Mobilization and Participation of Citizens Groups in Improving the Quality of Water Resources Environments

By

Luther P. Gerlach
Department of Anthropology
University of Minnesota

The work upon which this publication is based was supported in part by funds provided by the United States Department of the Interior as authorized under the Water Resources Research Act of 1964, Public Law 88-379

April 1973
Minneapolis, Minnesota

WATER RESOURCES RESEARCH CENTER
UNIVERSITY OF MINNESOTA
GRADUATE SCHOOL

CONTENTS

FOREWORD

This Bulletin is published in furtherance of the purposes of the Federal Water Resources Research Act of 1964. The purpose of the Act is to stimulate, sponsor, provide for, and supplement present programs for the conduct of research, investigations, experiments, and the training of scientists in the field of water and resources which affect water. The Act is promoting a more adequate National program of water resources research by furnishing financial assistance to non-Federal research.

The Act provides for establishment of Water Resources Research Centers at Universities throughout the Nation. On September 1, 1964, a Water Resources Research Center was established in the Graduate School as an Interdisciplinary component of the University of Minnesota. The Center has the responsibility for unifying and stimulating University water resources research through the administration of funds covered in the Act and made available by other sources; coordinating University research with water resources programs of local, State and Federal agencies and private organizations throughout the State; and assisting in training additional scientists for work in the field of water resources through research.

This Bulletin is number 57 in a series of publications designed to present information bearing on water resources research in Minnesota and the results of some of the research sponsored by the Center. This Bulletin is concerned with the structure and function of the ecology movement; recruitment and commitment to the ecology movement; and ideology of the ecology movement particularly with respect to water resources. The results of the research should assist the State and the nation in developing ways in which the public can gain a better understanding of systemic implications of policy choices regarding the environment.

This Bulletin serves as the Research Project Technical Completion Report for the following Center project:

OWRR Project No.: B-031-Minn
Matching Grant Agreement No.: 14-31-0001-3096
Project Title: Participatory Ecology: A Study of Citizens Groups Involved at the Grass Roots to Improve the Water Resources Environment
Principal Investigator: Luther P. Gerlach, Department of Anthropology, University of Minnesota
Project Began: July 1, 1969 Project Completed: June 30, 1972
FCST Research Category: 06-B

Publication Abstract:

The ecology movement has the same general characteristics of segmentary, polycentric, reticulate organization as such other movements as the Black Power Movement and the Pentecostal Movement. The diverse groups concerned with environmental issues can be arranged on a continuum from established and routinized to new and radical. These groups proliferated rapidly from about 1969-1972.

The ecology movement functions as a whole because of the way its different segments interweave in a network. There is considerable overlap between ecology groups and various "counter-culture" segments.

Recruitment to ecology groups is characteristically through face-to-face contact instead of via large scale advertising. Commitment to the ecology movement was not accomplished as dramatically as with Black Power or Pentecostalism. The opposition to the ecology movement was real and often powerful but environmentalists often perceived it to be more sinister and powerful than was the case. Common ideology concepts of the ecology movement are: doomsday theme, share guilt for environmental degradation, finite resources leading to a zero sum game, closed system and spaceship earth, need for recycling, need to control or limit growth, ecosystem and interdependence, need for significant change, and system change means lifestyle change.

Publication Descriptors: *Ecology Movement/ *Environmental Issues/ *Environmental Ideology/ Water Resources

Publication Identifiers: *Black Power Movement/ *Pentecostal Movement / * Counter-Culture

INTRODUCTION

From July 1, 1969 through June 30, 1973 we conducted a study of participation of citizen groups in improving the quality of water resources environments. This research has been a significant and integral part of our longer (since 1965) and ongoing study of movements of revolutionary change and personal transformation, and relates to our analysis of the dynamics of change in all aspects of the USA lifeway. We conceptualized these citizen groups as part of one major movement of change in the USA, namely the environmentalist or "participatory ecology" movement, as we called it. Our work on the participatory ecology movement emerged in early 1968 as an outgrowth of our study of charismatic renewal and black power movements.

Our concern has been to understand the structure, function and dynamics not only of these and other movements specifically, but of movements as a class of events, and to see how they contribute to system change. This particular study of movement activity directed at water resource environments has contributed much to the development of our general models of movements and change, just as the development of these models has helped us to conduct research on citizen groups and their roles. We have learned much by comparing the participatory ecology movement particularly with the charismatic renewal, and with black power, but also with other movements in the USA and with such cross cultural and historical movements as the rise of Christianity, the rise of Islam, the rise of the reformation in the 16th century, Mau Mau, the Cargo Cult, etc. And, such comparisons have helped us put participatory ecology and water resources concerns in better perspective.

As we see and describe it, the ecology movement interweaves both in harmony and conflict with other movements in the USA today, and this has generated waves of transforming change. These forces for change have countered conventional culture, and created multiple alternatives to such convention. These forces for change have triggered both positive and negative response from so-called established orders, leading to a condition in which it is now often difficult to distinguish such established order from social movement. In many cases such distinction is mainly a convenience of analysis. Movement and response are now interacting complexly to generate a new lifeway. We refer to this process of change as "futurization," to distinguish it from "modernization." In short, then, this study of participation of citizen groups in improving the quality of water resources environments has contributed to our development of a model of movement structure and function, of a model of movement interaction with established orders, and of a model of resultant fundamental ecosystem or lifeway change.

In the pages which follow, let me summarize some of the main steps and findings which led us to this particular study of some aspects of the ecology movement. Because we have reported so extensively elsewhere on our findings, I shall not go into every detail of our research project, but instead I will frequently refer to our publications. And, because research continues on the process of change in which the ecology movement has played so vital a part, I shall suggest new questions which we are raising and seeking to answer.

BACKGROUND TO STUDY

Movements

In 1965, together with a small and informal team of graduate and undergraduate students and my colleague V. H. Hine, I began the study of a religious movement, Neo -Pentecostalism or the Charismatic Renewal, as manifested in Minnesota. Eventually, we observed and studied Pentecostalism in such other States as Florida and Wisconsin, and examined its spread in Haiti, Jamaica and Mexico. When we began this research, we did not perceive Pentecostalism as a movement, but instead as a religious sect. This was in keeping with the conventional academic theological and popular wisdom of the time. We also shared the common proposition that people joined such Pentecostal sects primarily because of problems which they experienced, such as disorganization, deprivation, or personal defectiveness. We referred to this later as the "3-D model" of why people join movements.

Essentially this model assumes that movements are primarily a consequence of pathology, either the pathology of movement members or the social pathologies from which members seek relief. Later we were to argue that is is more useful to consider movements as forces for change which can and do recruit quite stable, healthy individuals and which have the function of making people who were previously satisfied or at least resigned feel sufficiently deprived or threatened to fight for change. V. H. Hine critically summarizes the "3D" views and offers alternative concepts in a set of manuscripts prepared for the project.

In sum, we came to consider deprivation, etc., as at best facilitating movement growth. We also determined that there were many different kinds of Pentecostal groups attracting participation from quite diverse sectors of society. We found it useful to arrange groups on a continuum from conventional, main line and established fundamental pentecostalism on the one end to quite unconventional, radical, and new home meeting groups on the other. The Jesus Movement as it is now called would spin off from this unconventional pole of the movement. We saw that the more radical groups consisted chiefly of upper middle class suburbanites, seeking deeper and more personal religious experience than they could obtain in their established churches. A distinguishing characteristic of such individuals and groups was their quest for the gift of tongues, i.e., speaking in tongues. We saw this not as a manifestation of personal disturbance, but rather as a commitment act and experience through which the tongue speaker showed that he had burned his bridges to old ways and was committed to new ways. Through it he incurred criticism of family and colleagues and frequently opposition from established religious or social orders. Once "radicalized" in this fashion, the new convert then went out to recruit others. Such personal recruitment is a key factor in making the movement grow, although we noted that people are recruited chiefly to groups within a movement, rather than to the movement as a whole. The groups are held together by common ideology as well as various and multiplex patterns of overlapping participation, personal interaction and the work of traveling evangelists.

We realized that the new Pentecostalism was better characterized as a movement of change than as a sect or a haven of misfits. We found it most important to determine what factors of organization, recruitment, committment, ideology and opposition made this movement work than to seek its supposed causes. Indeed, it appeared to us that those most interested in finding out what caused Pentecostalism to grow were either trying to determine a counter to it to save established churches, or trying to support traditional theories about religion's function as a kind of opiate for defectives.

Black Power

By 1966 and early 1967 we shifted some focus to the study of the growing black power movement. Again, we began in Minnesota but quickly also moved to examine case studies in other areas: Milwaukee and South Florida being the most important. Although we recognized the role of deprivation as a facilitating condition for Black Power, we felt that the important factors in its growth and impact were factors internal to it. We applied our five factor model from the Pentecostal study to the Black Power case and in the process were able to refine the model. We defined the crucial factors as (1) "A segmentary, polycephalous, networked social organization; (2) personal, face-to-face recruitment to specific local groups; (3) commitment by experience and/or act; (4) a "split-level" ideology, including a powerful general theme and specific local premises and ideas: (5) perception of an opposition which is strong enough to be a challenge, weak enough to be overcome.

We learned most about movement, social organization and commitment during this study of black power. We found that the social organization of the Pentecostal Movement, namely a segmentary, decentralized and many-headed organization, tied together in a network of overlapping membership, cross-crossed by evangelists, was characteristic also of black power. Furthermore, our literature search revealed similar organization aspects in early Christianity and the Reformation, as well as possibly in other movements in early formation. Conventional wisdom had it that such organization was defective, since it weakened a movement through divisive factionalism. Some observers of the black movement felt that it was a function of black social organization or disorganization and inability to "get together." But we clearly showed that it was a more general phenomenon, characteristic of many, if not most, social movements. Also we demonstrated that it was a highly adaptive type of organization during the period of movement growth and expansion. For example, such organization gives the movement diversity and flexibility instead of locking it into the master plan of a central command. If one group succeeds, the others learn from this and all profit; if one group fails, the others do not all come tumbling down but learn what not to do. There is something in this profusion of different groups to attract many different people, - a kind of movement organization smorgasboard. The success of one also motivate others - creating a kind of escalation of effort effect. Looking at it another way, the proliferation of movement cells does not signal movement death, but rather expansion and life.

As we did for Pentecostalism, we were able to range Black Power groups on a continuum from established-conservative (such as NAACP in 1968) to radical-militant (such as an organization called Man Man). We also analyzed the various demonstrations and conflicts with the established order involved in Black Power as commitmant acts in Black Power and compared this with what we had learned from the study of Neo-Pentecostalism.

Method and approach of research on Pentecostalism and Black Power

We used participant observation and interview (both structured and unstructured). We focused on illustrative case studies which we found during field research in the Twin Cities of Minnesota, in Milwaukee, South Florida, and in special field surveys in Haiti, Jamaica and Mexico. We complimented these field studies with cross-cultural and historical example drawn chiefly from library research, but certainly amplified from the earlier (1958-1960) field research of Gerlach among the Digo of East Africa, on aspects of their Islamization.

We found it useful to add to our findings by developing and employing a questionnaire to learn more about the Pentecostal Movement. We attempted to develop a similar questionnaire for Black Power, but found it quite inappropriate, considering the resistence of the black community to such instruments, and considering the inadequacy of using such an instrument, especially under these conditions. We were able to develop our questionnaire for Pentecostalism only after we had conducted much research of the participant observation and informal interview type. We have good reason to suspect research based primarily on the use of questionnaires developed apart from the context of field work, especially questionnaires which are extrapolations from various instruments developed by social scientists for quite other purposes. While we are sure that it is often important to be able to count and quantify (if only to convince other social scientists) we certainly do not feel that "if you can't count it, it does not exist," as we have sometimes heard.

Newspapers and magazines, both conventional and "underground" reported much about the Black Power Movement and established order response, and response of other social movements. Early in our research we began to clip and file important news reports in such media. By 1968, we had experimented with various methods of coding and cataloging such materials. We expanded such clipping to include reports about other social movements, including the "counter-culture", the "new life" and the like. We now have an extensive library of coded clippings from 1967-1971 dealing with Black Power, the new left, the counter-culture, women's lib, etc. Essentially, we coded under categories of social organization, recruitment, commitment, ideology, opposition.

We also surveyed TV reports and reported on some of these. Furthermore, many special institutes and projects arose during this period to deal with and analyze such movements, and we have attempted to learn about many of these and record some of their reports. And, of course, professional papers, books and the like developed around these subjects, and we surveyed these. In short, we have accumulated an extensive library of data, only part of which we used directly in our writings. The basic data remains available for subsequent use by other students and scholars.

PARTICIPATORY ECOLOGY

Background

By early 1968, we used our five factor model to anticipate the rise of another movement - that which we called Participatory Ecology in a paper delivered in November 1968 at the American Anthropological Association annual meetings in Seattle. We projected that this movement would spin off from the routinized, conventionalized "conservationist" approach. We felt that it would do this much as the charismatic renewal (and subsequently the Jesus movement) had spun off from fundamental, established Pentecostalism, and as Black Power had spun off and leaped away from more cautious civil rights and the almost establishment urban league and NAACP. That is, we felt that myriad little local groups dealing in their own ways with local environmental issues would spring up everywhere, proliferating in the segmentary, polycentric form which we had identified in the other movements. We had already seen some evidence of this development in respect to power plant, and airport siting issues. We anticipated that as this process of mutation, proliferation and growth spread, these little groups would begin to develop an ideological base which would integrate them ideologically, and also would work out network interactions. We felt that a major concept which would be developed by these groups would be that of ecology and systemic interdependence. We also felt that such groups would be touched by the counter-culture sentiment of the time, and indeed soon contribute much to it. For one, it would mobilize to criticize the American lifeway, particularly the urban-industrial mode which seemed to be callous to environmental costs.

Our attempts in 1968 to have our projections published in Science were thwarted, probably because the editor who reviewed our draft manuscript was a biologist, who felt (in 1968, remember) that "ecology" was a subject for scientific study, not an ideology for a social movement - a movement which we were comparing with Pentecostalism and Black Power. Some other biologists at this time also objected to our notion that quite rational ecological concerns should not be confused with the supposed irrationality of a movement. The big news for social scientists in 1968 was still - or just beginning to be - Black Power, and to some of our colleagues it seemed too early to go jumping off to study something associated with the preservationist attitudes of upper middle class bird watchers.

In 1968, we were initially frustrated in some attempts to obtain government funding to study how participatory ecology - which had not yet really come into recognition - would unfold and work. But we did pursue our research as part of our general study of movements, and as a good comparison with black power. And, by 1969, we obtained the support from the Office of Water Resources Research which then enabled us to obtain important additional private foundation matching funds, primarily for audio-visual production. In keeping with our previous approach and because of this support we combined the usual modes of data collection with filming and tape recording with the aim of producing film on the ecology movement. In this case we were able to film from the outset of the project, and we have an extensive audio visual library of materials in addition to that which we used in the film.

Methods, Techniques, and Approach of Participant Ecology Research

We continued to use the same general methods and approaches which we found successful in our study of Pentecostalism, Black Power and other movements. We employed techniques of participant observation and interview. In time we developed a very useful interview schedule which helped standardize the gathering and reporting of information by the 3-6 graduate students and undergraduate students who worked on the project at various times. I should add that we saw this project and the earlier projects on social movements as means of providing students with field research experience in the USA. This is important training for anthropology students. Some students used findings to prepare graduate theses or undergraduate honors theses.

Initially, we concentrated on the study of ecology groups and established order response in areas of Minnesota and South Florida. Gerlach and most students were based in Minnesota, while V. H. Hine resided in South Florida where her husband is a Marine Biologist at the University of Miami. This provided good basis for comparative study. Both Minnesota and South Florida became important in controversies about power plant and jetport siting, particularly in respect to the impact of such sites on water resource environments. (Mississippi River, Ham Lake area; Biscayne Bay, Everglades, etc.) Also, each area experienced a rapid growth in environmentalist groups concerned with such siting problems. Subsequently, debate in Minnesota began to focus on "Saving Lake Superior," from the taconite industry and in South Florida it increased to include controversy over saving various pieces of shoreline from land developers. In time we also considered how groups mobilized in respect to such other issues as the building of a dam on the little Tennessee River in Tennessee, and a chemical plant at Beaufort, South Carolina. And, we were in communication with groups around the country working on a multitude of environmentalists concerns, including development of general concepts.

We looked at ways in which environmentalist groups were mobilized to deal with each issue, we learned how these groups began to interweave to form movement structure, how they recruited participants, how they developed and shared ideology, how they perceived and responded to opposition. We sought to determine ways in which they did or did not face up to risk and challenge and experience commitment. We related our research findings on specific groups to what seemed to be occurring across the country and generated models of the national picture.

As the time of the 1970 environmental teach-in's rolled around, and "Earth Week" came into being, we examined such events in various settings, according to dimensions of our model. For example, we felt that such activities were a good isomorph of the kinds of revival meetings we studied in the Pentecostal Movement and the demonstrations we studied in Black Power. As we explain, such revival meetings serve specific functions of communicating and generating ideology, of helping to pull together the various segments of a movement. They are not the primary means of recruiting. This held true for the ecology teach-ins. We were able to examine teach-in's in Minnesota, Florida, campuses in Washington, Pennsylvania and Iowa. An article about our research and findings in a January 1970 Life Magazine called national attention to our work and stimulated very use-

ful correspondence and communication across the country. All of this contributed to our information-gathering capabilities, and certainly taught us much about the "network" of the ecology movement as it developed.

Again applying our model, we examined the activities and behavior of various eco-spokesmen, such as Ehrlich and Commoner, as isomorphic to the work of evangelists in Pentecostalism and to similar spokesmen-exhorters in Black Power. They were never the leaders of the movement, but certainly were among its evangelists. The conflict between them, their views and the views of some of their close followers is quite in keeping with the tension which exists among some evangelists, and among some Black Power exhorters. All play an important but not crucial role in the dynamics of their respective movements. Other movements have similar roles.

In 1970 we developed a questionnaire to use in learning more about the ecology movement, or those involved in it, and its impact on society. One form of this appeared in the May-June 1970 issue of Natural History (You and the Ecology Movement Questionnaire). We asked Natural History readers to respond to this questionnaire, and in time over 12,000 did just that. We published our analysis of about 5,000 responses in two articles, in Natural History, one in October 1970 and one in December 1970. We included in the October issue selections from some of the many letters which we received in addition to the completed questionnaires.

Subsequently this questionnaire has been widely used by other scholars (for example to help in study of the California Sierra Club). By local and Federal government agencies, by ecology groups and magazines (such as the Journal of Cultural Transformation or Ecology Action), by churches seeking to give members a chance to evaluate "eco-attitude" and to compare it with national samples. For some it became a kind of personal eco-evaluator. For example, Spirit magazine published the questionnaire for this purpose in their June/July, 1971 issue.

Most recently, the Center for a Voluntary Society in Washington, D.C. has used the instrument it its project to gain a profile of environmental volunteers. We were able to obtain answered questionnaires from across the country through this kind of extension of use of our instrument. In some cases we then used our program to evaluate results, in other cases we gave our program to other groups for their own use and simply got some of the results. We have not been able to evaluate all of this information.

We continued and extended our collecting and coding of relevant materials from the media, both conventional and "underground." As indicated, this assembled collection provides a large resource of information, at least about media reports and analysis of events. The user can, of course, compare and amplify materials in this collection by referring to our analysis and reports. We do have a good file of collected field research notes, in particular those collected using interview schedules. And, we have film and tape materials. All of this will provide a good source of data for future use.

From July 1971 - June 1972, I took leave from the University of Minnesota to become Visiting Associate in Anthropology and Environmental Quality

Laboratory at CalTech, Pasadena. Thus, I was able to extend field work on the ecology movement to California. I became especially interested in expanding my understanding of the interaction between ecology movement and established order, and then in understanding the role of such entities as EQL in this entire concern. As I saw it, EQL and similar organizations played a kind of "interface" role, standing somewhere between the Ecology movement on the one hand and the established industrial order on the other hand. My work enabled me to be a participant observer of this role and interaction. More substantively, I examined issues of land use concerning the Southern California Coast line and other water resources. I began to focus attention on the land developers, the response of land developers to citizen pressures, and citizen reaction to shifts in the approach of the land developers. I worked with a task force from EQL which dealt with energy use implications of land development and construction. EQL was able to facilitate adaptive communication between some land developers and some environmentalist citizen groups. As usual, I included in my approach extensive photography - in this case of land development projects and impact on water and related resources.

Ideas developed during this time contributed to my understanding of the impact of the ecology movement on society and change. I also was able to see that the ecology movement pattern which we had learned about in other parts of the country were replicated in California.

From June - September 1972, I was invited to collaborate with a multi-disciplinary task force at the Aspen Institute for Humanistic Studies, Aspen, Colorado. The purpose of the task force was to design a potential institute for the analysis of public choices. I was especially concerned with aspects of assuring public participation in such an institute and with developing ways in which the public can gain a better understanding of systemic implications of policy choices regarding the environment. This also afforded me an opportunity to place some aspects of my research on the ecology movement and its implications in new perspective. For example, during this time I prepared a draft paper entitled "Sociocultural Control of Biophysical Evolution". This was contributed as a draft essay to a Conference in Washington, D.C. on Water Resources Futures sponsored by the Army Corps of Engineers. In this paper I speculate freely about the implications of some of the movements of change occurring in the USA. I discuss the ways in which the ecology movement often urges humans to realize that they are "in" rather than "dominant over" the environment. But then I ask if this is really the implication of what they are doing.

During all aspects of our projects we have conducted open research and communication. We reject the notion sometimes expressed that it at times students of social-behavioral phenomena will find it necessary to play roles other than overt researcher in order gain inside information. Those who conduct social research masquerading as something else may gain some initial advantage, but by their unethical behavior do an injustice to those whom they "study," and a disservice to their profession. For example, it might initially seem useful to pretend to be a recruit to an environmentalist group in order to learn about such a group. But, we have found

that just as much knowledge can be obtained - especially over the long run - by approaching the group as a researcher seeking to remain neutral and "objective." Anything else which is dishonest will backfire and hurt the research and all those involved. There is no need for it. Similarly, it is possible to learn about how land developers sell coastline or other properties by pretending to be a buyer. But, again, over the long run this is neither necessary nor proper. We will be glad to discuss this proposition further and certainly defend it against those who persist in conducting social or psychological research under subterfuge, arguing that only this will give the researcher an honest picture of what goes on. How can dishonesty produce honest analysis. It is far more likely to lead to one attempt at cover story after another, and when this is finally exposed (as it will be when the findings are presented, unless they are kept wrongly to a small circle of users) this will not only hurt the subjects but also backfire on the profession and on all other such studies.

ANNOTATED SUMMARY OF FINDINGS

Structure and Function of the Ecology Movement

We ascertained that the ecology movement has the same general characteristics of segmentary, polycentric, reticulate organization as the other movements which we studied and analyzed. In any area the diverse groups concerned with environmental issues can be "arranged" on a continuum from established and routinized to new and radical, much as was the case for other movements. Groups proliferated rapidly from about 1969 - 1972, much as groups proliferated rapidly from an established, fairly constant base, in the other movements.

The ecology movement also has those who feel that it should be centralized in order to have more impact, just as the "established order" often seem to wish that the movement did crystalize around one leader (or appointed lawyer) with whom the establishment could negotiate.

We show how the ecology movement does function as a whole because of the way its different segments interweave in a network. Reticulation is facilitated by overlapping participation, by joint action and common cause, for example protesting power plant or airport siting, or mobilizing support for environmental legislation. The Earth Day and Earth Week activities served as early revival meetings; attendance at various pollution control hearings provides somewhat similar function. As noted above, the ecology movement has its national and local "evangelists", its proclaimers of ideology and exhorters to action.

The ecology movement also reticulated to other thrusts for change in the USA, and to some other movements. There was, for example, considerable overlap between ecology groups and various "counter-culture" segments. On the other hand, it has often conflicted with some of the major goals and interests of Black Power.

Recruitment

Recruitment to ecology groups is characteristically through face-to-face contact instead of via large scale advertising.

Commitment

Commitment was not accomplished as dramatically as with Black Power or Pentecostalism, and was not as obvious. In many cases the risks of participation in the ecology movement were not as great as those associated with commitment to Black Power or various counter-culture movements. We developed some measures of commitment through our questionnaire, and we have some good case studies which describe the commitment process. People engaged in acts which made them cross the environmental Rubocon. And, people had experiences with environmental beauty and contamination, and with established order opposition or callousness which helped them have what we call the commitment experience.

In our 1970 People Eco-Action film we show how a group of young people experienced the power and splendour of the everglades by taking a long hike through it, with water up to their chests in some cases, passing alligators and black snakes, as well as scenes of wonder and beauty. (This was not through the part laid out by the park service, but a wilder and more inacessible part). They then continued their hike to the site where the jetport was to be built. Construction of the training strip was already underway, with its sights and sounds of bulldozers, trees toppline, etc. The young people were blocked from going into the construction site by a fence and a guard set up by the Port Authority Airport Commission. They experiences a sense of commitment to saving the everglades, and were ready at that point to storm the gates. The film indicates some aspects of this and of ensuing activities of the young people.

Opposition

The opposition to the ecology movement was real and often powerful, but environmentalists often perceived it to be even more sinister and powerful than was the case. Characteristically, people in the established order facing the ecology challenge, often began by ridiculing the environmentalists. Sometimes they pitied them for being so "irrational" (not seeing things the conventional way), sometimes they denigrated them as kooks, "yellow-bellied sapsuckers" and the like. Environmentalists, on the other hand, defined the situation as a crusade against the narrow minded, short ranged, profit maximizing business and industrial interests which were ruining the country and endangering its future. Sometimes they felt that the despoilers were simply uninformed; sometimes they felt that they were simply callous. The interaction between established order and ecology movement often had a synergistic effect, escalating into conflict and non-understanding. Conventional public relations operations by industry backfired.

Of course, it is as I mentioned above chiefly an analytical convenience to label one party to this ecology movement and the other "established order". Quite often those taking the established order side in some specific environmental debates took other roles in other aspects of change. And, people in the ecology movement would often be considered quite "established order."

Ideology

As is common in social movements, the ecology movement can be described as having two levels of ideology. Individual groups each had their own

special "environmental" or "ecology" concepts or ideas, their own special issues of awareness, their own special perceptions. But most groups around the country seemed to share some common concepts. In various publications we have discussed at least some of these: (a) The Doomsday Theme, (b) the idea of shared guilt for environmental degradation, (c) the concept of the limited goods (finite resources leading to a zero sum game), (d) the concept of closed system and spaceship earth, (e) the need for recycling, (f) the need to control or limit growth, (g) the concept of ecosystem and interdependence, (h) the acceptance of a need for significant change - perhaps fundamental restructuring, (i) the concept that individuals as well as society must be committed to change, (j) the concept that system change means lifestyle change.

Perhaps the most important single concept in all of this is that of System, and Interdependence. This leads many to realize that because everything is hitched to everything else, "you can't change just one thing." This leads some to say "thus don't change anything." And it leads others to say "thus change everything." That is, it leads some to block most projects, especially on large scale; while it leads others to propose projects of system planning, analysis and management and, above all, control. I am presently seeking to explore further the significance of this bifucation, and of the coming conflict between those who generate master plans and those who resist them.

While many people participating in or influenced by the ecology movement often speak of the need to realize that humans are "in" the environment instead of being dominant masters of it, it seems doubtful that even those who preach this mean what they say. One gets the clear impression that environmentalists usually feel that humans are not part of the natural environment. They bemoan the fact that humans are bad because they come along and exploit the otherwise wonderful balanced environment. In this they are not much different in understanding than the more conventional Americans who take pride in the way humans are clever enough to "use" the resources of the natural environment.

While speaking of systems and interdependence, environmentalists often set out mainly to change one function or aspect of society, namely the way it treats this "natural environment" without thinking of the impact this would have on other functions or aspects, for example impact on economy, balance of payments, employment, minority opportunities, etc. In return, spokesmen for the established industrial order plays aback a similar game by warning people of harmful consequences of certain environmentalist actions, such as banning nuclear power plants or the SST.

Recognizing this, various individuals and organizations now seek to apply some type of broader, more inclusive "systems" approach to deal with the complex of actions, reactions, consequences of any type of policy decision. They move towards a more comprehensive "Human Ecology" approach. This has its pitfalls as well, for again it raises risk of centralized master planning. But if the various citizens groups continue to demand participation in such decision-making, and if the level of their understanding continues to raise, then this risk is diminished. The problem then becomes how to develop processes which can combine larger scale human ecosystemic analysis and the democratic leaving of significant citizen participation.

ADDITIONAL CONCEPTS

We found it useful to distinguish among three types of change: (a) patch and repair, or developmental change by which the essential characteristics of the established lifeway are "up-dated", "fixed-up" so that they can more or less continue on course; (b) fundamental or revolutionary change, by which the major structures and values of an ongoing lifeway system are significantly changed and; (c) cyclical change, or change which swings away from and then back to the original. We illustrate such typology by using many cross-cultural and historical examples. We also amplify it using analogies or isomorphies from the biophysical domain.

With such a typology as a conceptual tool, we examine actual or potential imp acts of the ecology movement in respect to various water resources, air pollution and other issues. We compare these with impacts of other social movements in the USA today, including Black Power, consumerism, the jesus movement. We indicate how the ecology movement has the potential to be the most revolutionary of all movements. For example, we show how concepts such as the limited good, and zero or controlled growth have revolutionary portent. Our earlier projections on this have been met in growing cases where certain citizen groups as well as community officials conflict with land developers over growth issue. Debates over water resources play an important role in this. Some planners, citizen groups and officials now question their earlier assumptions about calculating energy and water "demand." Some ask to what extent availability of energy and water generates undesirable development, and wonder how they can plan resource and energy needs if they do not remain tied to lineal extrapolation from past patterns of growth. Using both interview and questionnaire, as mentioned earlier, we have sought to determine how a broad range of people perceive the revolutionary potential of the ecology movement, and calculate the effect of environmentalist decisions on their lives.

Ervolutionary change implies system change, or a "system break" as some would call it. As noted above, we have attempted to understand how citizen groups reconcile their desire for democratic participation with a possible need for democratic participation with a possible need for large scale system planning and redesigning by experts, and associated large scale control by centralized government. Some groups and individuals see the dilemma inherent in this, but have not yet had to face up to its actual implications. We are designing research which will enable us to evaluate perception of and reaction to this dilemma in actual field situations where individuals must make crucial choices and be faced with implications of such choice. Land use and water resources use situations which affect individual home owners will provide good test cases.

All of this also relates to changing attitudes about science and technology. While some people undoubtedly suspect science and technology and seek answers in greater personal experience or in deeper faith, it is most likely that our society is moving from an earlier science based on "lineal causality" to a new science based on "systemic causality and complex interaction."

We found it useful to distinguish between modernization and futurization, or "futuring". By modernization we mean the process of fundamental change in which the modernizing country can select lifeway models from among the many

social-cultural systems already working in the world. Japan modernized in the 19th and early 20th century by purposefully selecting what it liked and did not like in the various countries of the western world. African and other Asian countries, often with less freedom of choice, also learned from existing western models. By futuring we mean the process of fundamental change in which the futuring country cannot rely upon lineal extrapolations from its own past or upon models from other countries, but explores and innovates its way into the uncharged future. No country has as yet been in the post-industrial age of the future. There are not relevant models. Thus, the USA is among the nations which are now futuring.

We further distinguish between futuring which relies chiefly among centralized master planning - in which a few experts seek to design this new future according to their capabilities and perspectives, and futuring which is generated chiefly from the multiple explorations of many different, often local, groups.

SYNTHESIS AND NEW PERSPECTIVES

Our initial aim was to prepare a book reporting findings on the ecology movement study. In many ways it would have been a sequel to our People, Power, Change book, focusing this time on ecology. And it would have fleshed out the materials which we presented on the ecology movement in our essays and film. But as our work continued and as our writing progressed, we shifted approach and began to learn more about how the ecology movement, and citizen participation in water resources and other concerns, related to the much broader perspective of the way the USA is changing in every aspect of its lifeway. This led us to write the book Lifeway Leap: The Dynamics of Change in America, which will appear in March or April 1973.

This also led us to write some shorter articles dealing with this subject. One such article, describes the "polyfuturing process" by which the USA is "futurizing." It also led me to write, film and produce a 10-minute 16 mm sound color film, Winds of Change which rather symbolically compares this era of change with the time of the Reformation in the 16th century, and which places the ecology movement in the broader context. This film was available for distribution in June 1971. And, from there we moved on to prepare 3 filmstrips, 35 mm, sound, color for a series "Systems, Symbols and Change, which gets at the "systemic thinking" aspect of the ecology movement using cross-cultural and cross-discipline isomorphies to illustrate "what is a system," and to distinguish between fundamental and developmental change. I am now working on a 10 filmstrip series which will parallel the material in the Lifeway Leap. My work in this regard has also led me into collaboration with Enclyclopedia Britannica films. We completed one film dealing with industrial pollution (aluminum refinery in Montana) and citizen opposition. We are now working on a film on the energy crisis.

As next steps, I wish to consider further the implications of the ecology movement and other movements of change as the USA and the world move ahead into an uncharted future. I am interested in the future of these movements, and in the impact of systemic thinking on what we do and how we make decisions. What will happen as increasingly we realize that

we solve problems only by creating new ones? Will people turn things over to the technocrats or will they seek continuing involvement in decision-making? How will we work out a balance between need to manage and plan and need to maintain democratic participation? I touch upon aspects of this in the previously mentioned paper "Some Factors leading to Rise of Institutes." I also raise this question in the speculative draft essay "Sociocultural Control of Biophysical Evolution." In this paper I suggest that in spite of its image, the ecology movement may indeed be just one more of the forces which are attempting to move society to greater control over the processes of biophysical evolution; averting in this case threats to human life created by rising "pollution." Such threats are perhaps really part of the "natural" process of evolution, although environmentalists and others persist in describing them as alien to nature simply because they are a result of what people do and build. Those who see this as an intrusion on the natural environment have their own special view of humankind. They do not really have a human ecological view. I suggest that just as one main theme of human endeavor has long been to seek to establish control over the "environment" made by humans, including such problems as urban ruin, suburban sprawl and pollution.

This quest, may be interpreted as "betting back into harmony with nature," but it really seems to imply a quantitative leap to a whole new level of global control - or at least attempted control. I suggest that we should examine this attempt and consider the totalitarian risks it poses. We should seek to determine how this thrust for control and management is likely to be tempered by increased grassroots citizen participation in the decision making and control process. In any event, we can better understand how citizen participation in attempts to improve quality of water resources environment has played an important part in the transformation process we have experienced during the past 5 years.

ARTICLES, REVIEWS, BOOKS, FILMSTRIPS, FILMS AND AUDIO-VISUAL MATERIALS RESULTING FROM RESEARCH

Articles

"Participatory Ecology" An Embryonic Social Movement to Improve the Quality of Man's Environment", prepared for Research 1980 Planning Conference, February 1970, University of Minnesota.

"Eco-Gemini: Two for the Teach-In", Natural History May 1970.

"You and Ecology", a questionnaire on attitudes toward the environment, Natural History, June 1970.

"Wit, Wisdom and Woe", Preliminary Report on questionnaire findings, Natural History, October 1970 with co-author Virginia H. Hine.

"Many Concerned, Few Committed", Final Report on questionnaire findings, Natural History, December 1970, with co-author Virginia H. Hine.

"The Ecology Movement and Revolutionary System Change" Spirit Magazine, Concordia Press, June/July 1971.

"Movements of Revolutionary Change: Some Structural Characteristics", in special issue on General Systems Theory, edited by Bertram Gross, American Behavioral Scientists, July/August 1971.

"Western Culture and the Environment" Reading #13 pages 71-74 in The Ecology Controversy Opposing viewpoints by Gary McCuen and David L. Bender, Greenhaven Press.

Reviews

"Science and Technocracy: Opiate of the Masses", a review of Theodore Roszak's Where the Wasteland Ends: Politics and Transendence in Postindustrial Society for Natural History Magazine, Jan. 1973.

Review of The Fitness of Man's Environment for American Anthropoligist, Vol. 71, no. 6, December 1969.

Books

Lifeway Leap: The Dynamics of Change in America with co-author Virginia H. Hine, University of Minnesota Press, March 1973.

Filmstrips, Films and Audio-Visual Materials

People Eco-Action a 16 mm sound/color film, produced with the assistance of the University of Minnesota Audio-Visual Service, 1970, with study and discussion guide.

Winds of Change 16 mm sound/color, University of Minnesota, 1971.

Lifeway Leap: Dynamics of World Change 35mm polymedia kit, Southern Cal Edison, Los Angeles, 1973.

Two films in collaboration with Enclyclopedia Britannica, one on Energy scheduled for release 1973. One on a dispute over industrial pollution alos scheduled for release in 1973.

REFERENCES

"Five Factors Crucial to a Modern Religious Movement", Journal for the Scientific Study of Religion, Spring, 1968.

"Black Power, Corporate Action and Social Change in Urban America", special issue on Corporate Groups in Urban Areas of Anthropological Quarterly, edited by William Schwab, Summer 1970.

"People, Power, Change: Movements of Social Transformation", Indianapolis: Bobbs-Merrill, 1970. With Virginia H. Hine, co-author.

"The Social Organization of a Movement of Revolutionary Change: Case Study, Black Power", a chapter in Afro-American Anthropology: Contemporary Perspectives, N. Whitten, Jr. and J. Szwed, editors, New York: Free Press, 1970.

"Pentecostalism: Revolution or Counter-Revolution?". chapter contributed to book tentatively entitled American Marginal Religious Movements, edited by Irving Zaretsky and Mark Leone, University of Chicago, February 1973.

People, Power Change: A Study of Movements of Revolutionary Change, a 16 mm sound/color film, photographed in Minneapolis, Milwaukee, Colombia and Haiti, produced with the assistance of the University of Minnesota Audio-Visual Service, May 1968.