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APPLIED GEOGRAPHY AS ACTION RESEARCH: THE ST: LUCIA ENERGY FUTURES PROJECT*

David Morely
York University, Canada

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A reappraisal of applied geography from the perspective of its pedagogic base (the transfer of knowledge from researcher to practitioner) is necessary, particularly in relation to current philosophical and ideological debates in geography. Action research is presented as the basis of an intervention strategy for use by applied geographers that takes account of this requirement. Action research has social-psychological origins, but its application has been extended from an interpersonal focus to use within multi-organizational systems set in complex and changing environments. The St. Lucia Energy Futures Project provides an example of this style of action research carried out by geographers. There is a need for further demonstration and evaluation of this approach within geography.

This paper presents an example of the use of an action research methodology by geographers, illustrating the potential of this approach for the discipline. It is proposed that action research should be considered as an applied geographical framework, not merely to increase the range of applied research, but also because of limitations in the theoretical and methodological base of the activities currently carried out by applied geographers.

This paper approaches applied geography as that element of the discipline that explicitly crosses the boundaries between different social organizational settings--higher education, professional practice, community action, corporate decision making, public sector policy making, social movements, special interest groups, the voluntary sector, etc. Its business is the exchange between geographical theory and method and the multi-organizational problem domains that ultimately constitute the open environmental systems framing all human geographical research. This emphasis on the applied researcher as an intervenor among social organizations of different scales, structures, objectives, and ideologies makes special demands on the skill and ability of the researcher. However, like it or not--conscious of it or not--applied researchers are involved in complex and rapidly shifting contexts in which the process of exchanging their ideas (i.e. co-learning) with long-term stakeholders in the settings they are working in is often as important as the special knowledge they are delivering

Applied geography, in common with other applied social science disciplines, has attached little importance to this issue, assuming that our traditional pedagogic models provide a satisfactory basis for forays into the "real" world. Action research provides a model that, by contrast, focuses on the process of information exchange and shared learning that presumably should be a primary objective of the

relationship between applied researchers and their real-world associates (clients participants, subjects, users, etc.).

The paper first examines the need for such a framework within applied geography. This is followed by an introduction to action research and an overview of a project based in the Carribbean that specifically utilized the approach. Finally, the problems and implications of the use of action research within applied geography are briefly considered.

PRESSURE FOR A REAPPRAISAL OF APPLIED GEOGRAPHY

The overall proposition is that in our current social-political setting in which both theory and practice are conducted in an atmosphere of turbulence, conflit and uncertainty, there is a particular need for the adaptive reframing of issues and a redesign of responses to them--especially where attempts are being made to build bridges between the worlds of thought and action. Supporting that point is the sense that applied geography may enter more directly the mainstream of the discipline--not merely in response to the demands of the market place, but because it may have a role to play in the bridging of the serious philosophical and ideological splintering that is at present taking place (Pred, 1981).

There has been a flurry of discussion about the nature of applied geography during the past few years (Coppock and Sewell, 1976; Birch, 1977; Harrison and Larsen,1977; Frazier, 1978a, 1978b; Pryde, 1978; Stutz, 1980; Ford, 1982; Sant, 1982; Moorlag, 1983). Much of this discussion has centered on the need to define a more integrated relationship between applied and basic research within geography. Indeed, the demands made on applied geography have been significantly greater than the theoretical or methodological responses from applied geographers. For example, applied geography has been urged to assist in exposing geographers to planning processes and community action (Pryde, 1978); to reflect growing geographical concerns with the human condition (Eliot Hurst, 1972); to avoid becoming another "new geography" (Ford, 1982); to contribute to the formation of an applied geography paradigm (Frazier, 1978a); and to assist in maintaining a level of continuity within the discipline.

Underlying these expectations, and the far more extensive amount of substantive work that is regarded as "applied" in nature, is the implication that an *ad hoc* approach to the building of the critical bridges between theory and practice in the discipline is not good enough. This feeling has been expressed more frequently as applied geography has been drawn into the ideological, philosophical, and methodological debates within the discipline. There has, however, been no general aggreement as to the manner in which applied geography might be expected to respond to the crisis-ridden environments of the past decade. Johnston (1979) has pointed to the fact that the practice of applied geography has tended towards three broad activities, each of which mirrors contemporary philosophic stances within geography:

1. providing empirical support to decision makers: involves the most common image of the applied geographer acting as an information gatherer, data analyst, and report writer, operating within a positivist research paradigm, and implicilty supporting the status quo by working primarily for centrally-based organizations.

2. raising issues of general social concern: involves the monitoring of real-world settings and demonstrating the nature of the social problems (housing, transportation, human service provision, community issues). The geographer plays the role of diagnostician, operating from a liberal humanist perspective and emphasizing the application of "research with a conscience." The focus tends to be on incremental social change occuring within existing societal structures and provides researchers with only limited access to or influence on institutional decision making. Concern with the principles of spatial justice (Harvey, 1973) does lead to limited involvement in social action, such as in the environmental, women's, or human-service movements.

3. exposing the contradictions of late capitalism: involves a relatively small, but vocal group whose focus is the application of radical-change (Marxist) principles to the analysis of current social systems. The approach is conflict-oriented, emphasizing the impact of capitalist production and the role of labour, class relations, poverty, and community control. There is an implied desire to overthrow the current geographical paradigm as well as the capitalist system, and a tendency for intellectual and theoretical stances to be taken rather than demonstrations of practical activism (Peet, 1977).

In reflecting the sharp ideological divisions that exist within the discipline as a whole, applied geography is displaying a version of the classic intellectual dilemma--the tension between theory and practice. Applied research, in attempting to create connections between basic research and practice, is inevitably drawn into this debate, but has rarely engaged in it philosophical aspects. Until recently, the same was true of geography in general; however, the increased interest in humanist philosophy among geographers has raised the issue of the linkages between social theory and everyday life (Gregory,1978; Pred, 1981; Thrift, 1982). In this way, the critical need for the development of theoretically sound conceptual frameworks in applied geography is paralleled by the search for a satisfactory means of tying "systems of ideas to structures of society" (Gregory, 1978) Discussions of "committed explanation in geography" (Gregory, 1978) and "relevance, liberals, and radicals" (Johnston, 1979) for example, have direct implications for the practice of applied geography. An increasing number of statements focus on the nature of this bridge: Pred talks about "an emerging consensus (around) problems involving ordinary everyday activities, experiences, and consciousness" (Pred, 1981) and Gregory reinforces this coincidence of concerns regarding the relationship between theoretical and applied geographies in characterizing the discipline as "always living in the shadows between the domains of theory and practice...hiding from open encounters with the theories from which it derives and the practice to which it appeals" (Gregory, 1978). The implied demand for a response from the discipline in general is one which applied geographers must be involved.

AN INTRODUCTION TO ACTION RESEARCH

Action research provides an example of one style of response to the demand for the development of a sound intervention theory within applied geography and for the means of examining the relationships between theory and practice in the discipline as a whole. While it provides yet one more illustration of geographers drawing from adjacent social science areas for stimulus, action research also provides access to established theory and methods which, it will be argued, are capable of being

adapted to assist in strengthening the practice of applied geography. In one respect, however, action research makes demands that are different from the other borrowings; it comes from a different social science tradition-- from the clinical research model associated with social psychology and psychiatry

Action research emerged out of the demand in World War II for rapid responses to complex social/organizational problems and also from the need for individual rehabilitation that arose from wartime experiences. It may be compared with other multi-disciplines generated during the post-war period--operations research, policy sciences, management studies, and later, environmental studies. From the beginning, the primary quality of action research was its capacity to cross traditional boundaries separating research and action--disciplinary, organizational, jurisdictional, cultural, social class, and so on. It also focused on the nature of the relationship between professional researchers (clinicians) and their clients (patients).There are a number of useful overviews of action research's origins and development (Rapoport, 1970; Clark, 1976; Cunningham, 1976; Ketterer et al., 1980) and the intention here is to provide a brief introduction to action research as a basis for the discussion of a particular project carried out by geographers.

The form of action research derives directly from its varied origins. It is generally agreed that five main traditions have contributed to its development. Work at the *Tavistock Institute* in London emerged from wartime therapy models and their socio-clinical origins. It later extended into intra- and inter-organizational environments through work on personnel selection, work organization, and human relations (Trist, 1981). The *Group Dynamics* approach is strongly associated with the work of the social psychologist Kurt Lewin (usually acknowledged as having coined the term "action research") at MIT and the University of Michigan (Lewin, 1948). Here the focus was on group interaction within a wide range of social settings (clinical, industrial, community, family) and emphasized collaboration in relation to behavioural responses to change. An outcome of Lewin's work was the creation of the well-known National Training Labs at Bethel, Maine, which focused on training facilitators of group process. The *Operations Research* connection with the emergence of the action research approach relates both to its logistic problem-framing aspect and most importantly to the systems approach to defining problems (Ackoff & Emery, 1972). The *Organizational Development* methodology that directly incorporated the action research model is associated with approaches to planned intervention into organizations with the intention of involving organizational members in re-education and re-design processes (Bennis et al, 1976). Finally, activity associated with *Applied Anthropology,* which derives from the wartime analysis of the situation in occupied countries, provides a cultural grounding for action research (Clifton, 1970).Action research emerged from these roots with a number of important characteristics on which its wider application has been based. First, it is designed to respond to the practical concerns of participants in the real time and space settings they occupy (home, work, community, etc.). Action research emphasizes the collaboration between researcher and the researched in these everyday environments, with the participants contributing their appreciation of the nature of the problem under examination and the researcher creating learning settings that increase the coping and response capabilities of those involved. Various forms of group process are used to bring together the different interests which are concerned with a particular problem situation. A primary role of the

researcher is to facilitate the co-learning necessary for such groups to work together towards purposive and continuing collaborative activity. Underlying action research, therefore, is a deliberate attempt to create links between the researcher and new decision-making settings with the purpose of 1) generating an awareness of critical issues and their context; 2) increasing confidence among participants in their own capacity to respond, and 3) stimulating the initiation of a process of collaborative planning involving the range of constituencies affected by the issue.

The carrying out of these objectives demands a heuristic style of research: exploratory, providing directions rather than solutions, emphasizing self-regulating processes, and using the researcher as catalyst. Out of such a working association comes an active involvement by the researcher in the consideration of emerging problems, in-depth insights into the complex of related issues, and a continuing role in processes that can lead to the emergence of significant social organizational innovations. From this form of participant observation also comes an opportunity to feedback concepts and data into a more traditional and parallel research design, capable of generating formal conclusions that are relevant both in theoretical and practical terms (Cunnningham, 1976).

Action research has proved capable of being adapted to increasingly wider and more complex environments. This trend has led to action research being extended from an individual/inter-personal focus (in which the "researcher" performed the role of therapist, counsellor, or trainer) to its application within organizations that characterized its revival in the '60s and '70s through the use of organizational development, human relations, quality of working life, and other approaches.

It is the most recent evolution of action research that brings it closer to the realm of the applied geographer. The trend has been towards its use in multi-organizational settings and particularly those that are made up of the interdependent sets of organizations, interests, communities, and jurisdictions drawn together around critical issues--problem "domains" (Trist, 1979). An important aspect of this trend is the recognition that the general environment of uncertainty produces systems of problems that are both beyond the capacity of individual social organizations to handle and at the same time outside the reach of our traditional disciplinary methodologies (Emery & Trist, 1965; Ackoff, 1974; Schon, 1973).

The tradition of action research introduced here is based on the growing need to be able to research, plan, and manage within rapidly changing and unpredictable settings (Morley, Proudfoot, & Burns, 1980; Williams, 1982; Morley, 1981). It constitutes the basis of an applied research style aimed at encouraging domain participants to explore the possibility of collaborative rather conflictual responses in the search for alternative futures amid continuing turbulence. In this respect both the applied researcher and the practitioners are exploring new paths in their respective arenas of action.

Action research cannot take place without acceptance and encouragement from within the problem domain. This may come from either central or peripheral sources. While it is true that the most common lead agency is based within a central organization (typically governmental) and that funding frequently (but not always) comes from central sources, it is common for domain-based action research to come from the collaboration between central and peripheral bodies (e.g. voluntary organizations, community groups, or special interest groups in conjunction with a

government department, a municipal body, or a private sector organization associated with the issue). It is also common for action research to begin with the acceptance of the approach by a number of institutions that are typically in conflict--management and unions, community and municipality, government agency and user groups, etc. In this respect action research is most effective when it begins neither as an example of "planning from above" or "planning from below", but where a middle ground is occupied for the collective consideration of questions that have not been "addressable" from the separate perspective of the traditional countervailing institutional ideologies.

Action research, therefore, can be simply identified as a means of bringing together the range of constituency interests that are implicated in particular critical societal issues that extend beyond the traditional boundaries of the organizations and jurisdicitions associated with them. The primary mechanisms used to assist in this task are associated with group processes and social networking activity. The purpose of such activities is to provide settings in which a "shared appreciation" (Vickers, 1967) among the different interests encourages continuing interaction among traditional and emerging interests and existing organizations which focuses on the development of horizontal linkages based on changing problem systems with the aim of assisting in the integration of the roles of the established vertical and functionally defined institutions.

The action researcher participates in this process as catalyst, advisor, facilitator, observer, and analyst according to the stage of the activity (see Figure 1). A quite different style of pedagogy from that inherent in positivist research is implicit in this kind of action research activity. The transmission of knowledge generated by the action research process is a cooperative activity. The subject/client role is replaced by a collegial/co-researcher relationship which, from the participant's viewpoint, comes close to the notion of "science by people" (Illich, 1981) rather than the more common applied research mode of "science for people". From the standpoint of their responsibility to the academic community, action researchers are in a position to generate continuously updated descriptive information and relevant data, to propose new research hypotheses as a result of their actional experience, to develop new typologies of social process based on their observation of changing systems tendencies, to provide guidelines for future domain scenarios (geographies of the future), and to participate in debate within the discipline on the theoretical implications of their findings. To Lewin's comment that "there is nothing so practical as good theory" can be added the contention that there is nothing so generative of good theory as involvement in practice.

The action researcher's simultaneous commitment to both client system and the academic community is a primary focus of the questioning of this style of research. Discussion of the nature of this relationship has considered its ethical implications, the confidentiality problem, the danger of researchers becoming captive to the immediate needs of participants, the tendency for action research to become locked into discrete and individualistic settings, and the linked problems of replicability, verifiability, and the absence of any measure of predictive validity of the results. These are not simply resolvable issues; while action research may be regarded as a distinctive activity unrelated to the scientific model, it is also possible to view it as an associated process carried out in parallel and integrated with a conventional theory-

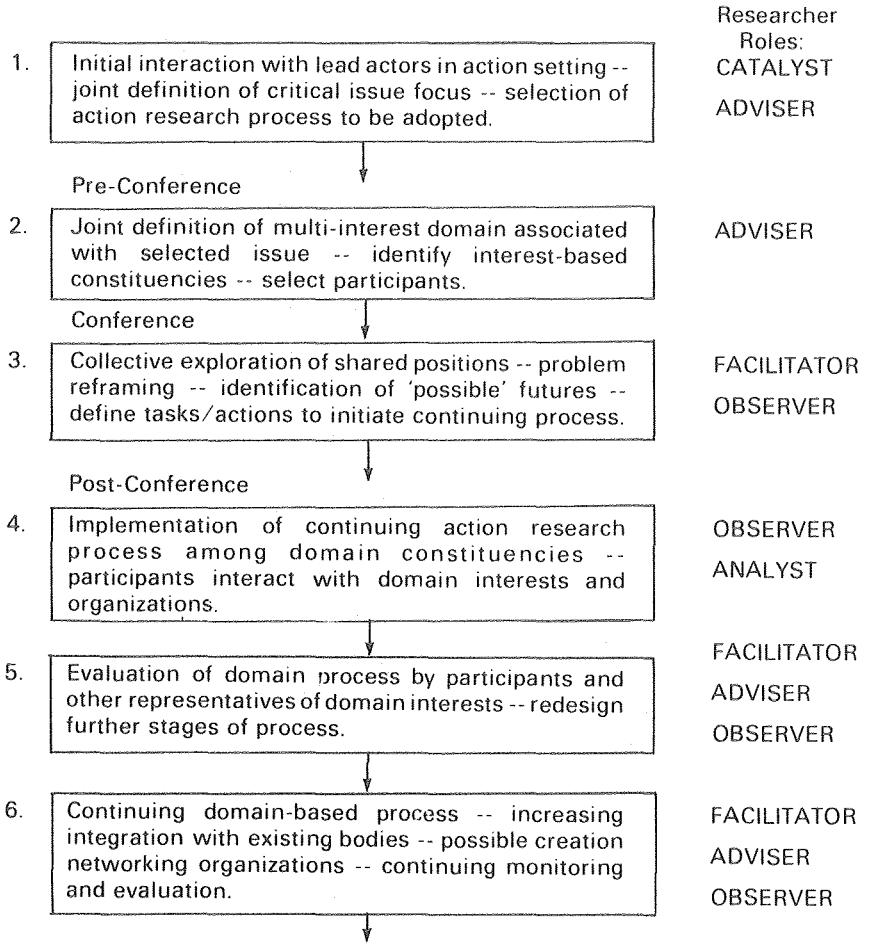
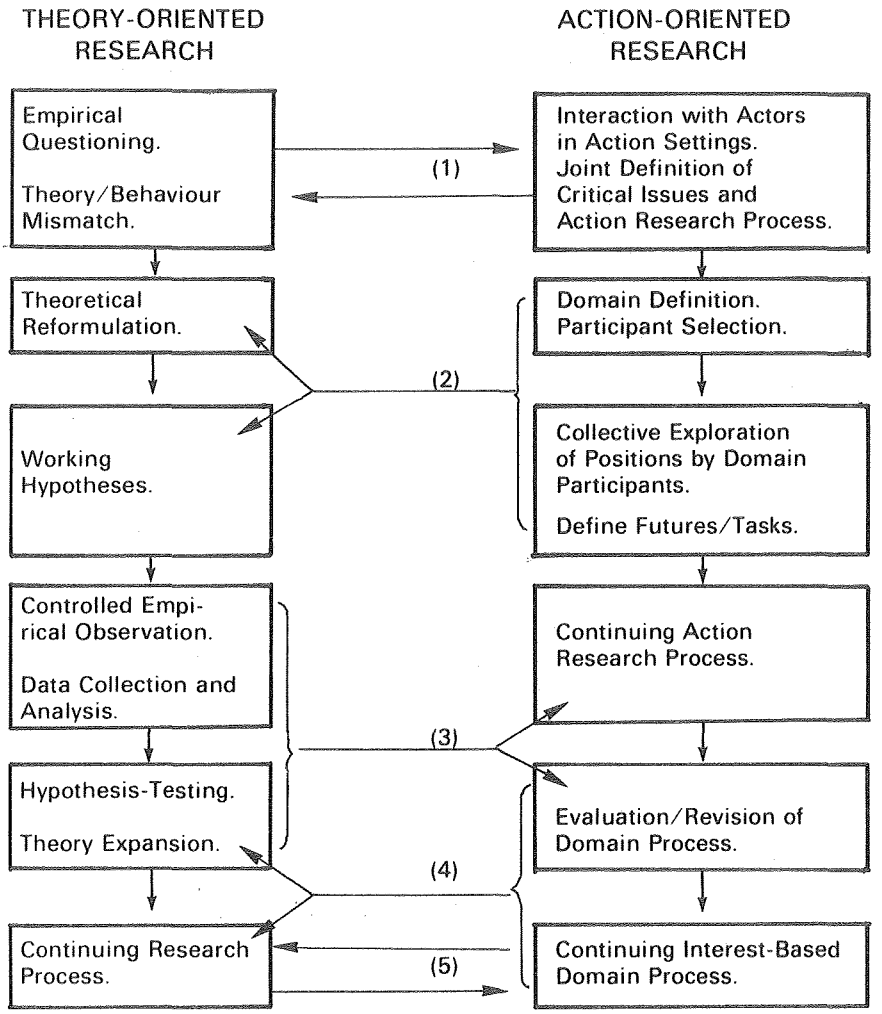


Fig. 1: Action Research Stages

based research sequence (Figure 2). The validity of work at this kind of paradigm interface needs far more cosideration. There is obviously a wide range of levels of integration ranging from the conventional applied researcher who intervenes directly only inadvertently (e.g. through the carrying out of a social survey or the disclosure of sensitive data that is incorporated in an applied research report) to the action researcher emphasizing the role of facilitator, a high-degree of co-learning, continuing self-help activity within the project (Seashore, 1976).

A further distinguishing feature of action research is the demand for the use of interpersonal and group process skills on which the performance of the facilitator role is based, and an understanding of the varying structure and operation of social organizations. These are not skills commonly possessed by geographers; however, whatever form it takes, applied geography makes some level of demand for such process knowledge and skills. Action research merely places this question high on the agenda for applied researchers and their disciplinary associates.



(1) Interaction of research process with shared objectives.

(2) Action research domain definition and outcomes of collective exploration into inductive/hypothesis-framing research stage.

(3) Data analysis and hypothesis-testing results into continuing action research process and evaluation stages.

(4) Feedback and further reframing of issues from stakeholder perspective and continuing research process.

(5) Continuing interaction between interest-based process and theory-oriented research process.

Fig. 2: Interaction Between Theory and Action-Oriented Research

A generalized "map" of the role distinctions that are implied by the above discussion is provided in Figure 3. The vertical axis defines the mode-of-intervention of applied research, and the horizontal axis refers to the pedagogic style used. The four classes of involvement in applied settings that are defined in this way are by no means mutually exclusive and, as already suggested, the researcher may shift roles at different stages in a piece of applied research. However, this is by no means typical and the roles do imply important distinctions in the related applied research style and outcomes. In particular, the differences between action and applied research (as the terms are used here) are suggested in the diagram.

In the following discussion of the action research process as it is demonstrated by a particular project, emphasis is placed on the facilitator role, since this is both the particular contribution of action research to applied geographical research methodology and one that opens up an interesting range of opportunities for geographers.

THE ST. LUCIA ENERGY FUTURES PROJECT

The primary aim of this discussion is to illustrate the earlier introduction to action research; the focus will be on the research process rather than on the substantive content of the project. The structure of the St. Lucia project follows an action research process specifically designed for use in multi-organizational domains in which different (and often disconnected and opposing) constituency interests are, nevertheless, linked through their joint association with a critical issue of societal dimensions. Figure 1 provides an outline of the stages defined in this process and the

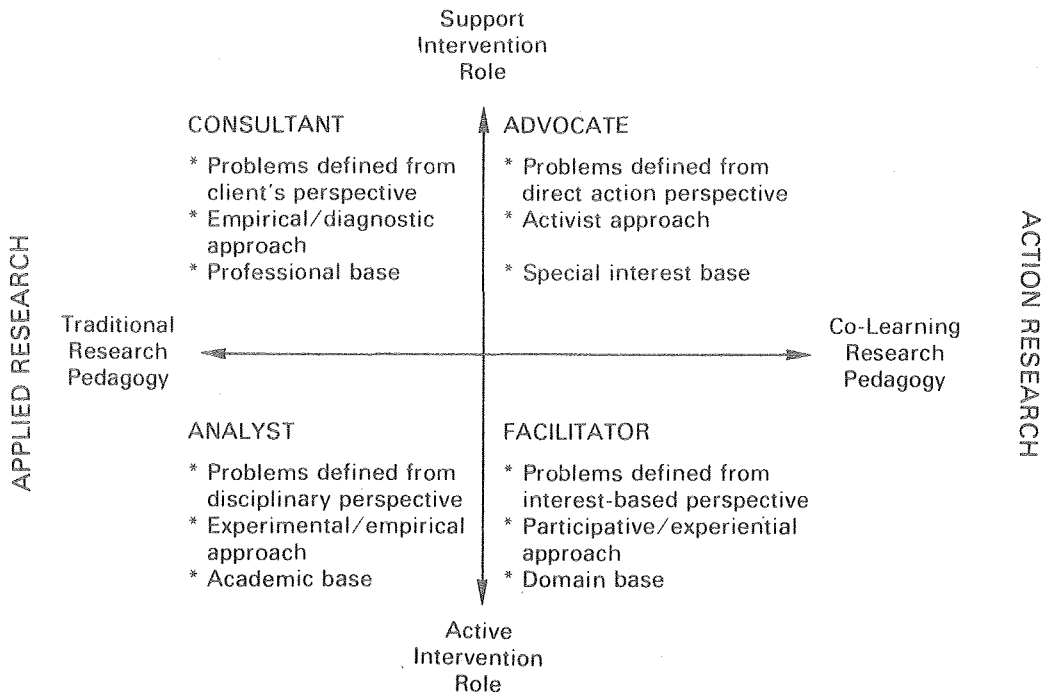


Fig. 3: Applied and Action Research Roles in Relation to Stakeholders

shifting roles of the research team in that action research sequence. This outline of project activity will be based on these six stages.

1. Initial Interaction with Lead Actors

Since the action research model used here is based on a co-learning relationship between researchers and participants/stakeholders within the action setting, this initial stage is of critical importance, particularly if it marks the first joint project activity among the groups. In fact, the project's very existence depends on the establishment of good working relations with the key actors in the domain who are interested in the possibilities of the process, as well as on mutual agreement and interest in a substantive focus for the project. In this instance, a research team based at York University and including three geographers (W. Found, D. Morley, R. Ramirez, P. Victor, and P. Wilkinson--all associated with the Faculty of Environmental Studies; and G. Hathaway, a consulting energy engineer and systems analyst) with experience in a variety of topics relevant to small island states in the Carribbean, were interested in working together on an action research project in that region. With regard to the selection of the St. Lucia setting and the energy focus of the project, as is so often the case in applied studies the decisions were based on the chance discovery of a coincidence of interests rather then any formal selection process. However, the two requirements that need to be fulfilled in order to begin such a research process had to be fulfilled: 1) local interest expressed in this particular form of process; 2) the joint selection of a problem setting as a focus for the project in which domain-wide interests overlap existing boundaries.

The site of the project, St. Lucia, is a mountainous, volcanic island located in the Windward Islands section of the Lesser Antilles at the southeastern edge of the Carribbean basin. It measures 42×22 km and has a population of approximately 140,000--predominantly of African descent. It gained its independence in 1979 after colonial connections with both France and Britain (continuously since the early 19th century). Its economy is based on banana production and export and tourism; it has a serious balance of payments problem, and an urgent need to increase its development potential. As is the case in many small less developed countries (LDCs) faced with intractible social, economic, and environmental problems, St. Lucia is under great pressure to demonstrate its capacity to use its existing human and natural resources effectively, in order to attract increased aid and development assistance.

The action research approach was seen by St. Lucian members of the government's planning unit (with whom initial contacts were made) as of potential assistance in their task of responding to external demands for establishing realistic development goals and to local needs for immediate action. The qualities of action research which particularly attracted them were 1) its focus on the integration of existing skills, interests, and organizations around mutually agreed problem topics; 2) its emphasis on self-generated outcomes capable of being sustained by local resources; and 3) the underlying "learning through action" character of the project. It was, therefore, viewed as a means of testing an unusual activity to be funded by an international agency (the project was supported by the Canadian International Development Agency) in which the local participants were to play the key generating role, while the external researchers (the York team) were to act primarily as facilitators of the process.

The problem focus was selected during the initial discussions between the research team and the lead agency. With its complete dependence on imported oil supplies, St. Lucia had been affected very seriously by the oil crises and related price increases of the 1970s. A significant proportion of the nation's foreign currency earnings were being drained as a result of the high level of oil imports. The implications of this energy situation for St. Lucia were wide-ranging. For example, the increased cost of electricity led to a significant switch back to the use of charcoal for household energy needs (even by those who had access to electricity). The resulting increase in wood cutting has led to greater rainfall run-off, risks of slope erosion, and falling water-tables. All aspects of the nation's social and economic life were affected by the energy issue and it posed significant problems for the island's planners; there was at the time of the project's initiation no specialised energy planning capacity and no integrated national energy policy. Major unresolved issues included the need for additional electricity-generating capacity as peak load came perilously close to the 15 megawatt capacity of the two diesel-powered stations. Also, while there was much talk of alternative energy supplies (solar, wind, biomass, and geothermal), there was a limited capacity to evaluate the viability of these sources or to establish a means of adapting such innovations.

The selection of "energy futures" as the topic for this action research process therefore fulfilled the need for a domain-wide issue. It also fitted with the research team's experience, since it had initially included an energy-specialist and another was later added to the group. It should be noted that the "oil glut" of the early 80s and the levelling-off of oil prices has not substantially reduced the impact of the energy issue on countries like St. Lucia. It is a long-term problem, which has not been significantly affected by price falls that are trivial in relation to the proportionate price increases of the 70s, the effect of continuing world-wide inflation, and the increasing debt-load of the nation which is in part related to oil imports.

During the preliminary stage of an action research project, the researchers must extend their contacts beyond the lead organization (the Central Planning Unit in this instance) and make wider contacts among the broad range of interests that will become involved in the process. In St. Lucia, this included associated government departments, the power utility, business interests, community organizations, education authorities, the church, and other special interest groups. Discussion focused on the differing perspectives on the energy issue, on explaining the nature of the project, and possible outcomes of the process.

A final element of this initial stage is the collective decision as to whether the project should go ahead and which action research techiques should be used to help focus the domain participants on the problem topic and encourage the identification of possible continuing action at the domain-wide level in association with those public and private organizations which have statutory and functional responssibilities in the area. In this case, the members of the St. Lucia Energy Committee, who were drawn primarily from government bodies, were used by the Central Planning Unit to assess the project and confirm its form and direction.

The technique proposed by theYork team to act as the focus of the project was the "search conference". Search conferences are an action research technique first developed at the Tavistock Institute in the early 1960s and used in a wide range of settings since--especially by the Emerys in Australia (Emery and Emery, 1978;

Williams, 1979; Morley and Trist, 1981). Search conferences are a participatory process in which representatives of organizations, communities, and interest groups affected by particular problem issues are brought together to work on the development of recommendations for continuing actions that take account of future environments. At search conferences, the primary resources are the participants themselves. They bring their individual experiences, expertise, and values to focus collectively on the selected problem topic. The aim is not to arrive at new solutions, but to create a temporary communal learning setting out of which proposals for new directions and continuing adaptive planning processes are developed by the participants.

The structure of the search conference is carefully designed to allow the participants to work from an initial broad overview of the problem (set in its past, present, and future contexts) towards the framing of specific proposals and recommendations for continuing action. The conference staff (in this case the York team) assist in the design and facilitate the conference process. However, the nature of the content and form of the conference are entirely the responsibility of the participants. It is their conference--and the outcomes are in their hands. Search conferences are not ends in themselves; placed in the right environment they are able to act as catalysts for change--not just among the participants, but also within the groups, organizations, and communities of which they are members. Search conferences provide a powerful means of involoving the researcher in intensive problem-framing activity with representatives of the entire body of opinion related to a particular issue (Morely, et al., 1982).

2. Domain Definition and Involvement of Participants (Pre-Conference Phase)

This stage of the project emphasizes the definition by the orgainizing groups of the domain of interests to be involved in the search conference, the selection of the participants to represent those interests, and the involvement of potential participants in the process by introducing them to search conferencing. While the researchers continue to play the role of advisors to the local organizing group, a critical step during this stage is the selection of the conference secretariat. It is essential that the process leading up to the conference be managed by people from the domain working in concert with the local orgainizing group and the researchers. In this case, a small St. Lucia-based, non-governmental research centre that had developed a reputation for carrying out locally-generated research, administring surveys for external projects, and in organizing conferences, was selected. The use of a domain-based secretariat means that from the start the project becomes an indigenous process. In this sense it is "research by the people", and the external researchers' roles do not compromise this principle.

A primary purpose of search conferences is to act as a catalyst for the reframing of major issues from the perspective of the total range of organizations and interest-based groups that reflect the complex structure and wide impact of the problem under considertion. Because of this, it frequently crosses ideological and class boundaries in a way that is not typical of existing problem-facing networks. The balance of the backgrounds of those participating in search conferences is, therefore, important, both in terms of their organizational origins and their personal attitudes and opinions. Because it is critical that the group does not represent only a

limited perspective of the problem, the selection of the participants should involve an organizing group containing members of the main constituencies involved in the domain.

In St. Lucia, the twenty eight participants who finally attended the conference included 12 from government agencies, 5 from business, 4 from education, 3 from regional and local organizations, and the remainder from special interest groups. Since it is not the intention to give the impression that a search conference aspires to a decision-making role, an attempt is made to involve people who have active roles among the various constituencies concerned with the problem, but who are not necessarily at present in senior decision-making positions. What is important is that the participants' involvement is understood and supported by their organizations or interest groups. As with all stages of an action research process, the defining of the domain and the selection of the participants is itself part of the learning process for both local conference organizers and backers, and for the researchers.

All conference participants were, by definition, St. Lucians--the long-term stakeholders in this issue and its outcomes. They represented a broad range of island social groups from government employees and professionals with off-island university educations to locally-trained technicians, local business people, and community residents with interests in energy related matters.

3. Search Conference Event

The St. Lucia Search Conference on Energy Futures took place during June 1982, eighteen months after it had first been proposed. This demonstrates the extent to which action research operates in relation to a "real time" schedule. It becomes part of the overall social, economic, and political events occuring in the problem domain in which it is set. In the case of the St. Lucia project, the period between the initiation of the pre-conference process and the actual event saw a series of political crises leading up to the mid-term defeat of the government, the replacement of an expatriate-dominated planning unit by one in which overseas-trained St. Lucians held key positions, and the first attempts at national energy planning. The local context in which the search conference took place was, therefore, different from that in which it was initially proposed. A test of the extent to which an action research project is in the hands of the local participants is the degree to which it can be adapted by them to their changing needs. If this had not occured in this instance, then it is possible that the search conference would not have taken place.

The search conference lasted three days and took place at a residential site away from the capital. The participants are first given a careful introduction to the form of the conference--the use of small groups with members drawn from the wide-ranging interests present; the small groups working in parallel through a series of search phases beginning with a broad overview of St. Lucia's setting and gradually narrowing in focus through discussion of the island's existing capacity to respond to the energy problem, the particpants' ideal (desired) future in relation to energy, the nature of the constraints blocking the achievement of these, and a definition of the opportunities that remain open. The outcome of the small group activity and the associated plenary reporting sessions is a collective definition of the key tasks and related actions that face the nation in relation to energy issues. Throughout this search phase the research team performs the roles of small group facilitators and

recorders, and maintains the continuity of the search process in conjunction with the local secretariat, the lead agency, and the organizing committee.

At the St. Lucia search conference, the participants selected four topics for detailed consideration in the final action phase of the conference:

1. Energy Conservation Measures: the need for immediate efforts by private and public organizations to reduce energy consumption and to cut the import of oil products.
2. Alternative Energy Sources: the need for a close examination of cheaper, indigenous sources of energy for St. Lucia--geothermal, hydro, wind, solar, and biogas.
3. Government Action: the need for the government of St. Lucia to develop a comprehensive national energy policy focused on moving towards alternative energy futures.
4. Public Education and Information: the need to raise the awareness of long-term energy problems among St. Lucians and to involve them more fully in the responses to these issues.

Out of the work of these task groups, the participants presented detailed recommendations to a final conference session which a number of decision makers from government, the private sector, and other invited interest groups attended. These recommendations emphasized actions that could be taken at once to initiate a continuing process of energy planning involving all the relevant constituencies that had been represented at the conference. The proposals were pragmatic--providing a number of areas for follow-up by the participants, both collectively and individually, within their own organizations or interest groups.

From the action researchers' perspective there was a sense of a high level of commitment by the participants and a feeling that they had understood and approved of the objectives, form, and style of the conference. They had accepted from the beginning that the substantive content and the selection of the final task topics "belonged" to them, rather than being imposed (however subtly) by government and/or the facilitator. It seemed to the facilitators that a key element of the search conference--the achievement by the participants of a sense of "shared appreciation" of the common problems that cut across the divisions that separate the different island interests--was fully achieved.

With regard to the participant and lead agency response to the search conference, four quotations from concluding statements at the conference present reactions in the participant's own words. First, from a member of the government planning unit who was also one of the locally-based co-chairmen of the conference:

> This search conference...brought together, probably for the first time in the history of St. Lucia, a number of people cutting across different backrounds, different types of qualifications, and representing a host of different agencies to look at...energy, in all its senses. We were asked to look at the futures in terms of existing capabilities, constraints, and opportunities...physically, socially, economically, and otherwise.
>
> When we look at energy in terms of the conclusions of this conference, two main things stand out: one, that the energy question is not an isolated sectoral issue...it must be viewed in an integrated, holistic, comprehensive manner...We have got to continue addressing our minds to the essential questions of energy. But for the very first time we have a plan. We realize that we all have a stake...in the future, and that if

> we begin to make the right decisions now, then we stand a better chance of coping with the future with all its uncertainties, risks, and complexities.(Morley et al., 1982, 53-54)

The same theme of maintaining the process begun at the conference was taken up by the Chief Economic Planner (who had been a key actor during the project design stages):

> The most important thing that should come out of this conference is the development of very strong pressure groups and organizations...keeping government on its toes in terms of the implementation of the recommendations and policy proposals made here today. To this end I would like to see the action groups...maintain their momentum after we leave. (Morely et al., 1982, 55).

Further encouragement was given to the participants by the Parliamentary Secretary to the Prime Minister's Office in his closing address to the conference:

> Probably the most valuable aspect of this entire conference has been the testing in the St. Lucian context of what the...process offers people by showing what broad-based integrated national policies can achieve...it is particularly important that all sectors are involved in the decision-making process...a truly unified national policy can be reached by integration of the entire society in a process of planning for the future. (Morely, et al., 1982, 57).

Finally, a comment from a participant at the conference gives an insight into the nature of the facilitating role in this process:

> This entire methodology...would not have been possible if we did not have a group of persons who are dedicated to the idea and who exerted, what I am sure was, extreme self-control by remaining in the background and letting us go to it. I don't know how they did it, but they managed to keep quiet and let us fumble until we eventually found our way. (Morely, et al., 1982, 58).

4. Follow-Up of Proposed Actions Among Domain Constituencies (Post-Conference Phase)

This section of the project is concerned with the continuation of the process begun at the search conference. Since search conferences are designed to be used in settings where there is already a growing recognition of the need for new kinds of organizational response to changing conditions, the critical test of its success is the extent to which it can generate continuing collaborative activity involving the organizations and interests associated with the issue.

The recommendations made by the participants at the St. Lucia event proposed both long-term directions for the nation's energy futures and various immediate means of generating actions that might lead towards those possible futures. Following the conference, and the encouragement given to the participants to extend their collective work into their home base organizations, interest groups, and communities, a significant proportion of the participants continued to meet under the convenorship of the conference secretariat. In this way, a locally-based group took over the role of the external facilitators who remained connected with the process as distant observers and analysts (in this case, the analysis of a household-energy survey that had been generated and carried out by St. Lucians during the period up to the conference). It was most important that the follow-up activities occured as a result of initiative taken by the participants in their constituencies. Only in this way could the action researchers avoid the trap of so much international development work-- the dominance/dependence relationship between expert and local practitioners.

The follow-up activities associated with this action research project were numerous. In brief, the participants held a number of meetings to establish strategies for their continuing activity and to make contact with key actors in the energy field who had not been at the conference. They decided to maintain a seperate identity for the time being, and wrote a report on the conference and its recommendations for distribution throughout the island. Visits were made to key political figures; media presentations took place; and proposals were made to particular organizations for implementing certain of the conference proposals that related to energy conversation. In the case of the Water Authority, for example, this led to a rapid implementation of energy-saving measures that had been under discussion for a long period prior to the conference.

In addition to this collective activity, individual participants took action in their own community and work settings. The result was a wide range of activity: the incorporation of energy issues into school curricula; the emergence of a new energy conservation consultation company operated by two participants who had small businesses associated with the energy field; and the raising of the energy issue at meetings of community and service organizations. A major step taken by the core group of active conference participants was the creation of a Standing Committee on Energy Futures, both to sustain the purpose and direction of conference recommendations by acting as a clearing house for member's individual activity and to broaden the range of people and interests involved.

Government-employed participants played an active role in this process within their own departments, as well as sharing in the general process discussed above. Energy issues have continued to be raised within the Central Planning Unit and a draft of the energy section of the National Plan has been completed drawing on the material and recommendations produced by the search conference. It has also been proposed that the participative style introduced at the search conference will be continued through open public discussion of the new National Plan.

5. Evaluation of Continuing Process

An important stage in this style of action research is the careful evaluation of the post-conference process by the researchers and participants after sufficient time has elapsed to provide evidence of the levels of follow-up activity and the diffusion of the process into the constituencies that make up the problem domain. In the case of St. Lucia, an evaluation took place six months after the conference. The evaluation was based on a detailed record of the events throughout the post-conference period made by the secretariat, the completion of a questionnaire on individual participant activity, and a visit by members of the York team at the six month point to meet with both participants and others to whom the process had relevance. In addition, the researchers held a short training course for participants, focusing on the theory and practice of search conferences with the intention of providing a basis for the use of the approach by a St. Lucian team of facilitators. This type of transfer of techniques is also a key expression of this style of action research project.

The success of a search conference is therefore measured by : 1) the extent to which it can be integrated into the activity of existing organizations and interests, and continue to generate shared (multi-organizational) responses among the participants and their colleagues; 2) the extent to which that shared understanding is

assisting in the formation of an adaptive, long-range planning process that is participative and anticipative, and can lead to the consideration of alternative futures. Set against these criteria, the St. Lucia search conference process did demonstrate significant initial success. Of course, the monitoring of on-going activity will test the extent to which the continuing multi-organizational process can be sustained and lead to long-term and substantive results.

It must be remembered, however, that search conferences are only catalysts marking an attempt to initiate a process. The visible effect of a search event will fade as other means of increasing the capacity of the domain to cope with and respond to its constantly changing problem setting are used. Much that follows may indirectly be associated with the stimulus effect of the conference, but not be identified as being linked with it.

For the action researcher, the continuing involvement with such a process provides not only the basis for evaluating the previous phase of the project, but also an arena for further exploration of both the substantive content of the problem setting (in this case the nature of alternative energy futures for small LDCs and their implications for these societies) and the means of maintaining the shared action learning element that is central to the approach (Morley & Ramirez, 1983).

While the St. Lucia project was designed primarily as an exploratory setting for testing the application of action research in a situation illustrating environment and development issues at local and regional scales, it does provide some basis for evaluating the potential of parallel theory- and action -oriented research discussed above. There are obviously a number of key empirical research questions generated by this research that relate both specifically to very small LDCs and more widely in developing world settings. The implications of externally-generated meta problems of the type represented by the energy issue are graphically demonstrated, as is the capacity of such societies to respond (formally and informally) on the basis of indigenous human resources. In addition, many issues regarding the relationships between international agencies and associated expert analysis and small LDCs are raised by the project. A particular well-demonstrated case is the nature of the diffusion of appropriate energy technologies into such settings. Further specific information was generated that is highly relevant to the question of environmental impact of the energy problem in small LDCs and the nature of social awareness and response to such conditions. In all these instances the action research component of the wider project produces information generated by the participant constituencies themselves and provides a framework for the evaluation of current externally-based analysis of the energy problem as it is generated by academic research and consulting and international agency reports. Further publications relating to this project will focus on this substantial research linkage element of an action research project.

6. Continuing Domain-Based Action Learning Process

It has already been suggested that a successful action research project is one that can be sustained by the local participants without the continued involvement of the external action research team. However, if there is a request for continuing involvement of the research team by the lead agency and other active domain interests, then there are considerable returns from continuing the co-researcher relationships. In the case of St. Lucia and the York team, the initial project has been

broadened and generalized as a result of suggestions made by local planners and a new phase of the project will focus on the design of an environment and development training program based on the nation's own human resource capability and drawing on external expertise within an action learning framework. This broad-based, design-oriented activity will allow further detailed examination of both existing local problem settings and the joint exploration of alternative future geographies.

CONCLUSION

The full implications of the introduction of the action research model into applied geography have yet to be worked out. Indeed, there do not appear to have been previous published accounts of the direct use of the approach within a geographical context, although there are many settings in which it might have been applied. It can, however, be stated that it has wide and significant implications, that its adoption will be a demanding task, and that there is no obvious way of introducing such an innovation into the discipline other than through continued demonstration.

There are three areas in which action research demonstrates a particular shift in practice for applied geographers: 1) the nature of the pedagogy inherent in the process; 2) its emphasis on collective/organizational decision making, and 3) the extension of a geographical perspective into multi-organizational systems.

The pedagogy of action research (i.e. the transfer of knowledge between researchers and client/participants), as it is applied in this paper, is based on the generation of more intense experiental learning among participant stakeholders by increasing their awareness of, and confidence in, their ability to play an active role in the wider domain environments that surround their everyday life spaces. This implies the stimulation of their perceptual capacities to detect and extract relevant information from complex and changing environments. It assumes that an inherent knowledge of changing environments is accessible to the interest-based communities operating within them, and that the various versions of that knowledge possessed by the different stakeholder constituencies can be used collectively to enhance their overall capacity to invent and implement more desirable futures. The role of the researcher as facilitator of that learning process involves the creation of a setting in which the participants can direct their attention to different ways of framing the problem, to new directions in which changes can be made, and to broadening their understanding of the implications of shifts in the wider contextual systems in which domain is set.

This pedagogic style not only emphasizes self-generative processes of learning, but also associates these with the shared or co-learning aspects of operating within multi-organizational settings. Unlike most organizational study within geography, with its ex-post-facto analysis of the outcomes of past organizational decisions, action research requires the researcher to facilitate, observe, and advise within on-going situations in real-time.

Finally, the suggestion that increasingly "richly-joined" environments (Ashby, 1960) are demanding responses from previously disconnected and unused multi-organizational systems, makes it necessary to participate in the generation of such systems prior to understanding them as spatial systems. Despite the fact that systems of this type exist now and have long formed the focus of geographical

research (i.e. metropolitan cities, regions, industrial sectors, policy systems, problem domains--energy, environment, transport, housing, etc.), they have rarely been viewed as potential interactive learning systems. These are the primary focus of the form of action research presented here. It provides in-depth insights into composite human organizational systems with the potential "requisite variety" (Ashby, 1956) to respond to their attendent, persistent, and serious problems, and it is capable of creating adaptive frameworks for interaction, collaboration, innovation, and change.

Multi-organizational domains undoubtedly have a spatial expression; in fact, that dimension clearly has a potentially important role in their description and analysis. However, since they have only recently been recognised as part of our organizational culture, they cannot be identified other than through direct (action research) involvement until after they have been used as a basis for integrated, interest-based planning (Chevalier, 1968).

The question of the legitimacy of the applied geographer's role as an action researcher focuses, therefore, on whether they can effectively use it to participate in the change and uncertainty that lie at the roots of the demand for their services while retaining their capacity to analyse these emerging actional settings from a professional geographical perspective.

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