposal and beneficial-use alternatives among policy makers, public officials, and interested individuals; and (d) improve understanding of NYS DEC and EPA regulations for all alternatives among policy makers to become effectively involved in the policy making process.

In reflecting on this case, we could focus on this public policy education situation from a political perspective in relationship to power and decision rules that may influence the outcome, for example, governmental bodies that have domain. We would view the case within the context of an historic dispute between New York City and suburban or upstate counties and how that dispute may bias consideration of all alternatives by localities outside the major populated areas. We could analyze the quality of the technical alternatives and the gap that exists between technical planners, experts and scientists, and citizens. All these analyses deserve consideration. However, let us discuss this situation from a futurist point of view, taking into consideration several approaches for generating futures perspectives, opportunities and potential responsibilities for public policy educators.

From a futurist perspective, this case suggests a need for anticipatory learning; forecasting and projection approaches; prevention and adaptation or impact studies; and futures invention and creation efforts as integral to public policy education (Deshler). Each of these four major approaches to generating futures perspective will be described briefly in reference to this sewage sludge management policy education situation.

The Importance of Anticipatory Learning

As a futurist, the first thing I notice about this case is that it is typical of most crisis-oriented public policy decision situations that result from futures thinking avoidance. It is a case of "backing into history" rather than anticipating it. For years, New York City and adjacent counties have been dumping sewage sludge into the ocean. Most citizens have not thought about where it goes, and even if they did know they have not cared much about the long-term damage to the ocean. While municipal planners have been aware that someday it may have to stop, and marine scientists have been gathering evidence of ecological damage, public officials have tended to put out the most troublesome crisis-oriented, mass media-newsworthy public fires. However, they have ignored stories that are not an imminent crisis, sewage sludge having been a low profile item until now. Our election process does not foster long-term planning beyond the next election on the part of public officials. Planners are continuously ignored and frustrated by a political process that responds to popular demands and special interest power. In addition, government, as a type of special interest group itself, tends to protect its own short-term interests. In this case, it has meant continuing to use the cheapest way to get rid of sludge as long as possible. It is typical to allow the status quo to operate until a crisis occurs. The crisis in this case has come in the form of known damages to the environment and a federal mandate. It is interesting to speculate whether, without a federal mandate, New York City, or any other major city for that matter, would ever really consider the termination of ocean dumping of sewage sludge on its own initiative. In this case, we have evidence of futures avoidance. Such avoidance leads to "muddling through" or making decisions according to what is convenient to implement. In a futures avoidance mode, "fast relief" measures are taken easily, with no thought about long-term effects. Failure to consider the future may lead individuals as well as governments to self-serving solutions that ignore the well-being of future generations. In contrast, long-term futures perspectives are more likely to lead to solutions that are sustainable. Dumping sewage sludge into the ocean is no longer viewed as a sustainable solution.

The primary result of futures thinking avoidance is "learning by shock" (Botkin, et al.), that is, waiting until some crisis occurs as a requisite for learning. "Learning by shock" is reactive, rather than proactive. It has been costly throughout human history but, up to now, people could afford to "muddle through," because the consequences generally affected specific places and only the immediate generation

that made those short-sighted choices. With the power of today's technology and the intensity of impact on increased populations, failure to anticipate some irreversible consequences can threaten all people and future generations. We no longer can afford to "learn by shock." Furthermore, relying on the knowledge of the past no longer is sufficient. We must anticipate potential crisis and construct knowledge.

The public policy education task in relationship to New York sewage sludge is enormous due to past avoidance of futures thinking and "muddling through." We public policy educators in New York should be asking why we have waited until this crisis to promote anticipatory learning regarding sewage sludge. Now that little public policy education has been conducted on the issue, a vast pool of ignorance and bias exists among the general public and among local government officials, a climate not very conducive to genuine dialogue between large municipalities, where the bulk of sludge is produced, and local rural government, where the sludge most likely will have to be disposed.

Do we as public policy educators have a responsibility to identify issues prior to their becoming a public crisis? Do the policy education models we assume relegate our work to the reactive mode: finding our role only after a crisis has occurred? In the Issue Evolution-Educational Intervention Model (House and Young) the process begins with *concern*, and suggests that the educators role is to "listen actively, ask clarifying questions, and provide background information based on research" (House and Young, Selected Readings section, pp. 39-40). Is it good enough for us as public policy educators to wait to begin our work until a concern has become a public crisis? Do we have any role in creating the concern, based on our knowledge of potentially destructive or impending trends? Do we have a role in promoting anticipatory learning? How many other issues out there deserve anticipatory learning? Are we to do more than administer educational "CPR" after local governments or citizen action groups have identified a "learning by shock" situation? Anticipatory learning techniques include games, simulations and futures literature review as well as the use of media to overcome futures avoidance thinking regarding potentially important issues.

Forecasting and Projection Studies

How can we, as public policy educators, take a future-oriented stance toward policy issues? One way is to appreciate the use of forecasting and projection techniques that may alert us, and those with whom we can work, to issues that are likely to emerge so that we can assist groups in their anticipatory learning prior to a crisis period.

All projections and forecasts are based on two major assumptions. The first assumption is that there are known regularities, patterns and cycles in events we are forecasting. The second is that the rate or amount of change in what we are studying can be discerned from careful attention to past records and experiences and then compared to pres-

ent observable indicators; or that we can make estimates based on known causality. In short, forecasting begins with our knowledge of the past or present and extends this knowledge, by inference, into the future. The important aspects of forecasting are identification of historical precedent; established regularities or theories; appropriate leading indicators; and quality information from which implications, trends and projections into the future can be made. The oldest, and perhaps most useful, technique for projection and forecasting, is that of locating historical precedents and making comparisons to one's present situation.

Although some public policy issues today have few historical precedents, we should begin by asking whether there are any historical precedents for considering the emergence of issues, because similar issues have emerged elsewhere. Trend extrapolation techniques help us to observe an increase or decrease in indicators for which we have data. Cross impact analysis is another projection technique that helps us project the positive or negative impact of two or more anticipated events on each other and on other events. It can be used to anticipate the consequences of federal legislation on local policy issues or vice versa. When data are lacking, the judgments of experts regarding forecasting and projections can be used through a series of inquiry and judgment rounds called a Delphi analysis. Many computer on-line data bases and programs are being developed to assist municipalities and even small countries in identifying emerging issues that need to be addressed prior to the emergence of major crises.

When we consider these approaches in regard to our sewage sludge issue, we can, through "Monday morning quarterbacking," appreciate the relevance of (a) projections of sludge production, (b) historical precedents of off-shore pollution conditions from other major cities, (c) land prices for solid waste sites, (d) increase in environmental lobbying on the hill, and (e) increases in environmental legislative proposals elsewhere. Even Delphi panelists would probably have identified sewage sludge disposal as an emerging issue ten years ago.

What responsibility do public policy educators have for assisting their publics in identifying important emergent issues through projection and forecasting approaches? Can public policy educators alert their publics to historical precedents? Should we take the initiative in forming Delphi panels? Should we encourage the use of futures research methods by faculty members in land-grant universities? Again, must we wait for a public policy crisis to develop before we, as policy educators, become activated?

Prevention and Adaptation or Impact Studies

The starting point for projection and forecasting approaches to futures perspectives is in the past, from which implications for the future are drawn. The starting point for prevention and adaptation studies, however, is a proposed course of action or event and its

estimated effect on the future. A proposed course of action could be the construction of a building or a new highway, or a change in public policy that will affect a specific population. Sometimes the event is the introduction of a new technology or treatment, or the discovery that a past event or practice may be placing people or the environment in jeopardy. Prevention and adaptation studies are focused on identifying and interpreting either potential risks, or the undesirable, hazardous and unintended consequences of specific proposals. The assessment is intended to let us know if the innovation or proposed action calls for subsequent adaptation, if proposals should be abandoned, or if we should initiate new precautions. The systematic study of impacts from a wide variety of proposals is now known as "risk assessment." Economic impact assessments have been around for a long time. More recently, we have become concerned about possible unintended effects of our technologies. Society has become more aware of environmental dysfunctions and indirect and delayed impacts of technology on natural resources. This has led to environmental impact assessment. Once the door was opened to environmental impact assessment, researchers took little time to recognize that social impact assessment had been neglected.

Conflicts are inherent to impact assessments. Typical tradeoffs or decision dilemmas associated with most impact assessments include: (a) short-term benefits versus long-term costs; (b) tolerable risks versus benefits and costs; (c) economic benefits versus environmental protection; (d) benefits to some versus burdens to others; and (e) benefits to present generations versus costs to future generations. One purpose of an impact study is to make these choices manifest. The choices obviously are not all technical, but are value-laden and ethical as well. Impact assessments often focus on conflict among special interest groups, organizations, government, the general public and those who are attempting to represent future generations.

Impact assessments, as futures techniques, are key ingredients to the fifth or *consequences* phase of the Issue Evolution-Educational Model (House and Young). During this phase, the task is to "assemble and distribute objective information on consequences of each alternative" and to "help people make their own predictions of alternatives" (House and Young, Selected Readings Section, p. 40). This will be a tall order for the municipal sludge policy issue, given the negative perceptions regarding any alternative and the distrust on the part of rural people toward urban municipalities.

Much of the public controversy and potential learning benefit over the sewage sludge disposal situation in New York will focus around various impact assessments of alternatives. Municipalities and county government will be most interested in economic impact analysis. Each technological disposal alternative must undergo impact analysis for each proposed application site. In addition, the environmental impacts for agricultural or forestry applications must be assessed for each application site. Even if these assessments turn out to be somewhat benign and risk is believed by experts to be technically low, there is

no assurance that the public will politically accept these solutions, given the strength of the "not in my backyard" (NIMBY) phenomenon. Clearly, the familiar "decide - announce - defend" process of planners, engineers and scientists, based on scientific rationality, will be inadequate in regard to municipal sludge policy (O'Hare). Involvement in the impact assessment process appears to be essential.

To some extent, technological, environmental and social impact or risk assessments are attempts to exert democratic control over special interest group benefits that could be implemented at the expense of the public interest or the interests of the less politically or economically powerful. As such, participation in the assessment is as important as its findings. Citizen involvement can assist in bridging the gap between factual technical analysis and value-oriented policy decisions. Several approaches to participation that have been tried include: (a) gathering data from a wide range of parties that are likely to be affected; (b) including interested parties and stakeholders on planning committees to react to the risk assessment done by experts; (c) involving interested parties in working together to create adaptations and alternative plans for innovations once their potential impacts have been assessed; and (d) encouraging and conducting participatory research controlled by interested parties. This last form of involvement can be particularly important in situations in which government agencies are unresponsive; try to minimize or cover up consequences that are embarrassing; or receive limited resources for risk assessments. The influence of many grassroots groups has resulted in government and industry carrying out technological, environmental and social risk assessments. Without involvement of citizens in the sewage sludge application assessments, government will find it difficult to convince citizens who are likely to suspect government of "skimping" on the funding of adequate impact studies of alternatives, "glossing over" risks for the sake of economic solutions, or being partial to the wealthy in the selection of application sites and alternative technologies.

What is the role of public policy educators within the context of conflict over these prevention and adaptation futuring techniques? I suggest that public policy educators have the responsibility to perform the following tasks in relationship to impact assessments: (a) identify conditions and situations that require impact assessments; (b) act as brokers between citizens and organizations that perform impact studies, including land-grant institutions and government agencies; (c) disseminate findings from impact assessments to the general public and assist people in their interpretations; and (d) facilitate dialogue among interested parties concerning the value bases for decisions. Public policy education regarding potential consequences (impact studies) of alternative disposal approaches to sewage sludge will be complex to interpret, value conflicted among interested stakeholders, and not limited to a rational process.

So far we have considered the importance of anticipatory learning, projection and forecasting, and prevention and adaptation approaches

to futures perspectives. Let us now turn to the invention and creation approach.

Invention and Creation Approach

Invention and creation techniques for futures perspectives differ from other techniques in that the future is no longer viewed as a continuity determined by the past or as an unintended consequence to be avoided. Rather, the future is viewed as a creative possibility. The world is viewed as "open" rather than as "closed." The future is not considered something that is already decided and that gradually reveals itself to us, but as something that is to be invented and created. This approach invites us to expand our choices, raise our aspirations, and experience new motivation for positive action that imaginative possibilities can bring. Those who accept the invention and creation way of viewing the future believe that social and cultural change is a product of the interaction of people creating images of the future in contrast to present structures, beliefs and values. The emphasis is upon a guiding vision, directing idea, preferred condition, valued future or impelling goal. What is important to this perspective is that alternative ends become defined and contrasted with existing reality; resources harnessed; and strategies selected in service to the vision (Deshler). Invention and creation techniques for generating futures perspectives include preference surveys, value audits, imaging, scenario building and futures history writing.

Futures invention and creation techniques can be viewed as key ingredients to the fourth or *alternatives* phase of the Issue Evolution-Educational Intervention Model (House and Young). During this phase, the task is "help people generate alternatives, seek objective information on alternatives, and facilitate communication and exchange of viewpoints" (House and Young, Selected Readings section, pp. 39-40).

The sewage sludge policy education case will require the invention of new technology in the processing, application and disposal of sludge. Many experts are engaged in generating technical alternatives through research. There are known alternatives to ocean dumping. However, the center of the sludge policy issue appears not to be technical. What has to be invented and created are new policies and social arrangements and, most difficult, the creation of collaboration between urban and rural areas. This invention process can be informed by preference surveys and value audits. But the most important task, upon which adequate solutions may hinge, will be the creation of processes to bring urban and rural public officials, environmental groups, scientists and policy educators together in a context that can build trust and mutual planning and fair social and political arrangements for the future of sludge management. The imaging of these arrangement will be necessary, as will be scenario creations of alternative proposals to involve communities in the decision process. New state legislation, as well as model local legislation, may have to be invented and enacted. The creation and invention process, anticipatory learning approaches, projection and forecasting efforts, and education that accompanies impact

studies appear, at this time, to be essential elements in public policy education efforts regarding municipal sewage disposal alternatives.

A Critical Theory Framework

In closing, I want to place futurist-oriented public policy education within a larger "critical theory" framework. Habermas (1987, 1984), a German political philosopher, drawing on the work of Durkheim and Mead, suggests that the human species maintains itself through socially coordinated activities of its members and that this coordination is established through communication and, in certain spheres of life, through communication aimed at reaching agreement. Habermas maintains that, in addition to satisfying the conditions for scientific rationality, it is necessary for social communicative action to do the same for moral, aesthetic and explicative rationality. New issues and agreements are constantly emerging by means of opposing forces whose conflict leads to qualitative and relatively rapid social change.

The conflict resolution and creation of future policies regarding sewage sludge in New York, according to the critical theory of Habermas (1987, 1984), may depend upon social communicative competencies that include not only the rational purposive (scientific), but also the moral interpretive, aesthetic expressive, and explicative discourse (communication directed toward language itself). A corollary is that the mechanisms of social integration and system reproduction become dysfunctional when rational-purposive discourse and related instrumental action crowd out moral interpretive discourse, aesthetic-expressive critique, and explicative discourse and related communicative action. In short, I hypothesize, according to this theory, that our public policy efforts regarding sewage sludge disposal will be quite futile if our educational efforts are limited to or dominated by scientific rational knowledge regarding alternative disposal proposals. According to this theory, what we will have to emphasize in order to obtain a more satisfactory, ecologically sound social agreement will be a concern for moral responsibility and economic justice (fairness in cost sharing and risk bearing), sensitivity to aesthetic demands of rural and poor people, and careful attention to language issues. Language issues include attention to urban-rural communication patterns and protocol, minimization of scientific jargon, attention to cultural assumptions, awareness of attitudes embodied in metaphors, and the use of understandable legal language. New terms for alternative applications may have to be invented to encompass new beneficial usages. Negative attitudes and assumptions embodied in the term "sludge" may also need to be examined.

About six months ago while traveling through Minneapolis, I read a curious story in the newspaper about a place called Livingston, Montana, just north of Yellowstone National Park. The story reported that several hundred members of the Church Universal Triumphant were awaiting word from their church leaders to enter their bomb shelters to anticipate the imminent end of the world. The story said that Ken

Anderson, Park County Public Health Officer, and County Commissioners Carlo Cieri and Jim Hunt had just inspected a bomb shelter that did not have proper plumbing and sanitation facilities. They said that they would cite anyone living in the shelters. I have not read any stories about how this all turned out. However, I said to myself that this story is a parable about both a dysfunctional way of viewing the future and the inescapability of sludge management. "If you don't believe there is a positive future, then you will end up living in your own waste." At the macro level we are all likely to be just as foolish if we do not become futurists in our public policy efforts and address the issue of our waste products.

REFERENCES

- Botkin, J.W., M. Elmandjra, and M. Malitza. *No Limits to Learning: Bridging the Human Gap*. Oxford, England: Pergamon Press, 1979.
- Cleveland, H. *The Futurist*, 1985.
- Decker, D.J. and D.D. Donovan. "Planning the Elements of a Policy Education and Informed Citizen Participation Program on Sewage Sludge Disposal Alternatives: A Pilot Project for Southeastern New York." Grant proposal submitted by Cornell Cooperative Extension, Cornell University Department of Natural Resources, and Cornell University Center for Environmental Research, 1990.
- Deshler, J.D. *Working With Our Publics: Module 7: Techniques for Futures Perspectives*. Raleigh NC: North Carolina State University, North Carolina Agricultural Extension Service and the Department of Adult and Community College Education, 1988.
- Gigliotti, L.M., and R.B. Peyton. *A Manual for Public Involvement in Planning Sludge Management Programs*. Lansing MI: Michigan Department of Natural Resources, Ground Water Quality Division, (no date).
- Habermas, J. *The Theory of Communicative Action*. vol. I. Thomas McCarthy, trans. Boston MA: Beacon Press, 1984.
- Habermas, J. *The Theory of Communicative Action*, vol. II. Thomas McCarthy, trans. Boston MA: Beacon Press, 1987.
- Hill, D.K., ed. *Rural Futures: News of Interest About Rural New York*. Albany NY: New York State Legislative Commission on Rural Resources, June 1990.
- House, V.W., and A.A. Young. "Methods for Policy Education." *Working With Our Publics: Module 6: Education for Public Decisions*. Raleigh NC: North Carolina State University, North Carolina Agricultural Extension Service and Department of Adult and Community College Education, 1988.
- O'Hare, M., L. Bacow, and D. Sanderson. *Facility Siting and Public Opposition*. New York NY: Van Nostrand Reinhold, 1983.

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