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MEMBERSHIP IN PUBLIC PARTICIPATION:

AN APPLICATION OF COLLECTIVE ACTION THEORY

BY

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled, "Membership in Public Participation: An Application of Collective Action Theory," submitted by Margaret L. Wight in partial fulfillment of the requirements for the degree of Master of Arts in Sociology.

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ABSTRACT

Within the framework of collective action theory, this work examines the problem of predicting membership in public participation programs. Classic collective action theory has focused on the analysis of selective incentives for participation. The recent formulations of Oliver (1984) and Klandermans (1984) have introduced into analysis considerations of collective incentives. In theoretically developing these collective incentives, Oliver (1984) and Klandermans (1984) arrive at rival hypotheses concerning the effects of expected participation by others on an individual's own participation. This is referred to as the pessimism hypothesis.

Using survey research data on a public participation program associated with a social impact analysis, this thesis tests these rival hypotheses. Support was found for Klandermans's proposal that pessimism concerning others' participation has a negative effect on an individual's own participation. Following Oliver's suggestion that levels of membership must be considered, the effects of pessimism as well as other incentives for collective action were found to differ for active and token members. Finally, the importance of further development of the concept of

instrumentality of the program for achieving the collective good is suggested.

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CHAPTER ONE

INTRODUCTION

The present study endeavors to understand public participation as collective action. Theories of collective action are used to predict membership in a voluntary organization associated with a public participation program. The primary theoretical focus is on the relationship between an individual's attitude about the participation of others and their own participation. Collective action researchers agree on the existence of this relationship, but they disagree on its direction. Oliver (1984) proposes the "If I don't do it, nobody else will" hypothesis. According to this hypothesis, individuals who are pessimistic about the likelihood of participation by others will be more likely to participate themselves. In short, Oliver hypothesizes a positive relationship between pessimism about the participation of others and their own participation. In contrast, Klandermans (1984) posits an negative relationship between the same two variables. He argues that "the expectation that others will participate works as a self-fulfilling prophecy" (Klandermans, 1984:597). Thus, according to Klandermans, participants should be less pessimistic about

the participation of others than are nonparticipants. This thesis tests these rival hypotheses through an examination of data on a public participation program.

The context of the present case study differs significantly from the social movement context in which theories of collective action were generated. This study examines a public participation program in a small community (Keephills) in central Alberta, which was initiated as part of a social impact analysis. Thus, on a methodological level, the current research tests the applicability of these collective action hypotheses within a new empirical context. Chapter Three provides a short description of the study from which data for this analysis is drawn.

To summarize, the present research tests the utility of using theories of collective action to predict involvement in the public participation program associated with a specific development. The theories of collective action are developed in Chapter Four, operationalized in Chapter Five, and tested in Chapter Six. Defining a new empirical context for examining these theories demands explication of a number of other questions:

1) What is participation?
2) Why study participation?
3) How do we study participation?
4) What is the empirical context of the present study?

These questions are briefly examined in the following sections of this introduction and will be specifically dealt with in the remaining chapters.

What Constitutes Public Participation?

The Definitional Literature

As noted by Sewell and Phillips (1979:338), "(t)he quest for a greater degree of public participation in planning and policy making became one of the major social movements of the late 1960's and early 1970's. To an important extent, the movement continues in North America, Europe and elsewhere..." (as quoted in Bowles, 1981:58). The growth of such programs has spawned research which examines the programs and their consequences. In the United States, for example, the profusion of research generated by the "Model Cities" and the poverty programs have examined participation. To date a unified body of knowledge has not emerged from these works. As Dachler and Wilpert (1978:1) state, the "literature is lacking in

definition" and "explicitly stated [and testable] theoretical frameworks."

Nurick (1982:414) concludes that "... the fragmentary nature of participation [research] may be indicative of problems inherent in the examination of a multidimensional phenomena from divergent points of view." A starting point for the present research then, must be to clarify the meaning of participation. This task is undertaken in Chapter Two.

Why Study Participation?

The Paradigmatic Orientation

Dachler and Wilpert (1978:1) identify two paradigmatic orientations in the literature on participation in decision making: 1) a concern for the "social policy implications of participation" and 2) "social science research on the phenomena of participation." Examining public participation within the context of social impact analysis has traditionally focused on social policy implications (Canter, 1977; Finsterbusch,1977). This applied aspect - the social policy implications - explains why public participation has been examined in social impact research. The collective action literature, in contrast, focuses on

the phenomena of participation. It aims to understand how and why individuals participate rather than to evaluate the results of that participation. The desire to increase knowledge of a particular social phenomena provides the reason for such collective action research. This thesis falls within the latter category. It aims to explain involvement in the public participation program rather than evaluate the effects of that involvement.

How is Participation Studied?

The Theoretical Framework

Theories and paradigms are not equivalent. Rival theoretical explanations for a particular phenomenon can exist under the umbrella of a single paradigm. Social scientists, for example, have approached the question of why people participate from a variety of theoretical orientations.

Involvement in public participation programs associated with a social impact analysis has traditionally been viewed from the perspective of community studies. Within a community action framework, community leadership and involvement are brought to the foreground (Poplin, 1979; Hassinger and Pinkerton, 1986). In essence, taking

this perspective has traditionally focused examination on the social dynamics of the community and on the identification of leadership types. The association of community power structures with community action programs has been investigated within this framework (Hawley, 1963; Smith, 1976; Lincoln, 1976).

While clearly applicable to the context of a social impact analysis, this approach cannot be easily extended to other contexts where participation has been studied. Most social movements, for example, are not community based. The participants in the Pro-Choice movement or members of the National Organization of Women come from across the country. An attempt to explain such membership in terms of a community based theory would encounter severe difficulties.

In contrast, theories developed to explicate participation in other contexts, e.g., membership in social movements or unions, can plausibly be extended to deal with participation in the context of social impact analysis. Such research generally views participation as a form of collective action and uses variables related to resource mobilization and/or social psychology to predict involvement.

This thesis attempts to apply theoretical formulations developed in the collective action research to explicate

participation in the context of an social impact analysis. These formulations are described in detail in Chapter Four, operationalized in Chapter Five, and empirically tested in Chapter Six. As such, this thesis acts primarily as a test of the range of phenomena to which the collective action theories can be applied and secondarily as a test of the theories themselves.

Where is Participation Studied?

The Empirical Context

As noted above, the question of context permeates the current research. It provides the background within which variations in patterns of involvement can be explored. As noted by Hougḥland (1979:84), "...uncertainty continues to exist regarding the extent to which research findings from any given type of voluntary organizations can be applied to other types." This uncertainty can only be overcome by careful delineation of the relevant dimensions of the contexts. Defining the context of public participation provides a framework that can be contrasted to other types of voluntary organizations. This framework may clarify findings in the analysis of who participates in public participation.

Attempting to define the context of public participation involves two steps. The first is to examine various typologies of public participation and to place the case study as an example of one of these types. It is proposed that other types of participation programs may provide other contexts under which hypotheses may be tested. Secondly, the essence of collective action must be defined and the case study must be placed as an example of voluntary action. This will have defined the empirical context within which the hypotheses concerning membership are tested. To accomplish these tasks the context of the present case study is explicitly addressed in Chapters Two and Four.

CHAPTER TWO

EXPLICATING PARTICIPATION

This chapter aims both to delineate the possible roles for the public within a public participation program and to identify the roles relevant to the present case study. In order to accomplish these goals, this chapter has been broken into three sections. The first section examines typologies of participation drawn from a variety of contexts: social impact assessment, the workplace and the neighborhood. These typologies share a common focus: the extent of power accorded the public. The relationship between the power given the public and the roles played within a participation program by the public is explored. It is argued that the degree of power given the public defines the possible roles played by a public participation program. The degree of power accorded the public is presented as a hierarchy. As greater power is accorded the public, the possibility of shared decision making emerges and the structure of shared decision making provides for the possibility of conflict resolution.

The second section examines proponents' definitions of participation. This section documents that definitions of participation imply differences in the extent of power

accorded the public. By making the extent of power accorded the public explicit, the implied roles of public participation within the definition are no longer obscured. It is within this context of the roles of a public participation program that the phenomena of public participation must be understood. The roles of the participation program will influence the public perception of the possible efficacy of the program and thus the willingness of individuals to participate.

Building upon the arguments in the second section, the third section describes the context of the present case study. It classifies the participation program under study in terms of the extent of power accorded the public. Taken together, these sections define the context of the current study and provide a basis for comparing the results of the present study with those from other studies.

Typologies of Public Participation

Conceptualizations of what constitutes public participation vary widely and a review of the literature shows the decision making power accorded the public to be of main contention in the administration of the programs (Oskamp, 1984; Van Til and Van Til, 1970). Dissatisfaction

with public participation programs has brought to the foreground this issue. Effective participation is seen as

> "... the ability of citizens to meaningfully participate in the creation of desired futures and not simply their ability to react to past problems or respond to predicted futures" (Gibson and Worden, 1984:31).

The difference between the ability to create and the ability to respond is dependent upon the ability to make decisions. An examination of classificatory schemes of public participation shows that although not necessarily stated, the schemes delineate this issue of decision making power in participation. Three classification schemes are presented below in order to clarify the roles that public participation programs may play within the dimension of the decision making power of the public. Three different approaches to studying participation are represented in the following typologies. Bowles (1981) addresses the question of participation within a social impact perspective. Arnstein's (1971) work is developed within a citizen action framework. Blumberg's (1968) levels of participation are developed within the context of workers' satisfaction. The degree of power held by participants is delineated by all three approaches.

Bowles's Perspectives on Participation

A planning perspective on the role of social impact assessment and public participation delineates various stages in project development. At each stage, different issues become more salient and different types of input are required. This type of approach toward the management of change has traditionally implied an input role for public participation. Bowles (1981) illustrates this in describing a top-down perspective on participation. The top-down perspective

> sees those at centralized decision-making points as having the technocratic expertise to deal with the issues of planning. Participation is seen as providing one additional type of data which official decision makers must take into account. The extreme form of this view regards participation as something which should be orchestrated from the top so that public input occurs at those times or on those issues which are deemed appropriate by the agency (Bowles, 1981:58-59).

In contrast, the bottom-up view of participation sees participation not as a means to public input but as a means to implement public power.

> A "bottom-up" view of participation regards participation as a process by which community members become active and effective participants in making decisions concerning those phenomena which potentially shape their lives (Bowles 1981:59).

This division between an input role and a decision making role is a basic element in Arnstein's and Blumberg's schemes. Within these two roles, they have developed more detailed differentiations of degrees of power.

Arnstein's Classification of Participation

Arnstein's (1971) analysis of participation types is based on a hierarchy of levels of citizen power (see Table 2.1). The bottom rungs of the ladder - "Manipulation" and "Therapy" are classified as "Non-Participation" types. Here the citizens are acted on rather than reacting or acting.

The next three rungs - "Informing", "Consultation" and "Placation" are referred to by Arnstein as "Degrees of Tokenism." These levels contain essential elements in attaining a legitimate participation program but as end products they do not achieve full participation. The "Informing" level is characterized by a "one-way flow of information ... with no channel provided for feedback and no power for negotiation" (p.77). "Consultation" of citizens and inviting their input is the next stage in the hierarchy. Again, although an essential element of effective participation, consultation alone "offers no assurance that citizen concerns and ideas will be taken

into account" (p.78). This stage represents in Arnstein's term - "participating in participation" (p.78). It exemplifies the input role of public participation. The last level in this grouping is that of "Placation". Although still "Tokenism", at this level, citizens have some influence though the actual degree will depend on other factors. At this level, the citizen remains in "the peripheral role of watchdog" (p.80).

The final grouping of types in Arnstein's ladder identifies those levels which contain some degree of citizen power. At the "Partnership" level "power is redistributed through negotiation between citizens and powerholders" (p.83). "Delegated Power" refers to "citizens achieving dominant decision-making authority over a particular plan or program" through "negotiations between citizens and public officials" (p.85). The top rung of the ladder - "Citizen Control" is "that degree of power (or control) which guarantees that participants or residents can govern a program or an institution, be in full charge of policy and managerial aspects and be able to negotiate the conditions under which "outsiders" may change them" (p.86).

Blumberg's Typology of Participation

Blumberg presents a participation typology which "has arisen out of the codetermination literature in West Germany" (Blumberg, 1968:70). It is based on the extent of participation and the degree of power workers hold (see Table 2.1). Blumberg's main division is between cooperation and codetermination. These levels are equivalent to Arnstein's degrees of tokenism and degrees of citizen power. In the Co-operation level of this classification scheme, "[w]orkers influence decisions ... but are not responsible for these decisions" (Blumberg, 1968:71). In the Codetermination level, "[w]orkers control decisions and are responsible for them (Blumberg, 1968:71).

If Arnstein's classification and Blumberg's typology are compared as in Table 2.1, it is obvious that there are great similarities in their analyses. The sublevels within Blumberg's system parallel those of Arnstein's rungs of participation. As Blumberg (1968:70) points out, the levels at either extreme do not really express participation. The right to receive information in Blumberg's scheme or the informing stage of Arnstein's system, reflect a type of public information rather than public participation. At the other extreme, the right of

decision making (Blumberg) or citizen control (Arnstein) no longer reflects a process between two parties.

FIGURE 2.1: A COMPARISON OF ARNSTEIN'S AND BLUMBERG'S TYPOLOGIES OF PARTICIPATION.

ARNSTEIN'S EIGHT RUNGS ON THE LADDER OF CITIZEN PARTICIPATION	BLUMBERG'S TYPES OF WORKERS PARTICIPATION
NON-PARTICIPATION TYPES	
1. Manipulation	
2. Therapy	
DEGREES OF TOKENISM	COOPERATION
1. Informing	1. The right to receive information
	2. The right to protest decisions
2. Consultation	3. The right to make suggestions
3. Placation	4. The right of prior consultation
DEGREES OF CITIZEN POWER	CO-DETERMINATION
	1. The right of veto
1. Partnership	2. The right of co-decision
2. Delegated Power	
3. Citizen Control	3. The right of decision

Synthesis

Examination of these typologies illuminates the variety of roles that public participation programs may play. Public participation may be used as a means to implement input from the public. The input role may be broadened to incorporate prior consultation. This opens the possibility of unresolved conflict as the actual degree of influence the public holds remains undefined. The role of conflict resolution only becomes possible when partnership or the right of codecision is reached. The means of achieving a decision making role for the public is also partially realized at this stage. Full decision making power is achieved at the delegated power stage.

Just as these levels of participation are hierarchical, so are the roles that public participation may play. These roles will be further examined in Chapter Five in defining the instrumentality of public participation programs for achieving the collective good.

Definitions of Participation

In comparing various public participation programs, it is evident that what constitutes participation is interpreted differently by various proponents. This is partially reflected in differences in definition and the importance of how participation is defined can not be ignored. The definition provides the guidelines under which actors must play their parts. What fails to become explicit in many of these definitions is the issue of the decision making power of the public.

This aspect of public participation programs - that of power - can be used to categorize various definitions of participation. Canter (1977:220-221), for example, defined public participation as:

> a continuous, two-way communication process, which involves promoting full public understanding of the processes and mechanisms through which environmental problems and needs are investigated and solved by the responsible agency; keeping the public fully informed about the status and progress of studies and findings and implications of plan formulation and evaluation activities; and actively soliciting from all concerned citizens their opinions and perceptions of objectives and ends and their preferences regarding resource use and alternative development or management strategies and any-other information and assistance relative to plan formulation and evaluation.

This definition is clearly, in Arnstein's (1981) terminology, encouraging the public to "participate in participation." It can be classified as Co-operation in Blumberg's typology under the level of "the right to make suggestions." Opinions are invited but there is no assurance that input will be taken into account. (Arnstein, 1971:78) It could be suggested that definitions of public participation so eloquently written would find much less degree of acceptance if they were summarized to express the level of decision-making power. Public participation defined as the right to make suggestions succinctly expresses the roles the actors are expected to hold.

An example of a definition of participation that expresses the "right of co-decision" in Blumberg's terminology is given by French. Participation

> "refers to a process in which two or more parties influence each other in making certain plans, policies, and decisions. It is restricted to decisions that have further effects on all those making the decision and on those represented by them" (French, 1960:3 as quoted in Blumberg, 1968:70).

The role of the actors in this definition is that of joint decision making. Influencing each other implies a two-way flow of information and such a dialogue is a necessary condition for the role of conflict resolution.

The Context of the Present Study

Before classifying the definition of participation included in the program under study, it is necessary to examine both the state of the art of public participation programs and the particular history of projects in Alberta at the inception of the Keephills project. This material provides the background necessary to understand why the specific definition of participation embedded in the program under study was adopted.

The Development of Public Participation Guidelines

An examination of the development of official guidelines for public participation illustrates a coming to terms with the need to make explicit the dimensions of the decision making power of the public. In June of 1976, the Provincial Department of Energy and Natural Resources issued the Coal Development Policy for Alberta. The major references to public participation within this policy were in terms of public disclosure. Such disclosures aimed "to provide information to the public so that any interested person will be in a position to later submit his views to the Department of the Environment, the Energy Resources Conservation Board or the Minister of Energy and Natural

Resources or other appropriate Minister for consideration at the time of decision-making" (Coal Development Policy, 1976:33). Although public involvement was included in this policy, there was little indication of how the public would be incorporated into the project beyond the public disclosure and public hearing stages. Public involvement was presented as a public information program. This was the official state of public participation in Alberta prior to the Keephills project.

By 1976, it had become clear that such an approach to public participation could have devastating effects. In the mid 70's, TransAlta Utilities (then named Calgary Power), a Calgary based utility company proposed the development of the Dodds-Roundhill power plant and surface coal mine near Camrose-Ryley, Alberta. Strong community opposition led to the indefinite postponement of the Camrose-Ryley project in 1976 by the government of Alberta. This experience led TransAlta Utilities to approach the next project, Keephills, with a different perspective toward public participation. The importance of initiating a public participation program early in the process was now evident. The task was to evolve a method of achieving an effective public participation program.

On the provincial level, the changing philosophy was formalized in the spring of 1977 when Alberta Environment

published its Environmental Impact Guidelines. The Guidelines defined public participation as

> ... the establishment of a dialogue with the affected public directed toward providing an opportunity for the public to: understand the development and its potential effects upon their community, evaluate the significance of those potential changes; and jointly develop, with the proponent and relevant government agencies, measures to mitigate the negative effects of the development where required, and if possible (Alberta Environment, 1977:15).

The process and the structures through which this dialogue could be developed was one of the challenges facing TransAlta Utilities and the residents of the community of Keephills.

The Development of the Keephills Program

In 1976, after the postponement of the Camrose-Ryley project, TransAlta Utilities began selection of a new site. A tentative selection of the Keephills area was made and in late 1976, TransAlta Utilities proposed the development of the Keephills power plant and surface coal mine.

In the fall of 1976, a study of possible impacts on the community was begun. TransAlta Utilities, in a move to successfully implement "the establishment of a dialogue with the affected public" invited HERA Consulting Ltd. to do the social impact assessment. The public participation

program was to be a vital element of this assessment. A local committee - COKE (Committee On The Keephills Environment) - was formed to represent the concerns of the residents in January of 1977. "Coke was to meet with representatives from TransAlta Utilities, express the concerns of the community, raise issues and jointly seek solutions to problems as they emerged throughout the life of the project" (HERA, 1987:2).

HERA Consultants felt that the success of this program was dependent upon the structures that were established to open the possibility of active participation. "Although it was not common practice among developers at the time (1976), TransAlta Utilities delegated corporate responsibility for the social impact assessment to the Planning Division rather than to Public Affairs. This served to expedite joint decision-making between the community and the Corporation and this choice has been essential to the success of the social impact program" (HERA, 1987:4).

The Classification of the Keephills Program

By framing the Keephills public participation program within the typologies discussed, it is possible to define the context within which membership is to be examined. The

Keephills program can be understood as an example of the "Partnership" rung in Arnstein's typology or as the right of co-decision in Blumberg's classification. The mandate of joint decision-making defined the roles of the program. The Keephills public participation program as a "Partnership" type of participation incorporated three roles of participation. It aimed to provide input from the community and to share decision making responsibility with the local community organization. The dialogue established between TransAlta Utilities and the community provided the mechanism necessary for conflict resolution.

The delineation of these roles is essential to understanding perceptions of the instrumentality of the program for achieving the goals of public participation. In the context of social impact analysis, these goals focus on the mitigation of the negative impacts of development. In the broadest sense, the incorporation of the public into project planning aims to achieve more socially appropriate and responsive development. The value of this social goal is taken as given. The efficacy of public participation for achieving this goal, however, remains a variable. Perceptions of the possible efficacy of a public participation program is hypothesized to be a factor in influencing membership in the program. Chapter Four

develops a theoretical framework for incorporating these perceptions into a model for predicting participation.

CHAPTER THREE

DATA COLLECTION

By 1978, TransAlta Utilities committed themselves to an ongoing longitudinal study of the social impacts of the Keephills project. In the spring of 1978, a survey research project was undertaken in this area by HERA Consulting Limited. Respondents were interviewed concerning the potential impact of the projected development on their personal, family and community lifestyles. This preliminary social impact analysis constituted the baseline and initial data gathering for the anticipated longitudinal study. In 1981, at the request of TransAlta Utilities, a follow up survey was conducted by HERA Consulting Limited. It is this survey which constitutes the data base for the following research. Analysis relys on secondary survey research data rather than ethnographic research.

The Setting

Keephills is an agricultural community located 70 kilometers west of Edmonton, the capital of Alberta.

Historically, it has maintained a stable population. Sixty five percent of the population have lived in Keephills all their lives (Prokop, 1983:3). The Keephills hamlet has been the center of the established community. In 1976, it consisted of an elementary school, community hall, telephone exchange and four private residences. Most importantly, it functioned through the Keephills Athletic Association as the social center of the community.

The area defined as the Keephills community consists of about 84 square miles (336 quarter sections) containing roughly 110 families or 500 people (Prokop, 1983:3). The community is located on a major coal deposit (Highvale Mine) that extends from the Lake Wabamum area, 11 kilometers northwest of Keephills. The Keephills project was an extension of the Highvale mining operation and the proposed construction of a four unit coal-fired electric generating plant. To date, two units have been built.

It was projected that the power plant and the associated cooling ponds, ash lagoons and railways would affect 39 quarter sections of land within the community. Another 111 quarter sections were in whole or part included in the mine permit area (Prokop, 1983:3). The Keephills hamlet itself was also within the mine permit area. The possible impact on the rural community of such a large

scale project threatened the existence of the community (Goldenberg, et. al., 1985:12).

The issues for the community initially focused on the potential impacts on lifestyle, the potential for social and economic benefits and the potential of being "victims of corporate exploitation" (HERA, 1987:18-19). By 1981, three major issues were of concern to the residents of Keephills. They were relocation of the hamlet, land acquisition and compensation and land leasing policies.

The Respondents

The area studied in 1981 was defined by the community. The boundaries were delineated by using a map of the area. Working from a map of the defined area, a list of the residents was constructed. Anyone who lived in the community at the time of the survey was included in this list. Eighty five respondents were generated in this manner. These respondents were matched to the 1978 survey list. Respondents in 1978 who had left the area were contacted in the fall of 1981 generating an additional 11 respondents. The total sample surveyed consisted of 96 residents.

The Interview

Interviews were conducted by three trained interviewers working under a field director. Approximately one week before interviewers entered the field, each household was sent a letter informing them of the survey. This letter informed the residents that HERA Consultants were to be conducting the follow up study on the 1978 survey with regard to the impact of the Keephills thermal plant and designated coal field. It also informed them that COKE, the community committee, had been consulted with regard to the content and format of the actual interview schedule.

Respondents were contacted by the field director by phone in order to set up interview times at their convenience. Interviews were conducted between July 27th and August 12th, 1981. The average length of the interview was 45 minutes although they ranged from 30 minutes to one and a half hours.

The Questionnaire

The 1981 survey consisted of two sections. The first section, which was conducted as an interview, consisted of both closed and open ended questions dealing with issues which had been identified as important since the initial study had been carried out. Broadly, the questions dealt with the areas of information sources and type of information, involvement in public participation, attitudes towards landmen and land acquisition, relocation, and relocation of the hamlet.

The second section, which consisted of a set of Likert items, a set of semantic differential scales and a section on stress and uncertainty, was self-administered. This provided the interviewer with a brief period to review notes taken during the interview schedule, ensuring that all questions had been asked and answered. Completed interviews were sealed in an envelope marked with the respondents identification number and submitted to the field director at the end of the day.

CHAPTER FOUR

EXPLICATING MEMBERSHIP

This chapter argues that theories of collective action are applicable to the Keephills situation and that data from the Keephills context can be used to test the validity of rival theories of collective action. In order to accomplish these goals the chapter has been divided into seven sections. The first section examines two perspectives on the explanation of participation. It establishes the question in collective action as "Why do people participate?" rather than "Why don't people participate?" The second section describes the nature of collective action and justifies treating the Keephills public participation program as a collective action phenomena. The third through fifth sections develop theories of collective action. The third section describes the classic version of collective action theory. The fourth and fifth sections examine more recent theoretical formulations which extend the classic version. Each of these sections 1) describes the theory under consideration, 2) identifies the variables used by that theory to predict membership and 3) specifies the direction of the hypothesized relationships between the variables and

membership. In general, all three versions of collective action yield similar theoretical predictions. In one important instance, however, these versions lead to rival hypotheses. The opposing views on the pessimism hypothesis are examined in the sixth section. The seventh and final section summarizes the hypotheses which emerge from the collective action literature. These will be tested in Chapter Six.

Two Perspectives on Membership

Membership or participation in voluntary organizations can be viewed from one of two perspectives: explaining the participant or explaining the nonparticipant. According to Jenkins (1983:528), the new sense of social movements produced during the 60's focused research on explaining the participant. No longer could social movements and their members be considered "fringe" elements of society. Participation began to be examined within a rational action framework.

The realization that participation generally involves high costs has led collective action researchers to define participation rather than nonparticipation as the problematic. In examining the differences between

leadership roles in voluntary and employee organizations, Pearce (1980) concluded that .

> ... there is no need to assume a lack of affect, that is apathy in the inactive majority; a more parsiminious [sic] explanation is available. ... When volunteers have little to gain and much to lose by assuming active leadership roles in their organizations, it certainly is in many members' self-interest to maintain a rank-and-file role (Pearce, 1980:85,90).

Collective action research views the inactive participant as a rational role-type within a rational-action framework. How then can active participation in voluntary organizations be explained?

Klandermans (1984) proposes that there are three conditions that must be met if a person is to participate in collective action. "A person will participate in a social movement if s/he knows the opportunities to participate, if s/he is capable of using one or more of these opportunities, and if s/he is willing to do so" (Klandermans, 1984:584). The first two of these are necessary but not sufficient conditions for participation. They define the opportunity to participate. The third condition, willingness to participate, becomes the theoretical problematic in distinguishing between those with the opportunity to participate and those who actually

participate. It is this third condition which provides the theoretical focus for the present work.

The remainder of this chapter develops the problem of participation through an examination of the nature of collective action and the resulting collective action dilemma. In contrasting proposed attitudes of the nonparticipant (the free-rider) with the active participant, the "pessimism hypothesis" is derived.

The Nature of Collective Action

Oliver (1984:602) defines collective action as:

> activities which produce collective or public goods, that is, goods with the non-excludability property that their provision to some members of a group means that they cannot be withheld from others in the group.

The essence of collective action is then, its orientation toward a collective good.

The Collective Action Dilemma

The nonexcludability property of a collective good leads to what is referred to as the "free-rider". Those who benefit from collective action without contributing are

considered to be riding free. The collective action dilemma is based on acknowledging the rationality of riding free. Olson (1965) presented the classic version of the collective action dilemma. Given that benefiting from the collective good is not dependent upon participation, his conclusion was that: "[r]ational individuals will not participate in the production of a collective good unless selective incentives motivate them to do so" (Klandermans, 1984:585). These incentives have been incorporated into theories of collective action in terms of subjective and objective interests (Oliver, 1984) and social and reward motives (Klandermans, 1984).

Keephills as Collective Action

The Committee on Keephills Environment (COKE), as a community committee, was operating under Oliver's definition as a form of collective action. Those activities such as land negotiation which pertained to individuals, were not addressed by COKE. Rather, the committee was involved in the hamlet relocation, organizing public forums and negotiating with the company concerning environmental and social collective goods. In addition, the attitude of the residents was that the public participation program was to achieve a public good.

"Residents of the Keephills area appear to agree that the purpose of public participation is not to achieve personal, pecuniary ends. For example, only 13 percent agree that "local people who participate in public participation programmes are just out for what they can get," while 77 percent disagree with this statement" (HERA, 1982:6).

Because leaders in voluntary associations generally incur high time and energy costs for low monetary rewards, the explanation of participation is problematic. It is clear that one of the problems that participants in the Keephills public participation program had to face was the cost of participation. "...[T]he leaders of the community had little or no experience with the concepts of public participation, environmental impact assessment, and social impact assessment..." (HERA, 1987:47). Part of the participation program included the efforts to provide this knowledge and experience through opportunities to attend symposia, workshops and field trips (HERA, 1987:47). The time and effort of participants to acquire this experience was a major cost of participation. Looking at public participation as a form of collective action provides a theoretical framework for taking these costs into account.

To summarize, this section has argued that COKE was a voluntary organization oriented toward providing collective goods. As such, the benefits which flowed from the

activities of COKE were available to both members and nonmembers. Moreover, involvement in the public participation program entailed high costs of both time and energy. Thus, the Keephills context embodies the collective action dilemma and the theoretically interesting question becomes how to account for participation in the program. The next three sections develop theoretical frameworks which have been used to explain participation in other contexts.

Classic Theory and its Limitations

Building upon Olson's (1965) conceptualization of the collective action dilemma, classic collective action theory holds that individuals will not participate unless selective incentives motivate them to do so. To suggest otherwise, involves attributing altruistic motives to individuals. Instead, it is proposed that individuals are motivated by distinct, divisible benefits. The factors that generate such selective incentives can be grouped into three general categories: costs, benefits and social ties.

According to collective action theory, indicators of socioeconomic status measure the costs of participation. Thus, the widely documented positive relationship between

socioeconomic variables and participation (Verba and Nie, 1972; Smith and Freedman, 1972; Oliver, 1984) can be understood as an outcome of the increased cost of participation in terms of time and "psychological costs" for the lower SES groups (Oliver, 1984:603). O'Brian (1974; 1975), for example, argues that low income individuals are too concerned with survival to expend time in voluntary organizations. Similarly, participation in voluntary organizations generally requires skills that are more common among educated individuals, e.g., organizational skills, public speaking skills. Thus, collective action theory proposes that education and income are determinants of participation. They are hypothesized to be positively associated with membership by virtue of reducing costs.

In examining benefits of participation, Oliver (1984:603) suggests that a distinction can be made between benefits relating to "subjective interests" as indicated by statements of concern about neighborhood problems and "objective interests" as indicated by demographic characteristics. The objective interest Oliver selects is being a homeowner. Oliver proposes that objective interest increases the likelihood of an individual becoming a member.

Measures of social ties tap the third factor identified by classic collective action theorists as providing selective incentives. Some researchers (Granovetter, 1973; Snow et al, 1980) view social ties as important because they promote social solidarity. Others argue that social ties foster more effective communication and thereby reduce the costs of participation. Since the Keephills data indicated that strong social ties were present for virtually all respondents and hence a constant for this analysis, this controversy will not be explored. For present purposes is is sufficient to note that whether formulated in terms of promoting solidarity or in terms of reducing costs, social ties are hypothesized to have a positive relationship with membership.

To summarize, classic collective action theory argues that collective benefits alone cannot motivate rational individuals to participate because those same benefits are available to the free-rider. Thus, the explanation of participation must focus on the motivating influence of selective benefits, i.e. distinct and divisible benefits that accrue specifically to the individual participant and are not available to the free-rider. Classic collective action theory identifies three broad categories of factors which serve to provide such selective incentives: factors which reduce the cost of participation, factors which

reflect benefits relating either to subjective or objective interests and factors associated with social ties.

The limitations of the classic approach have been widely noted (Schwartz, 1976; Mitchell, 1979; Fireman and Gamson, 1979). Jenkins (1983:536), in a review of research centering on selective incentives in collective action concludes that the studies refute the hypothesis that no one will contribute to the collective good in the absence of selective benefits. This conclusion poses a grave problem for the classic version of collective action theory. If selective incentives are not a necessary condition of participation, then what factor(s) motivate individuals to participate in their absence?

In an attempt to overcome this problem, recent research has focused upon the motivating influence of collective, as opposed to selective, incentives. This research argues that, under certain conditions, the benefits associated with collective goods can act to motivate rational individuals. According to the classic version of collective action theory this cannot happen because these same benefits will flow to the free-rider. This interpretation, however, is based upon the assumption that the benefits will be attained and, thus, the free-rider will be able to collect a portion. But what if the benefits are not attained? In that case the individual

cannot ride free because there are no benefits to take advantage of.

Significantly, the decision to participate or not to participate is made before the individual knows whether or not the collective good will be realized. In taking account of this fact, recent extensions of classic collective action theory argue that expectations about the likelihood that the collective good will be realized are related to participation. This view leads Klandermans (1984) to formulate a definition of the free-rider which takes into account the free-rider's expectation that achieving the collective good will not be dependent upon his/her participation.

> A free-rider is someone who believes that his/her own contribution to the probability of success will be very small, but who believes that the number of participants and the probability of success are large enough to expect that the collective good will be produced (Klandermans, 1984:585).

Theories harmonizing with this revised definition of the free-rider are examined in the following two sections.

Oliver's Extension of Classic Theory

Oliver (1984) examined data from Detroit, Michigan in an attempt to predict participation in neighborhood associations. Building on the collective action dilemma, she argues that it needs to be extended in two basic ways. First, Oliver proposes that in addition to costs, benefits and social ties, a fourth general factor is important: expectations about the behavior of others. Second, she documents the importance of distinguishing between levels of membership.

Oliver's proposal that expectations about the behavior of others are important in determining participation extends classic theory by providing a role for collective incentives. Developing the concept of the free-rider, motivation to participate is seen as being related to an individuals belief in whether others will participate, i.e., provide the collective good. Predicated on a rational action framework, Oliver (1984:602) proposes that "[p]eople who believe others will provide the collective good are motivated to ride free:..." Stated the other way, people who believe others will not provide the collective good are motivated to participate.

Thus, Oliver proposes a positive relationship between the expectation that others will not participate and one's own willingness to participate. In essence she claims that people are motivated to participate because they believe that "If I don't do it, no one else will." Using generalized measures of how ready neighbors would be to help each other as indicators of pessimism, Oliver tests this hypothesis. In a study of determinants of membership in neighborhood organizations, Oliver (1984) concludes that perceptions of others' behaviors affect participation in voluntary associations. Those who are more pessimistic about others willingness to participate are more likely to become members themselves.

Oliver's second major extension of previous theories involves distinguishing between active and token contributors. Critiquing the literature on attitudinal measures of concern for the collective good, Oliver suggests that a distinction must be made among levels of participation. "In theoretical terms, gross category membership is relevant for defining the population at risk, but not for determining the level of contribution a person is willing to make" (Oliver, 1984:603). Oliver distinguished between nonmembers, token members and active members. Thus, Oliver argues that distinguishing between members and nonmembers involves different effects of

theoretical factors than distinguishing between active and token members. Her results support this claim. She found, for example, that measures of economic interest, e.g., homeownership, played a significant role in distinguishing members of neighborhood organizations from nonmembers. Such measures, however, played no significant role in distinguishing active members from token members. In contrast, given membership, education distinguished between active and token members (Oliver, 1984:607,608).

Of particular interest is the relationship between expectations about the participation of others and levels of membership. Contrary to her hypothesis, Oliver (1984:608) found members to be less pessimistic than nonmembers concerning others' participation. However, in support of her hypothesis, she found active members to be more pessimistic than token members.

In summary, like classic collective action theory, Oliver proposes that education and income, social ties and objective interests are positively correlated with membership. She expands upon classic theory, however, by hypothesizing that pessimism concerning others' participation will also increase participation. Oliver submits that the strength of the effects of these variables will differ for token and active members.

Klandermans's Extension of Classic Theory

Klandermans (1984) examined data from the Netherlands in an attempt to predict participation in a union campaign for a shorter working week. In doing this Klandermans extends classic collective action theory in two distinct manners. First, he attempts to fuse social psychological and resource mobilization theories of participation within the framework of expectancy-value theory. This involves a fundamental reformulation of collective action theory. Second, like Oliver, he focuses upon expectations about the probability that the collective good will be realized.

Before examining these contributions, however, it is worth emphasizing the underlying similarity between Klandermans's work and that of other collective action researchers. According to Klandermans, the expected benefits of participation are a composite of the collective motive, the social motive and the reward motive. The collective motive encompasses the motivations arising from the benefits associated with collective goods. The social and reward motives encompass the selective incentives identified in classic collective action theories. In other words, these factors merely represent an alternative

classification for the factors discussed in the preceding two sections.

Klandermans's major extension of classic collective action theory involves his use of expectancy-value theory. While agreeing with previous collective action research on the types of factors that motivate individuals to participate, expectancy-value theory reformulates the social psychological process of motivation. Klandermans argues that motives to participate are composed of two elements: 1) the value placed by the individual on the motivating factor and 2) the expectation that participation will have an impact on achieving the rewards associated with the motivating factor. Furthermore, he proposes that these elements are multiplicative. Figure 4.1 provides a schematic representation of Klandermans's theory showing how expectancy-value theory takes both of these into account.

FIGURE 4.1: SCHEMATIC REPRESENTATION OF KLANDERMANS' THEORY

1. REWARD MOTIVE =

VALUE OF COSTS AND BENEFITS

TIMES

EXPECTED REACTIONS OF SIGNIFICANT OTHERS

2. SOCIAL MOTIVE =

VALUE OF REACTION OF SIGNIFICANT OTHERS

TIMES

EXPECTED REACTIONS OF SIGNIFICANT OTHERS

3. COLLECTIVE MOTIVE =

VALUE OF THE COLLECTIVE GOOD = 1. INSTRUMENTALITY OF THE PROGRAM
TIMES
2. VALUE OF SOCIAL CHANGE ADVOCATED

TIMES

EXPECTATION THAT PARTICIPATION WILL ACHIEVE THE COLLECTIVE GOOD = 1. EXPECTED NUMBER OF PARTICIPANTS
2. EXPECTED CONTRIBUTION OF OWN PARTICIPATION
3. EXPECTED SUCCESS IF MANY PARTICIPATE

The major innovation incorporated in expectancy value theory is the recognition that individuals vary in the

value they attach to the various incentives. Social status, for example, may be important to one individual and more or less important to another. Thus, motivation cannot simply be viewed as arising from the expected costs and benefits of participation. Instead, motivation is viewed as a product of those expectations and the value placed by the individual upon the expected costs and benefits. More specifically, as shown in Figure 4.1, the social motive is a product the "value of [the] reaction of significant others" and the "expected reaction of significant others to participation and to non-participation." The reward motive will be a product of the "value of costs and benefits" and the "expected costs and benefits of participation and non-participation." The collective motive is a product of "the value of [the] collective good" and "the expectation that participation will help to achieve the collective good" (Klandermans, 1984:587).

To summarize, expectancy-value theory postulates a multiplicative relationship between expectations and values. In statistical terms this implies a role for interaction effects. Thus, Klandermans's model differs substantively from those of Oliver and classic collective action theory. Where the latter postulate models focusing upon main effects, the former postulates a model focusing upon interaction effects.

Klandermans's second extension of collective action theory involves his specification of the values and expectations associated with the collective motive. Klandermans, like Oliver and in contrast to Olson, argues that collective benefits can motivate individuals to participate. Klandermans, however, provides a more inclusive view of this process than that provided by Oliver. First, using expectancy-value theory, Klandermans views the collective motive as encompassing both expectancies and values while Oliver focuses only on expectancies. Second, Klandermans provides a more detailed and inclusive specification of the expectancies associated with the collective motive than does Oliver.

Turning first to Klandermans's conceptualization of the value component of the collective motive, he defines the value of the collective good, as the product of the "value of social change advocated" and the "instrumentality of [the] collective good for [the] social change advocated" (Klandermans, 1984:587). In his research on participation in a union campaign for a shorter working week, reduced unemployment was treated as the social change advocated and the notion of a shorter working week was defined as the collective good. Thus, according to Klandermans's, the value an individual attached to a shorter working week was a multiplicative function of 1) the importance given to

reducing unemployment and 2) the instrumentality of a shorter working week for reducing unemployment. Klandermans argued that everyone favors reducing unemployment and, hence, the value of that change amongst the public is essentially a constant. Under these conditions the value of the collective good (a shorter working week) is equivalent to the instrumentality of a shorter working week for reducing unemployment.

Applying a similar logic to the Keephills situation, it is argued that the value of socially appropriate and responsive development can be taken as a given. Under these conditions the value of participating in a program designed to minimize the impacts of development is conceptually equivalent to the perceived instrumentality of the public participation program for accomplishing that goal. Thus, the commonly held desire to minimize impacts can only motivate an individual to become involved if the individual perceives the public participation program to be an effective forum for influencing the course of development and, hence, minimizing impacts.

To summarize, the first difference between Klandermans's and Oliver's conceptualization of the collective motive follows from Klandermans's utilization of expectancy-value theory. Klandermans's formulation of the

motive envisions a role for considerations of the instrumentality of the program while Oliver's does not.

Klandermans's treatment of the expectancies that affect collective incentives also differs from that of Oliver. He suggests three factors enter into the assessment of whether the collective good can be achieved: 1) expectations about one's own contribution to the probability of success; 2) expectations about the probability of success if many people participate; 3) expectations about the number of participants (1984:585). Not only is Klandermans's specification more inclusive, he differs with Oliver concerning the direction of the effect attached to the third factor - the expectation about others' participation. This difference is explored in detail in the following section.

The Pessimism Hypothesis

The essence of the collective action dilemma is expressed in the concept of the free-rider. Both Oliver and Klandermans suggest that the argument of the free-rider is "If I don't do it, somebody else will." However they diverge in the expression of the attitude of the participant. Oliver hypothesizes that pessimism concerning

others' contributions is a factor in promoting participation. "... [P]eople who do not believe others will provide the collective good are motivated to provide the good themselves or do without" (Oliver, 1984:602). The attitude of the participant is for Oliver "If I don't do it, nobody else will." Explanation of membership in this way presupposes that the individual values the collective good and that s/he believes that participation will have an impact on producing the collective good.

In contrast, Klandermans proposes that pessimism regarding others' participation will decrease participation by lowering the expectation that the collective good can be achieved. "Contrary to Olson's logic, the willingness to participate in collective action, appears to be strengthened by the belief that many others will participate" (Klandermans, 1984:591). These two proposals hypothesize opposite effects of pessimism concerning others' participation on whether or not an individual participates in collective action.

Summary of Hypotheses

The preceding four sections surveyed a variety of theoretical works from the collective action literature.

This section summarizes the hypotheses that have emerged from the above theoretical review.

All of these works surveyed take as given the insight of classic collective action theory, i.e., that selective incentives affect participation. Thus, the following hypotheses include the variables identified in the classic collective action literature. These have been incorporated into recent theories as social and reward motives (Klandermans) or as costs, interests and social ties (Oliver). Hypotheses relating to the role of collective incentives will also be examined.

In addition, Oliver and Klandermans each propose unique extensions of classic collective action theory. Oliver maintains that level of participation must be considered. Klandermans argues that measures of the value of the collective good must be incorporated into the model. In the present work this suggests that perceptions of the instrumentality of the program for achieving the collective good is a factor in determining participation. Both of these extensions are incorporated into the current work.

Moreover, Oliver and Klandermans differ in two other respects. First, Oliver postulates a main effects model while Klandermans's framework involves interaction effects. Second, they differ on the direction of the effect they associate with the pessimism hypothesis.

Following Oliver's mode of analysis, two main effect models are tested. The first examines the relationship of the proposed independent variables with whether an individual is a member or nonmember. The second model uses the same variables to predict active from token members. The hypothesized relationship between the independent variables and membership are as follows:

1. Education and income will be positively associated with membership.

2. Objective interest will be positively related to membership.

3. Pessimism concerning others' participation will be related to membership. Positive association will support Oliver's hypothesis. Negative association will support Klandermans's hypothesis.

4. The expectation that one's own participation will not contribute to the probability of success will be negatively related to participation.

5. The perceived instrumentality of the program for achieving the collective good will be positively associated with membership.

The hypothesized contrasts between the two models are as follows:

6. The effects of education, income and objective interest will be greater between active and token members than between members and nonmembers.

7. The effects of pessimism and perceived instrumentality on active and token members vs. members and nonmembers is examined without predicted direction. None of the

theories suggest that these variables will be more important for one analysis or the other.

In addition to these main effects models, two interaction models are tested. The hypotheses are that:

8. There will be an interaction effect between expectations concerning others' participation and perceived instrumentality of the program.

9. There will be an interaction effect between expectations about the ability of one's own actions to contribute to the probability of success and perceived instrumentality of the program.

Chapter Five operationalizes the concepts involved in the above hypotheses. Chapter Six tests the above hypotheses in the Keephills case.

CHAPTER FIVE

OPERATIONALIZING THE VARIABLES

This chapter describes the measures used to operationalize the variables in the hypotheses developed in Chapter Four. The first section describes indicators of the dependent variable, membership. The second and third section describe measures of the independent variables. The second section focuses upon measures of selective incentives. These include the variables identified in classic collection action theory and incorporated into more recent formulations as social and reward motives (Klandermans) or as costs, interests and social ties (Oliver). The third section focuses upon measures of collective incentives. It is these measures, drawn from the more recent theoretical formulations of collective action theory, which tap the theoretical core of the present analysis.

Membership: The Dependent Variable

As noted in Chapter Four, Oliver (1984) has suggested the importance of distinguishing between various levels of

membership. Following Oliver's (1984:606) mode of analysis, a distinction is made first between members and nonmembers. Then, given membership, a distinction is made between active and token members.

In order to measure participation in the community organization, respondents were asked: "Are you a member of COKE?" Twenty nine (30%) of the ninety six respondents indicated that they were members of COKE. For analyses, membership was dummy coded with members coded as 1 and nonmembers coded as 0.

Looking only at members of COKE, active participation was assigned on the basis of whether an individual had worked for COKE. This was done based on the question: "Have you worked with or for COKE?" Seventeen (59%) of the twenty nine members of COKE had worked with or for COKE. These seventeen members were classified as active members and the remaining twelve were classified as token members. Dummy coding was again used with active members coded as 1 and token members coded as 0. Information from another question clarifies the meaning of being an "active" member. Individuals who had worked for COKE were asked to specify the level and type of involvement. Of the seventeen active members, fifteen had held executive positions. The large proportion of active members who had served in leadership positions within the organization substantiates the

contention that active membership involved a significantly greater commitment of time and energy than token membership.

As noted, the present analysis draws a distinction between predicting membership and, given membership, predicting active involvement. Summary statistics of the independent variables for each of these models are given in Table 5.1. The next section operationalizes measures relating to selective incentives, i.e., education, income, affected by the project. The following section operationalizes measures of collective incentives, i.e., pessimism, powerlessness, decision making, information input, conflict resolution.

Variables Measuring Selective Incentives

Selective incentives are those variables identified by Oliver as costs, benefits and social ties or by Klandermans as the reward and social motives. In the Keephills data, measures are available for three of these variables: education, income and objective interest. In this analysis, education is coded in terms of years of school completed. Income is coded in categories reflecting five thousand dollar increments.

TABLE 5.1: SUMMARY STATISTICS MEASURING THE DISTRIBUTION OF INDEPENDENT VARIABLES AMONG THE SAMPLE AND AMONG MEMBERS OF COKE.

VARIABLE	RANGE MIN	RANGE MAX	MEAN	STAND. DEV.	SKEW.
Education					
Total sample	3	17	11.07	3.47	.231
Members only	3	17	10.67	3.25	.250
Income					
Total sample	1	17	7.67	5.17	.804
Members only	2	17	8.12	5.71	.572
Pessimism					
Total sample	1	5	3.43	1.03	-.513
Members only	1	5	3.29	1.27	-.162
Powerlessness					
Total sample	1	5	3.09	1.19	-.117
Members only	1	4	2.96	1.12	-.277
Decision Making					
Total sample	6	10	8.61	1.14	-.302
Members only	6	10	8.75	1.07	-.531
Information Input					
Total sample	4	10	7.42	1.27	-.410
Members only	4	10	7.20	1.38	-.263
Conflict Resolution					
Total sample	1	5	3.57	1.21	-.611
Members only	1	5	3.75	1.15	-.675

CODES:
Min = Minimum
Max = Maximum
Stand. Dev. = Standard Deviation
Skew. = Skewness

Objective interest is measured by whether or not an individual was affected by the mine plan. Responses were effect coded with affected individuals coded as 1 and others coded as -1. Fifty five (61%) of the ninety respondents indicated that they were affected by the mine plan. Among members of COKE, twenty three (85%) of the twenty seven respondents indicated that they were affected.

Variables Measuring Collective Incentives

Collective incentives include those variables identified by Oliver as expectations about the behavior of others and by Klandermans as the expectancies and values associated with the collective motive. Hypotheses involving these variables form the core of both Oliver's and Klandermans's extensions of classic collective action theory. The Keephills data provides measures of both expectations and values. Summary statistics of these variables are presented in Table 5.1. The next three sections outline the specific procedures used to operationalize these variables. The first two sections operationalize measures of expectations: expectations about the participation of others (pessimism) and expectations about the efficacy of one's own participation

(powerlessness). The third section operationalizes a measure related to the value of the collective good: the instrumentality of the public participation program.

Pessimism

Following Oliver's and Klandermans's argument concerning people's perceptions of others' behavior, it is expected that membership in COKE could be predicted by knowing the respondents expectations concerning the behavior of others. As a measure of these expectations, responses to the following Likert question were used. "Very few local people actually participate in public participation programmes." Responses among the entire sample and among members only were bimodally distributed.

Since Oliver and Klandermans hypothesize opposite directions for the relationship between expectations about the contribution of others and membership, it is important to examine their measures in some detail. Oliver used indicators for pessimism that were fairly generalized - i.e. not programme specific. She used the following measures to construct an index.

> Respondents were asked to indicate on a five-point scale from "certainly will" to "certainly won't" their assessment of "how ready you think your neighbors would be to help each other in various situations." Two were

> collective: "If the principal of the local school was doing a very poor job, how much could you count on your neighbors for help in doing something about it?" and "If the city were to announce a project that would hurt this neighborhood, and some of the neighbors tried to organize a protest, how would the others feel about joining?" (Oliver, 1984:604-605).

In contrast, Klandermans (1984:590) utilized measures which were program specific.

> The expectation about the number of participants was established as follows: "In your estimate, how many people at your plant will participate in moderate/militant action in connection with the negotiations?" (very few, not so many, quite a few, very many).

Thus, Oliver's and Klandermans's operationalizations differ in one important respect. Oliver's questions pertain to hypothetical situations while Klandermans's question pertains to to a factual situation. The measure used in the present analysis taps the same theoretical concept utilized by both Oliver and Klandermans. The operationalization of the concept within the present study, however, more closely approximates that of Klandermans than that of Oliver. In the present analysis, a question specifically pertaining to public participation programs was used. In light of the fact that this was asked in the context of a social impact analysis where the public participation program was paramount, it can be argued that

people responded to the question specifically in light of this program. Given Klandermans's argument that individuals assess others' participation in terms of the likelihood that the collective good can be achieved, the face validity of using a program specific measure is greater than using a hypothetical situation.

Powerlessness

Following Klandermans, Chapter Four hypothesized that expectations about the efficacy of one's own participation will influence the decision to become a member. According to Klandermans, an individual is more likely to become a member if s/he believes that his/her participation will affect the probability of achieving the collective good. As a measure of these expectations, responses to the following Likert question were used: "Many times I feel I have little influence over things that happen to me." The distribution of scores among both the total sample and the members only group was bimodally distributed. Responses were coded so that high scores indicate feelings of powerlessness. This measure is used as an indicator of the expectancy that one's own participation will not contribute to the probability of achieving the collective good. This usage is predicated upon a logical link that cannot be

empirically assessed; i.e., that if the person feels they have little influence over things that happen to them, then they will not expect their participation in the program to substantially alter the outcome of events.

The measure used in the present study is drawn from a traditional alienation scale. Although the Keephills data provides a variety of "powerlessness" measures the decision was made to use the above measure as a single indicator. Most of the powerlessness measures in the Keephills data tap elements unrelated to Klandermans's theoretical concerns. For example, in the Likert item "The average citizen in this country can't have much effect on politics", the reference to a generalized other, "the average citizen", does not express the theoretical concept of personal powerlessness (Zucher and Snow, 1981:451) that Klandermans is proposing.

Even with the decision to limit the powerlessness measure to the single indicator most closely akin to Klandermans's theoretical concerns, it should be noted that the present operationalization differs substantially from the one he uses. Klandermans utilizes a program specific measure of the expectation that one's own participation will have an impact. The present study utilizes a more generalized measure of powerlessness.

Instrumentality of the Program.

As discussed in Chapter Four, Klandermans argues that the value of the collective good is itself a product of the value of the social change advocated and the instrumentality of the program for the social change advocated. In the present analysis, the social change advocated is socially appropriate and responsive development. Although the Keephills data does not include a direct measure of the value the individual attaches to the goal of socially appropriate development, the data does include a variety of measures related to the instrumentality of public participation for accomplishing this goal. If the value of minimizing disruption to the Keephills community is taken as given and, hence, assigned a value of 1 for each individual, then, according to Klandermans's theoretical framework, measures of the instrumentality of the public participation program become effective substitutes for measures of the value of the program. As shown in Chapter Two, however, public participation programs can play a variety of roles in attempting to achieve the goal of socially responsive development. The perceived instrumentality of the program for achieving the collective good must take into account the multiplicity of roles of public participation. This

section delineates these roles through a theoretical and empirical analysis of a variety of attitude items that measure individual perceptions of the instrumentality of public participation for achieving the collective good.

Selection of Items. The Likert items relating to public participation are shown in Table 5.2. Based upon the examination of participation in Chapter 2, it is expected that dimensions relating to decision making, conflict resolution and information input will emerge from an examination of the items.

TABLE 5.2: PERCENTAGE DISTRIBUTIONS FOR LIKERT ITEMS MEASURING ATTITUDES TOWARD PUBLIC PARTICIPATION

1. Involving local individuals and groups in decision making is better than government and industry officials making decisions for local individuals.

SA	A	U	D	SD	TOTAL
40.4%	46.8%	8.5%	3.2%	1.1%	100.0% (N=95)

2. Individuals and groups should be more involved in policy decisions rather than leaving it to elected officials.

SA	A	U	D	SD	TOTAL
41.1%	50.5%	6.3%	2.1%	0.0%	100.0% (N=95)

3. Public participation is useless for resolving conflicts between industry and local communities.

SA	A	U	D	SD	TOTAL
6.4%	14.9%	14.9%	37.2%	26.6%	100.0% (N=94)

4. Public Participation can help in identifying the concerns and issues related to large-scale resource development.

SA	A	U	D	SD	TOTAL
32.6%	60.0%	4.2%	2.1%	1.1%	100.0% (N=95)

(Table 5.2 continued on next page)

TABLE 5.2: (continued)

5. Very few local people actually participate in public participation programmes.

SA	A	U	D	SD	TOTAL
8.5%	55.3%	9.6%	22.3%	4.3%	100.0% (N=94)

6. Resource development decisions are better left to government and industry.

SA	A	U	D	SD	TOTAL
2.1%	15.8%	16.8%	46.3%	18.9%	100.0% (N=95)

7. Local people who participate in public participation programmes are just out for what they can get.

SA	A	U	D	SD	TOTAL
4.2%	8.4%	10.5%	45.3%	31.6%	100.0% (N=95)

8. Public participation programmes can provide essential information for the assessment of impacts of large-scale resource developments on the total human environments.

SA	A	U	D	SD	TOTAL
21.1%	68.4%	8.4%	1.1%	1.1%	100.0% (N=95)

(Table 5.2 continued on next page)

TABLE 5.2: (continued)

9. While public participation programmes may be useful, they cannot identify project planning alternatives.

SA	A	U	D	SD	TOTAL
3.2%	43.2%	16.8%	33.7%	3.2%	100.0% (N=95)

10. Public participation programmes can help identify and evaluate potential mitigation and/or enhancement measures which might be incorporated in project design and/or management.

SA	A	U	D	SD	TOTAL
11.1%	62.2%	23.3%	3.3%	0.0%	100.0% (N=90)

11. Public participation programmes can analyze and evaluate direct, indirect, and cumulative impacts of large-scale resource projects.

SA	A	U	D	SD	TOTAL
9.9%	58.2%	20.9%	11.0%	0.0%	100.0% (N=91)

12. Most rural communities have local residents and organizations that have special expertise that might be utilized in planning decisions for large-scale resource developments.

SA	A	U	D	SD	TOTAL
7.5%	45.2%	18.3%	22.6%	6.5%	100.0% (N=93)

(Table 5.2 continued on next page)

TABLE 5.2: (continued)

13. People and groups that put in time for a public participation program in their local community should be paid over and above expenses by the developer.

SA	A	U	D	SD	TOTAL
9.6%	53.2%	13.2%	20.2%	3.2%	100.0% (N=94)

14. People and groups that put in time for a public participation program in their local community should be paid over and above expenses by government.

SA	A	U	D	SD	TOTAL
7.8%	34.4%	14.4%	40.0%	3.3%	100.0% (N=90)

15. Experts are better able to understand and forecast likely impacts of a development than are local residents.

SA	A	U	D	SD	TOTAL
6.4%	35.1%	13.8%	39.4%	5.3%	100.0% (N=94)

An examination of the items reveals that some of the items deal with issues unrelated to the dimensions of public participation programmes. Specifically, three of the questions (5,7,12) refer to characteristics of the participants while two others (13,14) refer to the issue of paying participants. In addition, one of the items (item

9) is a double-barrelled question. These items have therefore been dropped from analysis. The remaining items possess face validity as indicators of attitudes toward the roles of public participation programs and were retained for further analysis.

Determination of Dimensionality. Common factor analysis, i.e., principal axis factor analysis with iterations, was used to determine the empirical dimensions of the remaining indicators. Factors with eigenvalues of 1.0 or more were retained for rotation. Factors were orthogonally rotated using Varimax rotation. Table 5.3 presents the results of this analysis. For clarity, only values over 0.20000 have been reported.

TABLE 5.3: ROTATED FACTOR MATRICES OF ITEMS MEASURING ATTITUDES TOWARD PUBLIC PARTICIPATION.

ITEMS	FACTOR 1	FACTOR 2	FACTOR 3
1.			0.64859
2.			0.69435
3.		0.78310	
4.		0.57426	
6.		0.37046	0.3762
8.	0.35916		
10.	0.98493		
11.	0.61863		
15.		0.45526	
Eigenvalue	2.43084	0.99328	0.70871
Percent of Variance	58.5%	24.0%	17.1%

1. Involving local individuals and groups in decision making is better than government and industry officials making decisions for local individuals.
2. Individuals and groups should be more involved in policy decisions rather than leaving it to elected officials.
3. Public participation is useless for resolving conflicts between industry and local communities.
4. Public Participation can help in identifying the concerns and issues related to large-scale resource development.
6. Resource development decisions are better left to government and industry.
8. Public participation programmes can provide essential information for the assessment of impacts of large-scale resource developments on the total human environments.
10. Public participation programmes can help identify and evaluate potential mitigation and/or enhancement measures which might be incorporated in project design and/or management.
11. Public participation programmes can analyze and evaluate direct, indirect and cumulative impacts of large-scale resource projects.
15. Experts are better able to understand and forecast likely impacts of a development than are local residents.

The analysis identified three distinct dimensions. Two of these dimensions clearly correspond to dimensions identified as important by the theoretical analysis in Chapter Two. The third is problematic.

Factor 1 contains items related to information input, e.g., providing information, identifying and evaluating impacts and mitigation measures. Although question 8 falls below a value of .4 (a "rule of thumb" cut off point for inclusion of factors), it loads on only one factor. Since it is theoretically consistent with the other two items, it will be retained for further analysis.

Factor 3 clearly identifies two items dealing with decision making. In addition, question 6 which deals with resource development decisions loads marginally on this factor and on factor 2. As it is theoretically consistent with items 1 and 2 as a decision making item, it will be retained for further analysis.

Factor 2 fails to make sense as a single dimension. Although we expected a factor related to conflict resolution, only one item (item 3) actually measures attitudes concerning conflict resolution. It loads highly on factor 2. In addition, three seemingly unrelated items load on this factor. Item 15 dealing with understanding and forecasting impacts would be expected to load on factor 1. This item does however, emphasize a contrast between

experts and local residents and as such is dealing with characteristics of the participants rather than dimensions of participation. Item 4 which deals with identification of concerns would be expected to load on factor 1 and item 6 dealing with decisions would be expected to load on factor 3. Due to these inconsistencies, factor 2 will not be used for further analysis. However, item 3, concerning conflict resolution will be retained as a single measure of this dimension.

Construction of Scales. Based on the results of the factor analysis, unit weighted scales were constructed for the decision making and the information input factors. The decision making scale was constructed by adding Item 1, Item 2 and Item 6. The information input scale was constructed by adding Item 8, Item 10 and Item 11. These items were selected because there exists both theoretical and empirical evidence that they measure significant and distinct dimensions.

Determination of Reliability. Scales must be reliable as well as valid. Tables 5.4 and 5.5 display the results of a reliability analysis on the decision making and information input scales respectively.

TABLE 5.4: RELIABILITY ANALYSIS FOR DECISION MAKING SCALE.

CORRELATION MATRIX (N=89)

	ITEM 1	ITEM 2	ITEM 3	MEAN	SD
ITEM 1	1.00000			4.2697	0.7502
ITEM 2	0.46086	1.00000		4.3034	0.6810
ITEM 6	0.34540	0.30126	1.00000	3.6404	1.0362

RELIABILITY COEFFICIENTS

	ALPHA IF ITEM DELETED	ALPHA
ITEM 1	0.43326	0.60837
ITEM 2	0.49413	
ITEM 3	0.62892	

TABLE 5.5: RELIABILITY ANALYSIS FOR INFORMATION INPUT SCALE.

CORRELATION MATRIX (N=89)

	ITEM 1	ITEM 2	ITEM 3	MEAN	SD
ITEM 8	1.00000			4.0786	0.6610
ITEM 10	0.41787	1.00000		3.8090	0.6721
ITEM 11	0.21959	0.63100	1.00000	3.6629	0.8111

RELIABILITY COEFFICIENTS

	ALPHA IF ITEM DELETED	ALPHA
ITEM 1	0.76545	0.68353
ITEM 2	0.35400	
ITEM 3	0.58938	

The results of the reliability analysis are congruent with the results of the factor analysis; the items which were marginal in the factor analysis remain weak in the reliability analysis. In the decision making scale, dropping Item 6, which loaded marginally on factor 3 (.3762), increases the reliability from .60837 to .62892. Although this is a small increase, Item 6 was dropped from the scale.

In the information input scale, dropping Item 8, which loaded marginally on factor 1 (.3592), results in a substantial increase in the alpha level from .68353 to .76545. Item 8 was also dropped from the scale.

Summary of Results. To summarize, a combined theoretical and empirical analysis of the items described in Table 5.2 reveals three distinct dimensions: attitudes toward the efficacy of public participation as a means of resolving conflicts, attitudes toward the importance of involving the public in decision making and attitudes toward the efficacy of public participation as means of inputing information into the decision making process.

The first dimension will be measured by a single indicator. High values indicate a positive attitude toward the usefulness of public participation in resolving conflicts. The second two dimensions will be measured by

two item scales. High values indicate a positive attitude toward a) the usefulness of public participation programs in decision making and b) the role of public input into the decision making process respectively. Summary statistics for these measures are presented in Table 5.1.

These dimensions represent three roles that public participation programs may play in achieving the collective good. Thus, three measures of instrumentality are proposed. Individual scores on each of these dimensions are used as indicators of the perceived instrumentality of the public particiaption program for achieving the collective good.

CHAPTER SIX

DATA ANALYSIS

The four models outlined in Chapter Four and operationalized in Chapter Five contain both categorical and interval independent variables and a categorical dependent variable. There exist two major statistical techniques designed to handle this specific mix of variables: discriminant function analysis and logistic regression. Discriminant function analysis, as the name suggests, was designed for the purpose of classifying variables into categories, i.e., for discriminating between them. The lack of legitimately interpretable effect parameters, however, is a major drawback of the procedure. In contrast, logistic regression can be understood as a technique which generates a log-linear model for models incorporating interval level independent variables. Log linear models have largely replaced earlier methods of contingency table analysis precisely because they yield interpretable effect parameters. In addition, logistic regression can be fruitfully applied to prediction problems. After a comparison of the two techniques, Fienberg (1980:109) concludes:

> The superiority of logistic regression over discriminant analysis as a classification procedure in this example, slight though it is, may surprise some readers. What is more important is to note that, if discriminant analysis is used for a prediction problem involving a binary response variable, predictions for small and large probabilities may be far off the mark.

As a consequence of these considerations, logistic regression was chosen for the present analysis.

The results of the logistic regression analyses are discussed for each of the four models: the main effects model predicting members from nonmembers (Model 1a); the main effects model predicting active from token members (Model 2a); the interaction models predicting members from nonmembers (Model 1b and 1c); the interaction models predicting active from token members (Model 2b and 2c). Fit of the model and the effects of the parameters will be discussed.

Fit of the Models

The aim in logistic regression is to achieve a nonsignificant chi-square. A nonsignificant chi-square indicates that the model is a good fit, i.e., "that the difference between the expected distribution of cases using

this model and the actual distribution of cases is so slight as to be non-significant" (Walsh, 1987:181). In this analysis, all the Chi-squares were nonsignificant. This reflects the small sample size as much as it reflects how well the models fit the data. To compare the prediction value of additional variables the fit of each model can be expressed in the form of a proportionate reduction in error measure. In logistic regression, the baseline chi-square is a chi-square based on predicting the grand mean. It represents a total error in prediction. The difference between this total error and the error associated with each model can be expressed as a proportion of the total chi-square. This proportion expresses the proportion of chi-square that is explained by the model. In examining this reduction in error, a significant chi-square is sought. Tables 6.1 and 6.2 present in hierarchical form the chi-square values for each step in the estimation of the main effects and the interaction models.

TABLE 6.1: GOODNESS OF FIT MEASURES FOR LOGISTIC REGRESSION MODELS PREDICTING MEMBERS VS. NONMEMBERS (MODEL 1).

MODEL	MAXIMUM LIKELIHOOD CHI-SQUARE	D.F.	PRE
Baseline (no predictors)	87.42	66	
+ Education	86.89	65	
+ Income	86.30	64	
+ Affected	79.01	63	
+ Pessimism	78.90	62	
+ Powerlessness	77.91	61	
Instrumentality			
+ Decision Making	76.70	60	
+ Information Input	76.22	59	
1a + Conflict Resolution	75.00	58	.1421
Interactions			
1b + Pess x Instrument.	72.29	55	.1731
1c + Pless x Instrument.	68.67	52	.2145

CODES:
Pess = Pessimism
Pless = Powerlessness
Instrument = All three measures of Instrumentality, i.e., Decision Making, Information Input, Conflict Resolution
PRE = Proportional Reduction in Chi-square Error

Note: Models are hierarchically ordered. Therefore, each model includes all the variables above it as well as the specifically identified variable. Substantively important models are identified by 1a (main effects) and 1b,1c (interactions).

TABLE 6.2: GOODNESS OF FIT MEASURES FOR LOGISTIC REGRESSION MODELS PREDICTING ACTIVE VS. TOKEN MEMBERS (MODEL 2).

MODEL	MAXIMUM LIKELIHOOD CHI-SQUARE	D.F.	PRE
Baseline (no predictors)	32.60	23	
+ Education	30.74	22	
+ Income	29.00	21	
+ Affected	27.29	20	
+ Pessimism	26.51	19	
+ Powerlessness	25.77	18	
Instrumentality			
+ Decision Making	23.03	17	
+ Information Input	22.86	16	
2a + Conflict Resolution	22.06	15	.3233
Interactions			
2b + Pess x Instrument.	15.88	12	.5129
2c + Pless x Instrument.	N.A.	N.A.	

CODES:
Pess = Pessimism
Pless = Powerlessness
Instrument = All three measures of Instrumentality, i.e., Decision Making, Information Input, Conflict Resolution
N.A. = Information not available due to technical constraints; convergence not achieved.
PRE = Proportionate Reduction in Chi-Square Error

Note: Models are hierarchically ordered. Therefore, each model includes all the variables above it as well as the specifically identified variable. Substantively important models are identified by 2a (main effects) and 2b (interaction).

In examining the fit of the models, two contrasts can be made. The first contrast is between main effect models

and interaction models. Klandermans proposed that a multiplicative relationship exists between pessimism concerning others' participation and perceptions of the instrumentality of the program for achieving the public good. He also proposed a multiplicative relationship between feelings of powerlessness and instrumentality of the program. These are statistically expressed as interactions. A significantly better fit of the interaction models as compared to the main effects models will lend support to Klandermans proposal. The second contrast to be made in the examination of fit of the models, is between the members vs. nonmembers model (Model 1) and the active vs. token members model (Model 2).

Contrasting Main Effects and Interaction Models

Considering the members vs. nonmembers models, the main effects model (Model 1a) explains 14% of chi-square. The introduction of interaction terms (Model 1and 1c) adds an additional 7% of variance explained. Three percent of this is due to the addition of the pessimism interaction terms (Model 1b) and 4% is due to the addition of the powerlessness interaction terms (Model 1c). Considering the active vs. token members models, the main effects model (Model 2a) explains 33% of chi-square. The

introduction of pessimism interactions (Model 2b) increases the chi-square explained to 51%. Estimates for the powerlessness interaction terms (Model 2c) were unavailable due to technical limitations.(1)

In the members vs. nonmembers model (Model 1), the change in chi-square due to the pessimism interaction terms is 2.71 (3%) with 3 degrees of freedom. This reduction in error is nonsignificant and does not support the choice of an interaction model over a main effects model. The increase in chi-square explained due to the pessimism interaction terms is more substantial in the token vs. active members model. A change in chi-square of 6.18 (18%) with 3 degrees of freedom is significant at the .10 level. Klandermans's proposed interaction is somewhat supported in the active vs. token model.

Contrasting The Membership Model and the Activism Model

A comparison of the chi-squares explained by each of the two models shows that the set of independent variables

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(1) Logistic regression, unlike ordinary regression, fits models on the basis of an iterative, maximum-likelihood procedure. In order to obtain results, the procedure must converge upon a solution, i.e. the repeated iterations of the fitting procedure must move toward a single set of coefficients. Model 2c did not converge, probably due to the large number of independent variables relative to the number of cases.

explain a greater percentage of chi-square in Model 2 (active vs. token members) than in Model 1 (members vs. nonmembers). Considering the main effects only, Model 2 explains 32% of the chi-square while Model 1 explains 14% of the chi-square. When pessimism interaction terms are added, Model 2 explains 51% of the chi-square while Model 1 explains 17% of the chi-square. The addition of powerlessness interaction terms in Model 1 increased the chi-square explained to 21%.

A more intuitive sense of the fit of the model can be gained from examining the percentage of cases correctly classified by each model. Tables 6.3 and 6.4 present these results.

TABLE 6.3: PROPORTION OF SUCCESSFUL CLASSIFICATIONS ASSOCIATED WITH LOGISTIC REGRESSION MODELS PREDICTING MEMBERS VS. NONMEMBERS (MODEL 1).

	PERCENT CORRECTLY CLASSIFIED		
MODEL	MEMBERS	NON MEMBERS	TOTAL
Education	4.17	100.00	65.67
+ Income	25.00	88.37	65.67
+ Affected	79.17	60.47	67.16
+ Pessimism	79.17	67.44	71.64
+ Powerlessness	83.33	60.47	68.66
Instrumentality			
+ Decision Making	54.77	81.40	71.64
+ Information Input	37.50	90.70	71.64
1a + Conflict Resolution	58.33	81.40	73.13
Interactions			
1b + Pess x Instrument.	62.50	83.72	76.12
1c + Pless x Instrument.	41.67	90.70	73.13

CODES:
Pess = Pessimism
Pless = Powerlessness
Instrument = All three measures of Instrumentality, i.e., Decision Making, Information Input, Conflict Resolution

Note: Models are hierarchically ordered: substantively important models are identified by 1a (main effects) and 1b,1c (interactions).

TABLE 6.4: PROPORTION OF SUCCESSFUL CLASSIFICATIONS ASSOCIATED WITH LOGESTIC REGRESSION MODELS PREDICTING ACTIVE VS. TOKEN MEMBERS (MODEL 2).

	PERCENT CORRECTLY CLASSIFIED		
MODEL	ACTIVE MEMBERS	TOKEN MEMBERS	TOTAL
Education	100.00	35.71	62.50
+ Income	50.00	85.71	70.83
+ Affected	100.00	42.80	66.67
+ Pessimism	50.00	92.86	75.00
+ Powerlessness	40.00	100.00	75.00
Instrumentality			
+ Decision Making	60.00	92.86	79.17
+ Information Input	50.00	100.00	79.17
2a + Conflict Resolution	40.00	100.00	75.00
Interactions			
2b + Pess x Instrument.	90.00	85.71	87.50
2c + Pless x Instrument.	N.A.	N.A.	N.A.

CODES:
Pess = Pessimism
Pless = Powerlessness
Instrument = All three measures of Instrumentality, i.e., Decision Making, Information Input, Conflict Resolution
N.A.: Information not available due to technical constraints; convergence not achieved.

Note: Models are hierarchically ordered; substantively important models are identified by 2a (main effects) and 2b (interaction).

In the members vs. nonmembers model, using the main effects (Model 1a) to predict category placement results in 73% of the total cases correctly classified. This classification was more successful for nonmembers (81%) than for members (58%). As expected by the examination of the change in chi-square, the addition of the pessimism

interaction terms increases successful classification only slightly (76% compared to 73%).

In the active vs. token members model, using the main effects (Model 2a) to predict category placement results in 75% of the cases correctly classified. This classification was more successful for token members (100%) than for active members (40%). To be expected from the examination of the changes in chi-square, the increase of successful classifications due to the addition of the pessimism interaction terms is greater in this model (Model 2) than in the members vs. nonmembers model (Model 1). Eighty eight percent of total cases are correctly classified. Active members are correctly classified in 90% of the cases and token members are correctly classified in 86% of the cases. The variations in patterns of prediction illustrated in Tables 6.3 and 6.4, partially reflects the fact that at each step in the estimation of the models, different effect coefficients are assigned. Examination of the effect coefficients is carried out in the next section.

The Effect Coefficients

Regression coefficients in logistic regression are expressions of odds ratios given as log odds.

"Coefficients estimate how changes in the independent variables multiply the odds of falling into category 1 rather than category 2, holding other variables constant" (Swafford, 1980:673). When the independent variables are continuous, signs indicate the direction of the relationship. Similarly, for dichotomous independent variables, a positive relationship indicates that the category coded 1 is more likely than the category coded 0 (Walsh, 1987:181). The regression coefficients for each of the main effects models are shown in Table 6.5. As the interaction models do not explain a significant increase in chi-square, only the main effects models are examined.

The intuitive sense of the effects of the independent variables may be difficult to grasp due to their expression in log odds. Table 6.6 expresses some of the effects in terms of the odds of being a member (Model 1) and the odds of being an active member (Model 2), holding other variables constant. To calculate these odds, mean values were assigned to the continuous variables (education, income and the 3 measures of instrumentality). Being affected by the mine plan, as a dichotomous variable, was assigned either a +1 (affected) or a -1 (not affected). The measures for pessimism and powerlessness were both bimodal. Therefore, modal values of 4 (high) and 2 (low) were chosen for examining the odds.

bimodal. Therefore, modal values of 4 (high) and 2 (low) were chosen for examining the odds.

TABLE 6.5: EFFECT PARAMETERS FOR MAIN EFFECT LOGISTIC REGRESSION MODELS PREDICTING MEMBERS VS. NONMEMBERS AND ACTIVE VS. TOKEN MEMBERS.

	DEPENDENT VARIABLE	
	(MODEL 1)	(MODEL 2)
INDEPENDENT VARIABLES	MEMBERS VS NONMEMBERS	ACTIVE VS TOKEN
Education	- .0859	.1772
Income	- .0216	.2293
Affected	.8009	- .5725
Pessimism	- .0551	- .7672
Powerlessness	- .2578	.2624
Instrumentality		
Decision Making	.3641	- 1.481
Information Input	- .2044	.4036
Conflict Resolution	.3009	.5273
Intercept	- 1.506	5.793

Note: All coefficients are maximum-likelihood estimates.

TABLE 6.6: ODDS FOR MEMBERSHIP AND, AMONG MEMBERS, ODDS FOR ACTIVE INVOLVEMENT FOR SELECTED LEVELS OF AFFECT, PESSIMISM AND POWERLESSNESS.

SELECTED VALUES FOR INDEPENDENT VARIABLES			DEPENDENT VARIABLE	
AFFECT	PLESS	PESS	MEMBERSHIP	ACTIVE MEMBERSHIP
Yes	Low	Low	.968 : 1	4.192 : 1
Yes	Low	Hi	.867 : 1	.903 : 1
Yes	Hi	Low	.578 : 1	7.085 : 1
Yes	Hi	Hi	.518 : 1	1.527 : 1
No	Low	Low	.195 : 1	13.176 : 1
No	Low	Hi	.174 : 1	2.840 : 1
No	Hi	Low	.116 : 1	22.264 : 1
No	Hi	Hi	.104 : 1	4.799 : 1

CODES:
Affect: Yes = affected by the mine plan; no = not affected
Pless (Powerlessness): Hi = 4; Low = 2
Pess (Pessimism): Hi = 4; Low = 2

Note: Odds are based upon coefficients from the main effect models predicting membership and level of membership respectively. Variables measuring socioeconomic status and instrumentality of the program are held constant throughout this table. For purposes of calculating odds, the following values were given to those variables: Education (12); Income (7); Decision Making scale (8); Information Input scale (8) and Conflict Resolution (4).

The Main Effects Model: Members and Nonmembers

The main effects model contains all proposed independent variables: education, income, affected by the mine plan, pessimism, powerlessness and the three measures of the instrumentality of the program. The first hypothesis proposed that education and income would be positively associated with membership. In this analysis, they are both negatively associated (-.0859, -.0216), although minimally, with membership. The conflicting results could be interpreted in two manners; either as reflecting on public participation programs as a special type of voluntary organization or as reflecting on this case study in particular. There is no theoretical reason to support the proposal that the effects of education and income in public participation programs would be different than their effects in other voluntary associations. It is suggested that these results reflect on the social structure of a small rural community and the perceived costs of membership in the public participation program. Theoretically, education and income represent factors which reduce the costs of participation. Within a small community with strong social ties, the psychological costs of becoming a member may be different than in the possibly diffused membership of a social movement or other forms of

voluntary associations. Education then, may not be a factor in reducing psychological costs. An integration of the community literature into the collective action literature may be useful in further reformulating costs and benefits of collective action in the context of a small community.

The second hypothesis proposed that objective interest would have a positive effect on membership. The results show that those who are affected by the mine plan are more likely to be members than those who are not affected (.8010) As a measure of objective interest (Oliver), this supports the proposal that objective interests will influence participation. The effect of being affected by the mine plan is reasonably strong. Table 6.6 presents some of the odds of being a member given that the individual is affected by the mine plan. For example, if an individual is affected by the mine plan, the odds of being a member are .968:1 given low values on pessimism and powerlessness. In contrast, if an individual is not affected by the mine plan, the odds of being a member are .195:1 given low values on powerlessness and pessimism.

The third hypothesis suggests that pessimism concerning others' participation and membership will be associated. In this analysis, pessimism is negatively associated with membership (-.0551) lending support to

Klandermans's proposal that expectations regarding others' participation will act as a self-fulfilling prophecy. Those who believe others will not participate are less likely to be members. Theoretically, this is due to lowered expectations that the collective good could be achieved. The size of this effect however, is very small. Comparing the effect of scoring a "4" (high) on the pessimism scale to scoring a "2" (low), being more pessimistic decreases the odds of being a member from .867:1 to .968:1 given that the individual is affected by th mine plan and scores low on powerlessness (Table 6.6).

Also influencing expectations that the collective good can be achieved, is the expectation that one's own participation will contribute to achieving the collective good (hypothesis four). The effect of powerlessness on membership is negative (-.2578), supporting Klandermans's hypothesis. Those who feel that they have little influence over things that happen to them ie., powerless, are less likely to become members. The effect of scoring "4" (high) on the powerlessness scale as compared to scoring "2" (low), is to decrease the odds of being a member from .578:1 to .968:1 given that the individual is affected by the mine plan and scores low on pessimism (Table 6.6).

The fifth hypothesis is that the perceived instrumentality of the program for achieving the collective

good will be positively associated with membership. Three measures of instrumentality were used reflecting three roles that a public participation program may play. The attitudes toward the efficacy of public participation for decision making (.3642) and for resolving conflicts (.3009) are positively associated with membership. These are in support of Klandermans's proposal that individuals are more likely to become participants if they believe the collective good can be achieved in this manner. Those who believe participation programs are instrumental in mitigating impacts through decision making and conflict resolution are more likely to become members. The negative association between an input role for participation and membership is unexpected. Perhaps some insight can be gained from the theoretical delineation of participation in terms of decision making power (Chapter Two). Arnstein (1971) referred to the input level of participation as "participating in participation". The suggestion is that at the input level participants are not accorded power in the decision making process. Therefore, the instrumentality of input alone for mitigating impacts is questionable. The negative value associated with the input variable may be reflecting the evaluation of having only an input role for public participation.

The Main Effects Model: Active and Token Members

Following Oliver's (1984) suggestion that a distinction must be made between levels of membership, it was hypothesized that the effects of the independent variables would be different in comparing active and token members than in comparing members and nonmembers. As expected, there is a difference in the effects of education, income and objective interest between the two models (hypothesis 6). Unpredicted however, is the change in direction of these effects. Contrasting active and token members, the effects of education and income are positive. This is consistent with classic collective action theory. The costs associated with active membership are much higher than the costs associated with token membership. Education and income are hypothesized to increase the probability of becoming an active member by lowering the costs of active membership. Therefore, education and income would have greater effects between active and token members than between members and nonmembers.

In considering objective interest, the effect of being affected by the mine plan is to increase the probability that an individual will become a member (.8010 in Model 1). However, given that an individual is a member, the effect

of being affected by the mine plan is to decrease the probability of becoming an active member (-.5726 in Model 2). Given that an individual is a member of COKE, s/he is more likely to become an active member if s/he is not affected by the mine plan. A possible explanation for this may be found within the context of public participation programs and specifically within the Keephills case. Initially there were fears that "COKE would be co-opted by TransAlta" (HERA, 1987:40). The fact that an individual was not affected by the mine plan could increase the probability of being an active member by reducing the fear of being co-opted. Interpretation of this effect must be cautioned by consideration of the sample size. Given that in this analysis, only four members were not affected by the mine plan, the coefficient reflects the fact that all four of these individuals became active members.

Contrary to Oliver's hypothesis and in support of Klandermans, the effect of being pessimistic about others' participation is to decrease the probability of becoming an active member (-.7672). Consistent with Model 1, pessimism appears to act as a self-fulfilling prophecy. Those who are more pessimistic are less likely to become active members. The strength of this effect is much greater in the active and token members model (-.7672) than in the members and nonmembers model (-.0551). For example, the

odds of being a member (Model 1) given a low score on pessimism are .195:1 given that the individual is not affected by the mine plan and scores low on powerlessness. In contrast, the odds of being an active member (Model 2) given a low score on pessimism are 13.176:1 given the same conditions.

The size of the effect of powerlessness in both models is consistent; however, the direction of the effect of powerlessness in the active members model is positive. This is not only unexpected but is unexplainable within the theoretical framework. Powerlessness has been used as a measure of expectations that an individual's own contribution may have an effect on achieving the collective good. However, early work on movement participation proposed personal powerlessness as a factor in making an individual susceptible to participation (Zucher and Snow, 1981:451). The results of the present analysis harmonize with this formulation. Therefore, it is suggested that the powerlessness measure in this analysis, congruent with the concept of personal powerlessness, is conceptually different from expectations that an individual's own contribution will affect achievement of the collective good.

As in the members vs. nonmembers model (Model 1), the effects of instrumentality in the active vs. token members

model (Model 2) are unexpected. However, unlike Model 1 where input was negatively associated with membership (-.2044), here it is positively associated (.4036). Instead, the association between decision making and active participation is unexpectedly negative (-1.481).

Summary of Results

Examination of the results of the logistic regression failed to support the existence of interactions in the models (hypotheses 8 and 9). In the active vs. token members model (Model 2), there was some evidence of the interaction of instrumentality with pessimism concerning others' participation (chi-square change = 6.18) but this was significant at the .10 level only. It is suggested however, that the theoretical formulation of interactions is still fruitful. Given the small sample size in this analysis, caution must be applied to the fact that support for an interaction model was not found.

Support was found for the proposed differences in the effect coefficients between the members vs. nonmembers model and the active vs. token members model (hypotheses 6 and 7). Not only did the size of the effects of education, income and being affected by the mine plan change, the

direction of these effects reversed between the members vs. nonmembers model (Model 1) and the active vs. token members model (Model 2). Looking at the difference in effects between the two models for the pessimism variable, the direction remains constantly negative. This supports Klandermans's proposal rather than Oliver's (hypothesis 3). However, the effect of pessimism on being a member is much smaller than the effect of pessimism on being an active member. Oliver's proposal that level of membership is an important consideration when examining the determinants of membership, is strongly supported here.

The results concerning the perceived instrumentality of the program for achieving the collective good are mixed (hypothesis 5). All three measures were expected to have positive effects in both models. However, in the members vs. nonmembers model (Model 1), the input measure was negatively associated with being a member. In the active vs. token members model (Model 2), the decision making measure was negatively associated. It is suggested that the construction of measures of instrumentality needs further development within the context of public participation programs. The construction in this analysis was based on the delineation of roles that public participation programs may play based on the dimension of decision making power.

CHAPTER SEVEN

SUMMARY AND CONCLUSIONS

This study is an investigative study of membership in public participation within the framework of collective action. As such, it serves as a test of the range of phenomena to which collective action theories can be applied. It was found that the concepts related to predicting membership in voluntary organizations could be successfully applied to predicting membership in public participation. To summarize, a brief discussion of the two major concepts - instrumentality and pessimism - is provided.

Instrumentality of the Program

The context of the present study differs considerably from the context under which collective action theory is generally formulated and tested. The first step in the examination of this context was a consideration of the definitional literature on what constitutes public participation. Typologies of public participation were presented and the dimension of decision making power

inherent in the typologies and definitions of public participation was delineated. Examination of these typologies suggested a number of roles for public participation: input, decision making and conflict resolution. The public participation program in the present study incorporated all three roles. The perceived instrumentality of these roles for mitigating the impacts of development was hypothesized to be a determinant of membership in public participation.

Drawing from Klandermans's expectancy-value theory, perceived instrumentality of the program for achieving the collective good was proposed to be positively associated with membership. In the present analysis, the attitudes of the respondents toward the three roles of public participation were used to express three measures of instrumentality. The results show that not all of the roles were found to be positively associated with membership. It is suggested that further examination of the perceived instrumentality of public participation programs is called for. The analysis of the roles that public participation may play is, however, basic to understanding the perceived instrumentality of the program for achieving it's goals. Certainly, a public information type of public participation will not be perceived by participants in the same manner as a program committed to

joint decision making. The perception of the program will be influenced by the social and cultural context of the participants.

The Pessimism Hypothesis

In outlining the theoretical work on determinants of participation, focus was placed on the development of collective incentives for participation. In addition to the perceived instrumentality discussed above, two other concepts were developed in relation to collective incentives: expectations concerning others' participation (the pessimism hypothesis) and expectations concerning the effect of an individual's own participation (powerlessness). Oliver (1984) and Klandermans (1984) propose rival hypotheses concerning the first of these. Each proposed a different direction for the effect of pessimism concerning others' participation on an individual's own participation. The results of the present analysis lend support to Klandermans's proposal that pessimism concerning others' participation acts as a self-fulfilling prophecy. It was found that pessimism lowered the probability of being a member and given membership, pessismism lowered the probability of being an

active member. This is in contrast to Oliver's proposal that the attitude of the participant is "If I don't do it, no one else will."

Reexamination of both Oliver's and Klandermans's theories can highlight how they came to rival hypotheses. Oliver argues that the expectation that others will not participate motivates an individual to participate or do without the collective good. This construction of the motivation assumes that an individual expects that the collective good will be achieved if s/he participates and will not be achieved if s/he doesn't. Klandermans's framework expands on the expectation that the collective good can be achieved by delineating three expectations relating to individuals' participation. It is in this delineation that an understanding of Klandermans's proposed positive relationship between individuals' expectations that others will participate and an individual's own participation is found. In addition to considering expected number of participants and expected contribution of an individual's own participation, Klandermans proposes that individuals consider the expected success of the collective action if many people participate. Thus, contrary to Oliver's construction, there is a consideration that an individual does not necessarily assume that the collective good can be achieved if s/he participates. For

Klandermans, if the expectation of others' participation is pessimistic, the expected success of the program is called into question and motivation to participate is decreased.

Klandermans's theoretical framework for proposing a negative relationship between pessimism concerning others' participation and an individual's own participation is supported not only in his own research but also in this analysis. However, Oliver also found some support for her proposed positive relationship between pessimism and participation. In her analysis, in support of Klandermans, she found that members were less pessimistic that nonmembers. However, in examining differences between active and token members, she found a positive association between being active and being pessimistic.

The most obvious explanation for these conflicting results lies in the problem of time ordering of the measures of pessimism and membership. Only a time series analysis could purport to show which came first - pessimism or membership. In fact, Oliver (1984:608) concludes that

> "some of the pessimism effect may be consequence rather than cause. ... Optimism about the collective action may be due to simple naivete: many people do not understand the collective-goods dilemma and are shocked when they try to organize collective action."

This interpretation of the relationship between pessimism concerning others' participation and membership implies the formulation of a new hypothesis. It suggests that membership in voluntary organizations affects participants' perceptions of collective action. In this analysis as well as in Oliver's analysis, it is easily proposed that the attitudes of the participants may have been affected by the members' experience. As Heska and Lang (1978) argue, the appearance of a relationship between attitudes and membership does not necessarily mean that the determinants of membership have been established.

> "There is in fact reason to suspect that certain attitudes and personality traits may be consequences of membership rather than the other way around: psychological theories such as dissonance (Festinger, 1957) or self-perception (Bem, 1972) have pointed out the degree to which attitudes may be inferred from observing one's behavior" (Heska and Lang, 1978:28).

The hypothesis that perceptions of collective action will be affected by the individual's experience is well worth considering. Oliver's proposal that the attitude of the participant is "If I don't do it, nobody else will", can be explained within this formulation. Participants in collective action, especially active participants, will have encountered the reality of participation, i.e., very few people do participate. The reality is also that very

few people need to participate. "Thursz (1972) stresses that successful community organizations do not require mass participation, citing Alinsky's claim that participation by three percent of a community would ensure success of the community organization" (Oliver, 1984:602).

The Statistical Analysis

The above examination of Oliver's (1984) and Klandermans's (1984) rival hypotheses suggested a weakness inherent in survey research design - the determination of causal ordering. The weakness of the method of statistical analysis used in the present work must also be addressed. Following Oliver's mode of analysis, models were estimated separately for the effects on membership and given membership, the effects on active participation. Although logically correct in assuming that people "are first selected to membership in an organization and, once members, face further selection for becoming active" (Oliver, 1984:606), this mode of analysis obscures the interpretation of effects on membership. Support for Oliver's proposal that the levels of membership must be considered was found in the present analysis. Effects of the proposed determinants of participation were different

in the active vs. token members model than in the members vs. nonmembers model. Given then, that there are differences between active and token members, the grouping of active and token members into one category in the members vs. nonmembers model obscures these difference. This problem is inherent in the use of a categorical dependent variable. The alternative strategy of treating memberhip as an ordinal variable and using ordinary least squares regression is however, more problematic. The assumptions of homoscedasticity and normality would be violated.

Conclusions

By examining collective action within the context of public participation, this study contributes to collective action theory. It does this in two distinct manners. First, it demonstrates that concepts drawn from collective action theory can be successfully applied to a new context, i.e., public participation programs. Second, it served as a test of the hypotheses proposed by collective action theorists. Support was found for the existence of a negative relationship between pessimism concerning others' participation and membership in public participation. The

causal ordering of this relationship remains questionable although the results of this analysis support those found in Klandermans's (1984) time series analysis. It is also suggested that the perceived instrumentality of the participation program for achieving the collective good is positively related to membership. Further theoretical development of this concept in not only called for but is essential to the delineation of the unique context of public participation as a form of collective action.

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