

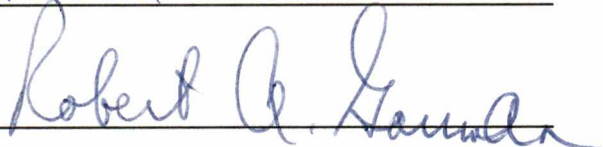
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I am submitting herewith a dissertation written by Thomas E. Shriver entitled "Social Control and Environmental Degradation by the Military: The Case of Oak Ridge, Tennessee." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Sociology.



Sherry Cable, Major Professor

We have read this dissertation
and recommend its acceptance:



Accepted for the Council:



Associate Vice Chancellor
and Dean of the Graduate School

SOCIAL CONTROL AND ENVIRONMENTAL DEGRADATION
BY THE MILITARY:
THE CASE OF OAK RIDGE, TENNESSEE

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Thomas E. Shriver

May, 1995

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DEDICATION

This dissertation is dedicated to the cause
of environmental justice in Oak Ridge.

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I would like to express my appreciation to a number of individuals for their roles in helping me complete this dissertation. I would like to thank Sherry Cable, who has been my advisor and mentor for the past five years. She has been a great friend and confidant and I will miss her immensely. I thank Mike Benson, John Gaventa, and Robert Gorman for serving on my dissertation committee. I would also like to thank Linda Robinson for her support and encouragement.

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ABSTRACT

Social movement analysts often assume that the aggrieved are cognizant of injustices. But recently analysts have documented cases of community contamination by corporate production activities in which the aggrieved remain unaware of their victimization. But what about communities contaminated by state sponsored production activities such as weapons production? Is the real obstacle to mobilization social control through economic and cultural oppression of the citizenry by those in power.

I use case study techniques to analyze the social control efforts by the state to repress mobilization in Oak Ridge, Tennessee, a nuclear weapons production site constructed as part of the Manhattan Project during World War II. Today the Oak Ridge Reservation is one of 17 federal sites involved in weapons production. About 680,000 people live within a 50-mile radius of the 37,000 acre site. Various kinds of contamination have been attributed to production at Oak Ridge facilities.

In 1992 a citizens group formed, which operates under great secrecy, not even acknowledging members' names except for the elected officers. I discuss the social control efforts that impeded mobilization until 1992 and which plague activists yet today.

TABLE OF CONTENTS

I.	THE RESEARCH ISSUES	1
II.	THEORETICAL ORIENTATION	7
	The Emergence of the Sociological Tradition in	
	Social Movement Analysis	7
	The Collective Behavior Tradition	9
	The Development of Resource Mobilization Perspectives	17
	Criticisms of Contemporary Social Movement Theory	23
	Macro-Micro Bridge	24
	The Continuity Approach	31
	Power Relationships: The Basis of Social Control	34
	The Social Control Literature	35
	Government Control of Social Movements	38
	A New Analytical Framework	41
III.	RESEARCH STRATEGY	45
	Document Analysis	45
	Individual Interviews	46
	Participant Observation	49
	Data Analysis	50
	Summary	51
IV.	BRIEF HISTORY OF THE OAK RIDGE RESERVATION	52
	The Secret City	52
	The Cold War	60
	The Contemporary Oak Ridge Reservation	67
	Conclusion	79
V.	FORMS OF SOCIAL CONTROL	82
	Forces Towards Quiescence	83
	Cultural Conditions Controlled by the Military	84
	Economic Development Controlled By the Military	92
	Inhibitory Forces on Activism	99
	Control of Medical Establishment	100
	Whistleblower Cases	106
	Information Control and Overload	108

Control of Public Meetings	111
Cooptation Committees	114
Conclusions	116
VI. CONCLUSIONS	118
Discussion of Findings	118
Cultural Hegemony	119
Restriction of Issues	121
Significance of Findings	123
BIBLIOGRAPHY	126
VITA	134

CHAPTER I

THE RESEARCH ISSUES

In recent years concern for the environment has risen to a new high in the United States. More and more Americans are refusing to accept continued environmental abuse. A 1992 Gallup poll revealed that over half of those studied (51 percent) rated environmental issues to be very serious. Sixty-seven percent felt their health was affected by environmental problems and sixty-nine percent believed that business and industry were largely responsible for the nation's environmental problems (Dunlap 1993).

This increasing environmental concern is reflected in the continued growth of the environmental movement which, in turn, has stimulated increased interest by scholars. Many analysts assert that the environmental movement is actually two movements or distinct wings of a single movement (Schnaiberg 1980; Morrison 1986; Cable and Cable 1995; Dunlap and Mertig 1992; Freudenberg and Steinsapir 1992). National based environmental organizations such as the Sierra Club, the National Wildlife Federation, and Friends of the Earth make up one wing of the movement. These organizations lobby for environmental legislation and influence public opinion regarding environmental issues. They work within the accepted guidelines of the system to promote environmental policies.

The second wing of the environmental movement is made up of

grassroots organizations. Typically, grassroots organizations emerge to contest the corporate right to pollute their communities. In 1989 Citizens Clearinghouse for Hazardous Waste publicly reported that it was working with approximately 7,000 grassroots environmental groups. Grassroots environmental organizations typically form after residents' complaints about the contamination of their community have been neglected by elected officials. As a result, the residents often feel betrayed and resort to working outside the system (Cable and Shriver 1994).

Different forces drive the activism of the national and grassroots wings of the environmental movement. National based organizations can afford to promote environmental policies by working through the system. As a result, the efforts by social control agents to inhibit their activism is minimal. In contrast, grassroots environmental groups are not afforded the luxury of working within the system. They are forced outside the parameters of the political system to protect their land and the health of their families and neighbors. Their efforts challenge the power system and thus draw strong repressive measures from the powerful.

Economic power is easily translated into political power in the United States, and small communities are no exception. Local business leaders are typically aligned with local political leaders. Individuals with vested interests in

local business are part of the community power structure and thus better able to press their claims. As a result, environmental activism by local grassroots groups meets with tremendous opposition from the local power structure. Social control techniques vary, but range from information control to the threat of job loss.

Most of these grassroots groups form to oppose contamination of the community by corporate owned production processes. In a few recent cases, however, grassroots groups have emerged to protest contamination by military sponsored production processes. The common element to environmental problems caused by corporations and those caused by the military is the federal government's tolerance of violations of environmental laws. The government passes environmental laws and then allows corporations and the military to violate them. To understand military environmental crimes, we must first examine corporate environmental crimes.

The handling of corporate environmental crimes differs from that of other crimes. There are no open courts, no jury, and no determination of innocence or guilt. Instances of corporate environmental crimes are often settled by a consent decree, "a compromise between two parties in a civil suit, the exact terms of which are fixed by negotiation between the parties and formalized by the signature of a judge (Mokhiber 1988:8)."

The prevalence of corporate environmental crime is largely due to the contradictory roles of the liberal democratic state. Liberal ideology calls for increasing capital accumulation, while democratic ideology requires the state to serve the interests of the majority. The contradiction lies in the state's obligation to promote corporate profits, frequently by externalizing the environmental costs of production, while also being charged with protection of the public from the consequences of that externalization -- contaminated communities (Cable and Benson 1993; Cable and Cable 1995; Krauss 1989).

According to Wolfe (1977), the state is able to maintain its juggling act by continuing support for corporate growth while placating the public with symbolic reform. These symbolic environmental policies allow corporations to make minor concessions to protests and pass the costs on to the public. According to Cable and Benson (1993:468), "The externalized costs are then borne by the public, who must pay either in the form of a polluted environment or in the taxes necessary to clean it up."

Military environmental crimes, like their corporate counterparts, also remain largely unpunished by the federal government. Until October 1992, the military was exempt from environmental laws. The United States military is arguably the largest generator of hazardous wastes in the country and probably the world (Renner 1991). Military installations use 25.6 million acres of land

in the United States and often sit along local waterways. According to Renner (1991), the Pentagon has generated more toxics annually than the top five chemical companies combined. Nearly 100 military bases are currently on the Superfund list and the Environmental Protection Agency (EPA) estimates that as many as 1,000 more will be added.

Despite the increased identification of environmental problems on and around military installations, community mobilization has been limited. I hypothesize that this lack of mobilization is due to the military's being the social control arm of the state and thus very effective at muffling opposition. The particular forms of social control adopted by the military have not previously been documented. They are likely to be similar to those used by corporations but with a significant additional weapon in their social control arsenal: national security. The military not only hides behind the veil of national security, but uses it as a tool to control opposition. Community residents questioning the activities of the military face the possibility of being labeled unamerican, unpatriotic, or even Communist.

Residents of Oak Ridge, Tennessee have faced environmental contamination from military production for fifty years. The Oak Ridge Reservation (ORR) is a nuclear weapons production site constructed as part of the Manhattan Project during World War II. About 680,000 people live within

a 50-mile radius of the 37,000 acre site. Today the ORR is one of 17 federal sites involved in weapons production. For decades, hazardous and radioactive materials have leaked off the Reservation and into surrounding communities, yet environmental activism has been sporadic and short-lived.

In this project, I examine the history of Oak Ridge to analyze the relationship between the military and grassroots mobilization. Was the military's exercised control over the population such that revelations of environmental damages from weapons production were not perceived by the public as serious problems? Were environmental damages perceived as problems but did not lead to mobilization? Or did they lead to mobilization that was subsequently stifled by the military?

CHAPTER II

THEORETICAL ORIENTATION

This chapter provides the analytical orientation I employ in my analysis of mobilization in Oak Ridge. After a history of the development of social movement theories in sociology, I focus on an in-depth view of the predominant perspective in contemporary social movement theory, resource mobilization. Next, I offer my own criticisms of resource mobilization perspectives, and those of other analysts, and offer suggestions for addressing some of its deficiencies. Finally, I present the analytical framework used in this study.

The Emergence of the Sociological Tradition in Social Movement Analysis

Sociologists have been writing about collective behavior and social movements for decades. Various schools of thought have been developed to address basic social movement questions: How and why do social movements emerge? What drives a person to join a social movement? Why do some social movements succeed while others fail? Attempts to answer these questions have led to the creation of a number of theoretical explanations that can be categorized as two broad paradigms, collective behavior and resource mobilization.

Collective behavior theory has its roots in the approach of Gustav

LeBon, who viewed the crowd, not as a rational collectivity, but as an unthinking mob with a shared mental condition characterized by the release of socially forbidden impulses. Some collective behavior approaches softened the pathological element, but maintained the belief that social movement behavior differed from normal behavior. Collective behavior theorists' focus on why people engage in social movement activity kept the approach squarely within the parameter of social psychology (Turner 1981). Their emphasis have led them to stress the psychological states of movement participants and the role that shared beliefs play in guiding movements (Morris and Herring 1988).

Resource mobilization takes the why of movement participation for granted and focuses on the how. It has its roots in political sociology and macro theory. In contrast to collective behavior theory, which focuses on the irrationality of social movement participation, resource mobilization theory views social movement participation as normal, rational behavior. Resource mobilization theories emphasize the process by which a group controls resources and directs them toward social change.

Collective behavior theory and resource mobilization theory represent two distinct views of social movements. I outline each approach by focusing on its origins, major proponents, and key arguments.

The Collective Behavior Tradition

The early classical theorists, such as LeBon portrayed collective behavior as irrational, irresponsible, and destructive. LeBon (1841-1931) was a French aristocrat who did much of his writing during the second half of the nineteenth century, a period of political turmoil in Europe. Massive strikes were taking place between 1869 and 1871, particularly in Paris, ending with the violent suppression of the Paris Commune in 1871.

LeBon feared the crowd and was alarmed by what he saw. He believed that it was essential to develop and apply the knowledge of collective psychology so that politicians could be taught how to better lead and control crowds. Thus, LeBon's work was geared towards defending the status quo.

LeBon believed that crowds were composed of normal people who had been transformed by the unique psychological processes of the crowd. He believed that the appearance of the crowd took away the conscious personality and replaced it with the unconscious personality. When this occurred, LeBon argued, people acted destructively under primitive instincts that were normally inhibited (LeBon 1960).

The term collective behavior was coined by Robert Park (1864-1944) and he is often given credit for being the founder of collective behavior theory. Park's educational background was in psychology and philosophy; he studied

with John Dewey. His dissertation, The Crowd and the Public, was written in Germany and published in 1904. Park later returned to the United States and taught at the University of Chicago until 1933.

Park's work on the crowd was clearly influenced by LeBon. While Park's characterization of the crowd and collective behavior was not as negative or pathological as LeBon, his explanation was essentially the same. According to Park, it is within the context of social unrest that collective behavior is developed. He treated individuals as victims of psychological transformation. Individuals were profiled as irrational and unable to ward off the impulse that derived from the condition of social unrest that directed their behavior within the crowd (Park and Burgess 1921).

Park, along with Burgess, succeeded in placing collective behavior in a sociological framework. These two analysts studied collective behavior by examining crowds, sects, mass movements, and social unrest. Social movements were viewed merely as one of many forms of collective behavior.

The classical approach to collective behavior was carried on by Park's student, Herbert Blumer (1900-1987). Blumer elaborated on Park's work by emphasizing the role of social unrest as a context within which crowds formed. Blumer described collective behavior as arising "spontaneously... not due to pre-established understandings or traditions" (1946: 168). Blumer, following

LeBon and Park, maintained that crowds transform the individual, diminishing or eliminating her ability to behave rationally. Blumer's work on collective behavior became widely accepted within the sociological literature and eventually even overshadowed the work of LeBon and Park.

Irrationality is a common theme throughout early collective behavior theory. Classical collective behavior theory argues that movement participants are not engaged in rational political action. Instead, movement participants are distinguished from the average citizen by an abnormal psychological profile. According to classical collective behaviorists, social movements are spontaneous uprisings whose participants are irrational, even pathological.

Eric Hoffer (1951) carried on the classical collective behavior tradition in The True Believer by arguing that crowds are drawn from the ruthless, the mentally disturbed, and from the criminal classes. According to Hoffer (1951:25), "when people are ripe for a mass movement they are usually ripe for any effective movement and not solely for one with a particular doctrine and program."

Collective behavior theory has changed considerably over the years. Many tenets of the classical collective behavior perspective have been replaced. Contemporary collective behaviorists no longer view social movements as irrational and pathological. Nor is the individual even considered as the unit of

analysis.

Contemporary collective behavior is probably best known through the work of Ralph Turner and Lewis Killian. Their work on collective behavior became popularized in the 1950s and is widely accepted today. They define collective behavior as "those forms of social behavior in which usual conventions cease to guide social action and people collectively transcend, bypass, or subvert established institutional patterns and structures (1987:3)." These analysts describe collective behavior as the study of individuals interacting in collectivities, or groups, through which collective behavior occurs. The group being studied is made up of interacting individuals, but the collectivity rather than the individual is the unit of analysis (Turner and Killian 1987).

In their theory of collective behavior, Killian and Turner have disassociated themselves from irrationality and novelty. Instead, Killian (1984:779) uses words such as "unpremeditated" and "unplanned." Killian believes the term spontaneity should be used to stress the unplanned nature of the social movement activity rather than the irrationality of such behavior.

While Turner and Killian stress that collective behavior is "normal" (1987:7), they nevertheless distinguish it from the relatively stable and predictable forms of group behavior guided by traditional norms. Routine

groups and organizations are governed by established (traditional) rules and have procedures for selecting members. The collectivities with which Turner and Killian are concerned lack these features. The analysts acknowledge that those collectivities are oriented towards a goal and arrive at some shared objective, but neither goal nor objective is defined in advance. In addition, these collectivities lack the formal procedures for reaching decisions that are characteristic of routine groups and organizations.

The key concepts of Turner and Killian's contemporary collective behavior theory are the emergent norm and the emergent definition of the situation. They define emergent norm as "some shared definition of right and wrong in a situation [that] supplies the justification and coordinates the action in collective behavior (1978:7)." Since the norm is specific to the situation, it is an emergent norm. The emergent norm then determines the reconstructed definition of reality for the collectivity. "This definition emerges in the situation and its function is to explain and interpret current reality" (1987:58). Hence, the emergent definition of the situation accommodates a variety of behaviors, both acceptable and unacceptable. Within this context, social movement participation is seen as emergent behavior in which homogenizing ideologies are important preconditions (Turner and Killian 1987).

Neil Smelser's Theory of Collective Behavior (1963) represented a shift

in emphasis within collective behavior theory. Smelser, a student of Parsons, used grand theory to explain collective behavior. Rather than focusing on the individual, he (1963) examines the social-structure. Smelser rejected previous theorists who argued that collective behavior must be explained by a special branch of sociology. Instead, Smelser takes a structural functionalist approach to collective behavior. Smelser's collective behavior theory was developed from Parson's general theory of social action.

According to Smelser, the major determinant of collective behavior is strain on the social structure. The types of strains to which Smelser refers include poverty, rapid unemployment, urbanization, and industrialization. He sees these strains as the initial causes of conflict. According to Smelser (1963: 48), "some form of strain must be present if an episode of collective behavior is to occur." Action is necessary to relieve the strain and reorganize the structure. This action is manifested in collective behavior and social movements.

Although Smelser paid close attention to social structure he never completely abandoned a social psychological emphasis. He argued that collective behavior was guided by certain kinds of beliefs which he referred to as the generalized belief. The generalized belief served the same function as Turner and Killians' emergent norm in mobilizing activity. According to

Smelser, the generalized belief is the basis for mobilization, operating as the shared definition that allows people to act collectively.

Smelser's work drew a great deal of attention and criticism. Morris and Herring (1986) criticize Smelser's generalized belief and argue that it was a throwback to LeBon's focus on irrationality. Smelser (1963:72) states that "generalized beliefs differ from those which guide other types of behavior. The beliefs on which collective behavior is based are thus akin to magical beliefs." Other social movement theorists were critical of Smelser's analysis, but most agree that his structural aspects were steps in a promising direction.

In fact, Smelser's work can be seen as a major link to the later development of resource mobilization perspectives. According to Smelser, movements proceed through sequential stages, their growth and spread facilitated by preexisting or newly created organizations. Smelser's work also included mobilization and social control as central variables, variables that would later be emphasized in resource mobilization approaches.

While Smelser remained committed to the irrationality of movements, he refined the collective behavior tradition to include social structural variables as well as traditional social psychological variables. Thus, while other collective behavior theorists had barely acknowledged preexisting organizations and resources, Smelser began to make them central concepts in his theory.

Accordingly, I argue that Smelser's work was the major link to what would become resource mobilization perspectives.

McPhail (1991) has attempted to strengthen collective behavior theory by narrowing the focus to micro variables but not personality variables. McPhail comments that collective behavior has become an ambiguous term and he suggests that it should not be equated with the crowd. McPhail maintains that explaining the crowd is an impossible task. In order to understand collective behavior the crowd must be broken down into its smaller components. McPhail replaces the concept of the crowd with that of the temporary gathering, which he defines as two or more persons in a common space and time frame who may behave collectively, although not necessarily so. He suggests characterizing gatherings by the variation in their complexity. By decomposing the crowd into elementary forms of behavior that occur within gatherings, McPhail argues, collective behavior can be more fruitfully analyzed.

According to McPhail, temporary gatherings of people are viewed as circumstances in which a variety of sequences of individual and collective behavior may occur. The sequence of collective behavior may vary in form (e.g., milling, marching) as well as in content (e.g., chanting). They may also vary in duration with some cases being extended (marches) while most are brief (McPhail and Wohlstein 1986).

Early work in collective behavior theory emphasized the pathological nature of movement participation. However, in the past four decades several collective behavior theorists have made significant contributions: Turner and Killian, with their work on emergent norm and emergent definition of the situation; Smelser, with his incorporation of structural variables (e.g., social strain); and McPhail, with his concept of temporary gathering. These analysts have offered valuable insights into social movement activity. However, their explanations differ significantly from those of resource mobilization theorists.

The Development of Resource Mobilization Perspectives

In the sixties and seventies, the civil rights movement, student movement, and women's movement shook America and sent a wake up call to movement analysts. For the first time, not only movement scholars studied but participated in social movement behavior. Criticisms of existing theories quickly emerged (Morris and Herring 1986). In fact, early resource mobilization theory may be seen as a direct reaction to earlier collective behavior traditions. These activists/scholars rejected pathological interpretations of their behavior. They were not about "to embrace an explanation that would tar themselves and many friends" (Gamson 1975:134).

Resource mobilization theory, albeit without the term, began to take

shape in the late sixties. In 1968 Lipsky published an article, "Protest as a Political Resource," that demonstrated how protest affected authorities. In that same year, Gamson published Power and Discontent, showing the consequences of the differential distribution of resources for strategies of influence. In the seventies, the resource mobilization approaches by Oberschall (1973), Tilly (1978), and perhaps most importantly, McCarthy and Zald (1973; 1987) began to be acknowledged as a viable alternative to classical theories.

These resource mobilization pioneers did not concur on all points, but they did agree on a fundamental point that distinguished the new perspective: social movement activity is political. Oberschall, Tilly, and McCarthy, and Zald replaced collective behavior's emphasis on social psychology and irrationality with a focus on structural variables. They analyzed relationships between determinants such as social organizations, interests, resources, mobilization, tactics, and goals, and the social movement participation they viewed as rational, calculated political behavior. Such interests pulled social movement analysis away from social psychology and pushed it toward political sociology.

The unit of analysis in resource mobilization theory is the social movement organization (SMO). This focus is in sharp contrast to that of early collective behavior, the individual. Central to Oberschall's (1973) theory of

mobilization is the organizational base, characterized by dense networks.

According to Oberschall, participants in social movements are most efficiently recruited through the pre-existing networks in which they are enmeshed.

Empirical evidence supports the claim that individuals who are well integrated into preexisting community structures constitute the majority of early participants in a social movement (Morris and Herring 1986).

Oberschall (1973:28) claimed that the main focus in the study of social movements should be on type and availability of resources, including material (jobs, incomes, savings, etc.) and nonmaterial (friendship, skills, authority, moral commitment, etc.) items. He asserts that people manage their resources in complex ways. People exchange some of their resources for others resources, create deficits by borrowing resources, and they can even recall earlier resource investments. The mobilization of individuals occurs as resources are acquired or controlled. Oberschall argues that resources are constantly being created, consumed, and exchanged. He refers to this process as "resource management."

Oberschall (1973) applies his resource management to social movements. Mobilization is referred to as the process by which some disgruntled group organizes and invests resources in the pursuit of some common goal. Groups come into conflict when they compete for some of the same resources. Thus,

social movement activity becomes a struggle over scarce resources.

McCarthy and Zald (1973, 1987) were the first analysts to use the term resource mobilization explicitly. They expand on some of Oberschall's basic tenets, focusing on resources: "The study of the aggregation of resources (money, facilities, and labor) is crucial to an understanding of social movement activity (1987: 18)." McCarthy and Zald argue that in order for a social movement organization to accomplish its goals, it must control adequate resources.

McCarthy and Zald (1973, 1987) deliberately neglect an examination of the development of group consciousness and the formation of ideology. The relevant resources for analysis were those available to a movement organization. Therefore, social movements may or may not be based upon the grievances of the presumed beneficiaries. "In some cases supporters - those who provide money, facilities, and even labor - may have no commitment to the values that underlie specific movements (McCarthy and Zald 1987:19)." They argued that some movements of the Sixties and Seventies mobilized a conscience constituency, including the wealthy and affluent middle class, which gave movements a larger pool of resources to draw from (McCarthy and Zald 1987).

McCarthy and Zald (1973,1987) focus on organizations. They argue that

only a minimum amount of organization is required for resource aggregation. A social movement organization (SMO) is defined as a complex organization that identifies its goals with that of the larger social movement and attempts to implement these goals. SMOs have several strategic tasks, including the mobilization of supporters, neutralization and/or transformation of mass publics into sympathizers, and the achievement of change in targets.

McCarthy and Zald (1987) show a sensitivity to costs and rewards in understanding individual and organizational involvement in social movement activity. They argue the costs and rewards of social movement involvement are centrally affected by the structure of society and the activities of authorities. Therefore, society provides the infrastructure that social movement industries utilize. The aspects utilized include communication media, levels of affluence, degree of access to institutional centers, preexisting networks, and occupational growth and structure.

Gamson's (1975) Strategy of Social Protest, represented one of the first quantitative examinations of social movement tactics and strategies. He examined the organizational tactics and strategies of a random sample of 53 social movement organizations active in America between 1800 and 1945. Although Gamson's methodology has been questioned (Goldstone 1980), he developed some interesting findings. He found that goals, tactics, and

organizational factors determine a social movement organization's success or failure. Social movement organizations with weak organization and tactics were more likely to fail than those with strong organization and tactics.

According to resource mobilization theory, social movement activity is carried out by rational actors. (McCarthy and Zald 1987; Tilly 1978). While early collective behavior approaches viewed the motivation for movement participation as the need to manage psychological tensions in a disruptive social situation, resource mobilization theorists see the motivation as the desire to gain political goals. McCarthy and Zald (1987), Gamson (1975), and Tilly (1975) stress that social movements are rationally organized activities which form a normal part of the processes of social and political life. Gamson (1975) claims that social movements are simply politics by other means and oftentimes the only means available to relatively powerless challenging groups.

Resource mobilization theorists (Gamson 1975, Gerlach and Hine 1970, McCarthy and Zald 1987) are concerned with the organizational structure of the social movement, including the internal structure of the organization itself. While organizational structure is a common variable among resource mobilization analysts, there are differences of opinion as to which organizational structure is the most likely to lead to SMO success. Gamson (1975) claims that centralized bureaucratic frameworks are highly correlated

with SMO success. In contrast, Gerlach and Hine (1970) argue that decentralized groups structures are more effective, especially in gathering grass roots support, maintaining that the strength behind this form of structure is its lack of susceptibility to elites with personal gain as a motive.

Early work by Obserchall, Gamson, McCarthy, and Zald laid the groundwork for resource mobilization theory. They treated social movement activity as political. In addition, they incorporated structural variables into the analysis. But RM perspectives have not been without critics, even critics within their own camp.

Criticisms of Contemporary Social Movement Theory

Criticisms began to emerge as resource mobilization perspectives gained popularity. These criticisms led resource mobilization scholars in two directions. The first variation is in response to resource mobilization's disregard for social psychological variables. Resource mobilization theorists up to this point had been interested in structural conditions, organizational structure, and the strategies and tactics of social movement organizations. In part, they took this extreme, structural position to establish a viewpoint clearly distinguishable from collective behavior. Adherents of this first approach demand a more complete theoretical framework, one that will incorporate the

elements of resource mobilization as well as the social psychology of collective behavior. This approach may be termed the macro-micro bridge. A second variation of resource mobilization perspective is a reaction to collective behavior. In contrast to collective behavior theorists, who emphasize the spontaneous and unplanned nature of mobilization, these analysts stress established networks and continuity. This approach may be termed the continuity approach, or historical resource mobilization.

Macro-Micro Bridge

The macro-micro variation of resource mobilization resulted from social movement scholars' attempts to define an acceptable middle ground between the micro analysis of collective behavior and the structural analysis of resource mobilization. Much of the criticism was generated by McCarthy and Zald (1977), whose early work deemphasized the role of grievances. McCarthy and Zald popularized resource mobilization theory and in its early days their work was often synonymous with the term.

The perceived abandonment of social psychology in the seventies and early eighties sparked criticism from several resource mobilization scholars (Walsh 1981; Klandermans 1984; Ferree and Miller 1985; Snow et. al 1986). Bert Klandermans (1984: 583-584) was at the forefront of the criticisms stating

that "resource mobilization theory went too far in nearly abandoning the social-psychological analysis of social movements." He states that, even if ideology and grievances do not alone explain the rise of social movements, they nevertheless play significant roles in the decisions of individuals to participate in a social movement. Thus, resource mobilization analysts should not abandon ideology and grievances, but rather should search for theoretical solutions to explain them as determinants of participation in a social movement.

According to these movement scholars, the real analysis should not focus on a broad societal level or an individual level, but rather at a third level intermediate between the individual and her broad social context (McAdam, McCarthy and Zald 1988). Thus, these scholars feel that resource mobilization can be strengthened and expanded by combining social psychological variables with structural variables.

Several social movement analysts have demonstrated the need for a macro-micro link in empirical studies. According to Walsh (1981), resource mobilization has been successful at documenting mobilization, but has failed to acknowledge the importance of grievances. Ignoring grievances has led resource mobilization theorists to neglect micro-mobilization processes in the emergence of social movement organizations. Walsh adds that, depending on the nature of the grievances, both structural and social psychological variables

may become significant predictors of involvement. Based on his findings regarding citizen protest organizations in the Three Mile Island (TMI) area, Walsh argues that both grievances and the structural situations of aggrieved groups should be considered as variables.

Walsh (1981) found that individual and collective grievances associated with the TMI accident created a large number of people available for protest mobilization. Combining social psychological variables with structural variables, Walsh shows that the existence of two pre-accident SMOs provided anti-nuclear experts and a developed protest ideology which aided in channeling the discontent.

Walsh (1981) argues that resource mobilization's failure to recognize grievances is partially due to the concentration on national movements rather than on local mobilization. He also argues that suddenly imposed major grievances such as chemical spills, court-ordered busing, or a nuclear accident are more or less likely to spur collectivities to protest mobilization, depending on their structural situation.

According to Walsh (1981), the importance of grievances in the TMI mobilization illustrates that the outright rejection of social psychological variables is a mistake. He argues that discontent among social movement participants is variable and not a constant. He acknowledges that the

importance of structural and ideological factors may vary from one case of mobilization to another, but argues that this should be considered an empirical question for additional research.

Studying mobilization campaigns of the labor movement in the Netherlands, Klandermans (1984) argues that, while grievances and ideology might not play important roles in the rise of a social movement, they are essential in analyzing initial participation in movements. In his analysis, Klandermans claims that willingness to participate in a social movement is a function of the perceived costs and benefits of participation. Relative deprivation becomes an important variable in his view. He states that the key to understanding social movements is to examine how goals are perceived to assist in the elimination of relative deprivation or discontent.

Ferree and Miller (1985) argue that resource mobilization must make some social psychological assumptions to discuss participation. Following Walsh (1981) and Klandermans (1984), they argue that resource mobilization needs to take ideology more seriously. Such a tactic would address the strategic concerns of movement organizers and help demonstrate whether or not a movement represents the interests of its constituency.

Ferree and Miller focus on the problem, neglected by resource mobilization theorists, of explaining the translation of objective social

relationships into subjectively experienced, collectively defined grievances. On a social psychological level, they identify three distinct organizational strategies for mobilizing persons as participants: conversion, coalition, and direct action. At a resource mobilization, macro level, their model gives independent causal weight to ideology without discounting the role that resources play in defining group goals. Ferree and Miller claim that, when assumptions such as the roles of ideology and socially structured perceptions are placed within a resource mobilization framework, they can help in analyzing relationships between social movements and the society as a whole.

William Gamson represents an example of an early resource mobilization proponent now advocating a macro-micro link. His early work represented traditional resource mobilization theory (e.g., strategies and tactics). However, today he advocates the incorporation of social psychology. Gamson (1992) argues that there must be a link between individual and sociocultural levels of analysis to explain how identity, solidarity, and consciousness operate in mobilization.

Snow et. al (1986) and Snow and Benford (1992) have developed one of the most interesting macro-micro links with their concept of frame alignment. They developed frame analysis as a reaction to resource mobilization theory's exclusion of ideology. In their analysis, Snow et. al (1986:464) use the concept

of frame alignment to "refer to the linkage of individual and SMO interpretative orientations such that some set of individual interests, values and beliefs and SMO activities, goals, and ideology are congruent and complementary." They borrow the concept of "frame" from Goffman (1974:21). Goffman used frame to denote an interpretation of the world that would allow individuals to identify and label occurrences within their lives.

The probability of being recruited to a social movement is determined by the links to one or more movement members through preexisting ties and the absence of countervailing networks. Thus, frame alignment provides the basis for understanding the process through which collective action is inspired and legitimized (Snow and Benford 1992). Snow et. al (1986) and Snow and Benford (1992) argue that a movement's framing issues play a role in effecting political opportunities and the availability of resources.

According to Benford (1993:677), current research in social movement analysis should stress the centrality of grievance interpretation and reality construction processes. Benford argues that this approach expands resource mobilization theory "by examining the negotiated and interactive processes by which movement actors identify and articulate grievances, fashion collective attributions, and seek to neutralize opponents while persuading other audiences to contribute resources to mobilization campaigns."

Benford (1993) argues that social movement organization members spend much of their time constructing particular versions of reality, developing alternative visions of that reality, attempting to affect their audiences' interpretations, and managing the impressions people form about their movement. Problems arise within and among a movement organization when there is a lack of consensus over these interpretative issues.

Benford (1993) uses the nuclear disarmament movement to demonstrate that interorganizational frame disputes are ubiquitous within social movements. He identified two separate wings (radical and moderate) within the disarmament movement. Throughout his study, these factions remained in ideological disputes. Of the fifty-one disputes he examined, all but two occurred between the factions. According to Benford (1993:696), intramovement disputes that become publicized indicate a movement's weakness. He adds that a movement consisting of opposing factions is particularly vulnerable to "divide and conquer tactics" by social control agents.

Theorists in the macro-micro variation have attempted to incorporate micro analysis into resource mobilization. However, a number of resource mobilization theorists reject this trend. In contrast, they argue that social movement analysis should remain at the structural level.

The Continuity Approach

The continuity approach advocated by Gusfield (1981), McAdam (1982), Morris (1984), and Taylor (1989) developed as a direct reaction to the collective behavior tradition with its emphasis on movement emergence and spontaneity. According to collective behavior accounts, social movements can suddenly appear out of nowhere. Proponents of the continuity approach refer to this account of movement activity as the "immaculate conception" view of social movements (Taylor 1989: 761).

They argue that an overemphasis on movement origins leads to a lack of attention to what Gusfield (1981: 324) calls the "carry-overs and carry-ons" between movements. According to theorists in this camp, it is within established networks that social movements develop. They argue that what others studied as "births" were often actually turning points or breakthroughs in movement mobilization (Taylor 1989: 761).

McAdam (1982), in his study of the civil rights movement, finds that the movement was continuous and created by preexisting institutions. He reports that black insurgency of the mid-1950s was shaped by several broad processes blacks confronted between 1930 and 1954. These conditions allowed insurgents more leverage with which to press their demands on elites.

Morris's (1984) study of the civil rights movement supports McAdam's

claim that the movement was continuous. Morris argues that the movement was centered around strategic planning, organizing, and preexisting organizations. He also documents how the movement was sustained and supported by conditions created during the first half of the twentieth century by the urbanization of the southern black population.

Rupp and Taylor (1987) found that the women's movement has been continuous, despite media claims that the movement died, once in 1920 and again in 1980. They argue that feminist activity between 1945 and the mid-1960s is best understood as a stage in the longer history of the American women's movement. Rupp and Taylor's study indicates that preexisting feminist groups provided intangible resources to new organizations that emerged in the late 1960s.

Perhaps the most important theoretical contribution of the continuity approach is the notion of "abeyance" (Taylor 1989: 762) The term abeyance is borrowed from Mizruchi (1983) and is central to his theory of social control . Abeyance is used to describe a process that characterizes mass movements that succeed in building a support base and achieving a measure of influence, but are subsequently confronted with a nonreceptive social environment. The abeyance process operates through organizations capable of sustaining challenges to the movement during unfavorable periods. Gusfield (1981) points

out that during unfavorable periods certain structures and strategies ensure a movement's continuation until relevant social forces change, making more overt mass-based action possible.

According to Taylor (1989), social movement abeyance structures sustain movement linkages in three ways: they promote the survival of activist networks; they sustain a repertoire of goals and tactics; and they promote a collective identity that offers participants a sense of belonging.

Taylor (1989) argues that the American women's movement remained alive in the 1940s and 1950s through the work of a small group of feminists who stayed committed to the vision that had drawn women into the movement at the turn of the century. However, the political climate of the 1940s and 1950s was not conducive to their ideals and commitment and they were thus marginalized from mainstream women. Taylor refers to this form of activism as a "social movement abeyance structure" (1989: 762).

The continuity wing of resource mobilization provides us with valuable insights regarding the life of a social movement organization. However, it fails to address issues of power and social control. In the next sections I build a conceptual framework which examines social movements by placing social control and power at the heart of the analysis.

Power Relationships: The Basis of Social Control

In the 1970s, social movement analysts adopted the resource mobilization view with its focus on the mobilization processes of a social movement organization (SMO) engaged in the protest of longstanding grievances such as poverty and racial discrimination. Research focused primarily on one question: why did the SMO emerge? The answer was the availability of various resources. Analysts assumed that the aggrieved were well aware of injustices prior to forming a SMO but simply lacked the necessary resources for mobilization.

More recently analysts have documented cases in which the aggrieved appear to be unaware of their victimization despite longstanding objective problems. This has been particularly so in communities contaminated by some environmental threat. Contamination in documented case studies is typically a result of corporate production processes in which either the production process itself or the wastes generated by it pollute the air, water, or land in the community. Analysts investigating these "suddenly realized" grievances have identified such factors as official public announcements of danger and the distribution of new information as important prods to the recognition of collective grievances and subsequent mobilization. But I suggest that in many cases the real obstacle to mobilization is less the availability of resources than it

is the economic and cultural oppression of the citizenry by elites. Social control by the powerful can make it difficult for citizens to organize and occasionally may even keep citizens from recognizing shared grievances.

Since effective social control by definition stops mobilization from occurring, current resource mobilization perspectives cannot account for cases of lack of mobilization. Explaining the *absence* of an event is far more difficult and fraught with methodological pitfalls than is explaining its presence. But analysts should not avoid the task. Lack of mobilization is a critical issue in understanding social movements and larger questions of social change and it must be tackled however it can be. I suggest analyzing social control processes by examining the role of power relationships in mobilization, particularly those between community political and economic elites and working class residents. I will begin my construction of such a conceptual framework by examining the literature on social control.

The Social Control Literature

Social control has been a central concept in the field of sociology, beginning with the work of Durkheim and of Toennies on the society's mechanisms for the control of deviance. Among the groups and individuals identified as those who exercise social control are socialization agents such as

families, teachers, and communities; cultural influences such as books, movies, television, and the media; and social institutions such as churches, employing organizations, and the federal government.

My project analyzing quiescence and resistance focuses specifically on social control by the government. The literature on the subject is large and varied. Criminologists have maintained a leading position in the sociological literature on social control (Lowman, Menzies, and Palys 1987; Black 1984; Gibbs 1982, 1989; Cohen 1985; Cohen and Scull 1983). A large part of this literature is devoted to examinations of the state as a social control agent and of state-sponsored social control techniques (Melossi 1987; Henry 1987; McMullan 1987; Davis and Faith 1987). Lowman, Menzies, and Palys (1987) in particular argue that the state must be central in any discussion of social control, given its major responsibility for maintaining order to protect the public.

To identify that part of the extensive literature on social control by the government that will aid in constructing an analytical framework for this study, I classify segments of the literature according to the groups or individuals over whom the government exercises control. The role of the government relative to the controlled group/individual influences the way the state uses its power and the form that social control takes. Examined in this way, the literature on

social control by the government is composed of three categories: cases involving control of individuals; cases involving the state's control of corporations; and cases involving control of social movements.

The government exercises control over individuals through the criminal justice system, acting as the representative of the people by enforcing the laws of the majority. Thus, measures to control individuals are overt and institutionalized. In a similar way, control of corporations is exercised by the government through regulatory agencies. The government is mandated to do so through its democratic charge to protect the public from corporate excesses that present a threat to public health and safety. As with individuals, the state controls corporations through mechanisms that are both overt and institutionalized.

In contrast, government efforts to control social movements are seldom overt or institutionalized. The measures are frequently covert and non-institutionalized. Rather than being based on a public consensus, government's control of dissent is more often hidden from the public. Instead of being consistent with established laws, the government attempts to repress dissent, contradicting the basic constitutional rights of free speech and assembly.

Individual social movement participants may occasionally violate established laws and consequently enter the criminal justice system, but the

deterrent effect of the threat of arrest cannot logically be seen as the cause of quiescence among an aggrieved population. The government's arguable failure to regulate corporations is unlikely to promote such apathy and cynicism as to stop would-be activists from opposing a polluting corporation. Consequently, given the striking differences that characterize the nature of the state's actions, I will concentrate on that segment of the literature covering cases involving government efforts to control social movements.

Government Control of Social Movements

The government has maintained an important position in the social movement literature, but the emphasis is usually on how the government is affected by social movement activity. Barkan (1984) points out that resource mobilization theorists tend to limit their attention to the goals and tactics of SMOs, while neglecting the goals and tactics of their opponents, including the state.

While resource mobilization analysts acknowledge that the government hinders social movement activity, few place social control at the heart of their analyses (Obserschall 1973; Tilly 1978; McCarthy and Zald 1987; McAdam 1982; Gamson 1990; Barkan 1984, 1985; Jenkins and Perrow 1977). Typically, they maintain that the government's response to a social movement

depends on the movement's tactics, goals, and scale (Stotik, Shriver, and Cable 1994; McAdam 1982; Tilly 1978). According to McAdam (1982), institutionalized tactics represent little threat to state power, while non-institutionalized tactics represent the SMO's rejection of established mechanisms for addressing grievances. The same dynamic applies to the goals of an SMO. Reformist goals call for symbolic changes, while revolutionary goals directly challenge the state's power. The scale of mobilization effects the reaction by the state in that, the larger the mobilization, the more repressive the state's response (Tilly 1978).

Research indicates that government frequently uses the legal system to control social movements, for example, in the repression of striking workers, peace protestors, student activists, Communist Party leaders, and members of the American Indian Movement (Frankfurter and Greene 1930; Peterson and File 1957; Belknap 1978; Stotik, Shriver, and Cable 1994). In Barkan's analysis of the state's attempts to stifle civil rights activities, he finds that: "The entire legal machinery of the South became a tool for the social control of civil rights protest" (1984:554). He demonstrates that the state controlled the civil rights movement by arresting activists whenever possible, setting high bails, and pressuring lawyers not to assist anyone arrested for civil rights protesting. While work by Barkan and others begins the analysis of

government control of social movement activity, it is limited to legal control and fails to indicate the full range of options the government has in its arsenal.

An even more serious problem is that none of this work explains mobilization that has failed to surface; that is, cases in which government repression is so effective that it actually stops mobilization before it starts. Why have resource mobilization analyses neglected such an important part of the picture of social change?

I contend that the underlying foundation of resource mobilization perspectives is a pluralist view of the political system. Pluralism offers variability in resources as an implicit explanation for quiescence and consequently avoids dealing with differential levels of power possessed by social groups. From a pluralist vantage point, social movements are interest groups competing in the political arena for certain advantages. Interest groups enter the political arena with their grievances, seek to have them addressed, receive new benefits, and move out of the political arena making way for a new interest group to enter. In this view, power is not an issue but resources are. Mobilization is thus a function of the availability of the resources necessary to enter the political arena.

In contrast to the pluralist view of the political system is a view that recognizes inherent differences in power. Political and economic elites have a

disproportionate influence on social and economic policies that endow them with significantly greater power relative to disadvantaged groups. Instead of interest groups seeking new benefits, social movements pose direct threats to the political system itself, and thus to elites, because they challenge the distribution of power in society. From this perspective, power is of central importance and so is social control.

A New Analytical Framework

A new analytical framework is needed that moves beyond resource mobilization's basic pluralist assumptions about the political system. Given these assumptions, resource mobilization cannot address why mobilization fails to surface. I argue that the limits of resource mobilization can begin to be resolved by adopting an elite view of the political system. This new framework not only brings in power and social control, but places them at the heart of social movement analysis.

The way to expand existing work on government control of social movements and to propose an alternative to resource mobilization's pluralist bent is to broaden the parameters of social control to incorporate power analyses.

There are a number of ways to approach the analysis of power in

contemporary society. For my conceptual framework, I turn to work by Lukes (1974) and Gaventa (1980) who discuss the ways in which power is exercised by describing three dimensions of power. The first dimension is similar to resource mobilization perspectives in emphasizing the availability of resources to competing groups. But instead of assuming equal access to resources in a pluralist world, analyzing power relationships reveals that some have an abundance of political resources while others have only limited access.

The second dimension of power maintains an emphasis on the decision-making process but illuminates how certain issues and actors are kept out of the political process. That is, the political agenda itself is controlled by the more powerful social group. The analytical focus, then, is shifted away from the winners at the bargaining table to the social groups and issues deliberately excluded from the process. In the third dimension of power, emphasis is placed on ideas rather than on observable behavior in the decision-making process. The more powerful social group exerts significant influence on the consciousness of less powerful groups through its control of existing social structures, shaping perceptions through culture, socialization, rituals, and information control.

Thus, in my analytical framework, I envision social control as being efforts by a more powerful social group to prevent less powerful groups from

having significant input in important decisions affecting those groups. The more powerful group may be employers, community elites, or the state. The less powerful group may be employees, community residents, or the working class. Social control is exercised in three ways: by cultural hegemony -- that is, by creating a culture that supports the powerful group's definition of relevant political situations; by keeping certain issues threatening to the powerful group from even being raised in the political arena; and by restricting resources needed to enter the political arena.

This framework requires, then: an historical analysis of the power relationships between the groups and the culture that emerged from those relationships; the permeability of the decision-making process to other groups, both in overt political participation and in having issues placed on the political agenda; and restriction of the necessary resources for entering the political arena.

To explore the utility of the proposed analytical framework, I employ a case study of the ORR in Oak Ridge, Tennessee. In this case study, the most powerful group is the military-corporate structure that dominates local government. The least powerful group are residents who fear their health may be impaired by ORR production activities. I analyze social control exercised by the military-corporate structure through cultural hegemony, the military's ability

to keep issues from being raised in the political arena, and the military's restriction of the necessary resources for entering the political arena.

The research questions pursued in this analysis include: In what ways was the military able to shape the Oak Ridge culture to prevent perceptions of grievances about production processes? Was government control such that revelations of environmental damages from production processes were not publicly perceived as serious problems? Were environmental damages perceived by some residents as problems but the issues derailed before they arrived at the political arena? How open to the public were decision-making processes, through voting, public meetings, or other mechanisms? Given the perception of grievances by residents, what resources were necessary to enter the political arena? What was the extent of the military's capacity to restrict these resources?

After a discussion of my data collection techniques, I begin the analysis with an historical examination of the development of the Oak Ridge community by the military. Next, I identify the forms of social control that have been used by the military to encourage environmental quiescence and inhibit activism once it has emerged. I conclude by discussing the theoretical contributions and practical applications of the research.

CHAPTER III

RESEARCH STRATEGY

This research project is an historical and contemporary analysis of Oak Ridge, Tennessee. The focus is on quiescence and resistance and the role played by the military-corporate structure. Sources include document analysis, in-depth interviews with area residents, and participant observation.

Document Analysis

An important part of the data collection was document analysis. In this context, documents include any written materials containing information about ORR, the polluting of the environment, and the ill health effects suffered by Oak Ridge residents.

Potential disadvantages exist with document analysis. Documents are often written with a particular bias. Writers sometimes exaggerate, even fabricate, to make a story more appealing to their readers. Second, documents often fail to give a complete picture of the material of interest to the researcher. Third, there is often a lack of availability. It can be difficult to obtain the necessary documents needed for a topic. Finally, the documents available for a particular topic are likely to vary greatly in terms of format, making comparison difficult (Bailey 1978).

Yet document analysis offers advantages not possible with other data collection techniques. As Espland (1993:297) argues, "formal documents produced by an organization are revealing sources for understanding how power is exerted, legitimated and reproduced." A major advantage of document analysis is that it allows the researcher to access subjects not available through other research techniques. Documents tend to be written in a natural environment, seriously limiting reactivity. Documents are often written by the authors as events occur in their lives. Finally, document analysis is inexpensive compared to many other data collection techniques.

Documents used in this study as data sources include: articles from both Oak Ridge and Knoxville newspapers; historical accounts of the construction of the Oak Ridge community; federal and state documents; activists' correspondence; and SMO documents such as newsletters and press releases. The newspaper articles were particularly helpful in constructing a chronology of local and national events relevant to the study, providing both context and a greater probability of accuracy in factual matters.

Individual Interviews

The primary data source was in-depth interviews with activists, employees of ORR, counter movement participants, and local concerned

citizens. A total of 30 interviews were conducted by myself and my colleague, Sherry Cable.

Problems exist with individual interviews. One potential disadvantage relates to participant recall. Participants were asked to rely on memory to describe conditions in the past. Another potential limitation is the relatively small number of participants interviewed. With a small sample size generalizability is severely limited. However, since this study is exploratory in nature, generalizability is of limited concern. In an unstructured interview, the interviewer may inadvertently bias the participant's response by asking leading questions. Finally, data from unstructured interviews can be difficult to summarize and interpret.

Despite the disadvantages, analysts have demonstrated that data collected via individual interviews provide rich insights into exploratory studies and provide a number of distinct advantages over other methods (Whyte 1984; Yin 1989). Interviews conducted in a non-threatening environment allow participants to feel comfortable and will likely result in the collection of more valuable data (Burgess 1982; Strauss and Corbin 1990; Baily 1978).

Individual interviews allow researchers to collect data in participants' own words. There is a great deal of flexibility when conducting individual interviews (Yow 1994; Yin 1989). In-depth interviews allow the researcher to

probe deeper into certain topics, clarify information, and ask spontaneous questions. These advantages are particularly important when the research project is exploratory in nature -- when the researcher is fishing for relevant information. Individual interviews permit the researcher to observe the non-verbal behavior of the respondents (Burgess 1982; Marshall and Rossman 1989).

Entry into the activist circle was difficult to achieve because of activists' deep fears of retribution from the military and its community supporters and because of their wariness of the University of Tennessee-Knoxville, the researchers' affiliation, given the institution's historic friendly relationship with the ORR. Consistent with the ironies of field work, entry was finally gained because activists' trust increased immeasurably when they discovered that my colleague had been removed from a research team funded by the Department of Energy and the State of Tennessee to survey Oak Ridge residents' attitudes toward environmental remediation at the ORR. Apparently, the researcher's rejection by authorities was an automatic recommendation to the activist community.

Respondents included activists, ORR employees, local officials, residents with health concerns, and lawyers involved in ORR-related litigation. Interviews varied in length from 45 minutes to two hours. Many respondents

were interviewed twice and some were interviewed three times. Early interviews were initiated through established contacts; additional respondents were identified through a snowballing technique.

Participant Observation

Once entry into the field was gained, I accepted a voluntary position on the executive board of a citizens health organization in Oak Ridge and thus became a participant observer. This experience proved valuable in understanding activists' lives in Oak Ridge.

Potential problems exist with participant observation. Gaining entry into the field is often difficult, particularly when dealing with sensitive subject matter (Hoffman 1980). Sample sizes are usually small in participant observation and results are therefore not generalizable to a larger population. Finally, researchers lack control over the environment since observation takes place in a natural setting (Bailey 1978).

Despite potential problems, there are a number of advantages with participant observation. Perhaps the primary strength is the depth of information gained from actually participating in the respondent's social environment. As with individual interviews, participant observation allows the researcher to observe non-verbal behavior. Finally, there is a great deal of

flexibility (Babbie 1989).

As a participant observer with a citizens health organization, I gained first-hand experience into the challenges environmental activists face in Oak Ridge. I participated in organizational meetings and decision-making, recruitment, construction of news releases, and participation in DOE sponsored public meetings. This experience added significant texture to the understanding of quiescence and resistance in Oak Ridge.

Data Analysis

The first step in the data analysis phase was to develop a chronology of relevant events in the past decade from newspaper articles, DOE documents, and organizational newsletters. The second step was to transcribe the interview material. Interviews were transcribed as closely as possible in order to use comments in respondents' own words. The transcriptions do not reflect the entire interview process since they do not include nonverbal gestures and communication. Therefore, I supplemented the transcripts with personal observations from the interview process.

Transcripts of the audio-recorded interviews were then coded into nonexclusive categories as directed by my analytical framework. They represented: descriptions of Oak Ridge history and culture; personal accounts

of a variety of types of activism; background information on the activists; accounts of documented and perceived repression and intimidation; and accounts of pro-ORR attitudes and activities. These computer-generated files, re-grouping transcript material by code rather than case number, were then used as the basis for analysis.

Summary

The research employed in this project involved triangulation. Given the sensitive nature of the topic it was necessary to use whatever method available. Data collection involved the use of document analysis, in-depth interviews, and participant observation. In the next chapter I provide a brief history of the ORR. This information provides a context for examining the forms of social control discussed in chapter five.

CHAPTER IV

BRIEF HISTORY OF THE OAK RIDGE RESERVATION

In this chapter I discuss the history of the Oak Ridge Reservation. The chapter is organized by time period into the following areas: the secret city, the cold war, and the contemporary ORR. For each period I will discuss Oak Ridge within the context of global politics, production activities at the Reservation, and cultural activities of the community.

The Secret City

To understand the development of the Oak Ridge Reservation it is important to examine the state of the nation and the world. I will begin by examining important developments in physics, German aggression, and the United States' entry into World War II.

The story of the nuclear bomb begins with physics. In 1939 German physicists at Berlin's Kaiser Wilhelm Institute broke new ground by splitting atoms of uranium with neutrons. Fear developed as physicists across the globe realized that this nuclear fission could be used to produce the world's most dangerous bomb (Johnson and Jackson 1981). Concern was heightened because this lethal potential weapon was under the control of Adolf Hitler.

The United States responded with President Franklin D. Roosevelt's order to create the National Defense Research Council, which soon became the Office of Scientific Research and Development. This consortium of government representatives and university scientists was charged with assessing the feasibility of producing a nuclear weapon for the United States' arsenal in three years (Johnson and Jackson 1981).

Despite popular belief that Germany was on the verge of building an atomic bomb, several scholars have argued to the contrary, that German work on an atomic bomb was nonexistent (Bundy 1988; Powers 1993; Udall 1994).

According to Udall:

It is plain that if the Fuhrer had made a decision to initiate an atomic-bomb program, he would have begun by ordering his nation's top physicists out of their laboratories and classrooms and into a cadre supervised by military men he trusted. Such an action would have been an unmistakable sign that leading physicists were being enlisted in an unusual undertaking of far-reaching importance (Udall 1988:37).

Pulitzer prize winner Richard Rhodes (1986) argues in his book, The Making of the Atomic Bomb, that the United States did very little to investigate whether the rumors about Nazi Germany's work on an atomic bomb were true.

Despite the controversy, the United States responded as if Nazi Germany would win the race to build the atomic bomb. Enormous amounts of federal

money were channeled into the research effort and, by the summer of 1942, nuclear scientists in the United States were prepared to work on the actual development. The gap between German and American nuclear scientists had been closed in less than three years.

In June 1943, President Roosevelt approved the development of the Manhattan Project. The project was headed by General Leslie Groves and its sole purpose was the production of an atomic bomb within three years. Three regions were selected for production sites: Hanford, Washington on the Columbia River; Los Alamos, just outside Sante Fe, New Mexico; and an East Tennessee location that became known as the Oak Ridge Reservation (Johnson and Jackson 1981).

The military created communities at each of the secret production sites. In East Tennessee, the supporting community became known as the city of Oak Ridge. It is located in the foothills of the Cumberland Mountains, about eighteen miles northwest of Knoxville. The vision of the atomic age is still a vital part of the area. An entrance sign at the city limits reads: "Welcome to Oak Ridge: The Vision Lives On."

The area that became Oak Ridge was selected for four reasons. First, the isolation of the site ensured secrecy and promised fewer casualties in case of accidents. Second, the inland location protected it from enemy attack.

Third, the mountain ridges provided natural barriers and separated the three plants that were planned. Fourth, proximity to the Tennessee Valley Authority, the government-owned utility, assured the enormous amounts of electric power needed for production processes.

To obtain the land, the Army displaced four small farming and mining communities and evacuated at least 1,000 families. Land owners were paid below-market value for their land, an average of fifty to sixty dollars per acre. Homeowners received some compensation, as long as they settled quickly with the government, but they were not helped in relocation. As the native residents were moved out, barbed wire fences were constructed around the site. Heavily guarded gates housed soldiers requiring government-issued badges for entry. Entrance onto the reservation was restricted to employees and their families who lived within the barbed wire.

The Army built three separate but related plants. The Y-12 plant covered 3,400 acres and contained a 2.5 mile long section for the enrichment of uranium using an electromagnetic approach. The X-10 plant, later referred to as the Oak Ridge National Laboratory (ORNL), was a research facility that grew up around the graphite reactor, the prototype for the huge plutonium production plant soon constructed at Hanford, Washington. The K-25 plant, like Y-12, was a uranium enrichment installation but used a gaseous diffusion

process. The government elected to pursue two different strategies for uranium enrichment in case one turned out to be more successful. K-25 produced the enriched uranium used to bomb Hiroshima.

Because of the nature of the government's project, the culture created by the military was one of science and secrecy. Hundreds of scientists and engineers moved to Oak Ridge from cities and universities, creating a professional class. Accurate records of the geographic origins of employees were not kept in detail, but Johnson and Jackson (1981) found that scientists were recruited largely from nuclear related fields at Columbia University, the University of California at Berkeley, and the University of Chicago. Residents retained their professional class culture by organizing a symphony orchestra. Nevertheless, life was very different in the secret city, compared to the openness in which they were used to working. Scientific inquiry was encouraged, but the code of secrecy and control took precedence.

The norm of secrecy was enforced through seven gates with armed guards. The security force consisted of 6,000 guards of military and civilian police and 500 plainclothes agents from the Army's Intelligence and Security Division. Badges and passes were required for entrance. Between 1943 and 1949, 32 million passes for entrance were issued (Schlesinger et al, 1983).

Secrecy was also enforced through the high degree of

compartmentalization at the plants. The work was designed so that workers in one section of a building were unaware of what other workers in the building were doing. Each worker only knew what was needed to do his own particular job. Secrecy in the work-place was continually reinforced. Signs in the work-place read, "What you see here, what you do here, let it stay here when you leave here" (American Museum of Science and Technology).

Secrecy was not confined to the plants; it also permeated family life. "Family life under the hegemony of the Great Secret was so closely scrutinized that when one couple wanted to name their baby Sarah Uranie, military intelligence decided her birth certificate would say only 'Sarah U.' until the war ended" (Schlesinger et al, 1983: 114). Security was enforced to the point that workers were prohibited from discussing work with their families.

The number of employees was extremely underestimated and caused severe housing shortages throughout the war period. Initial housing estimates were made for 13,000 but within the first year the population rose to 42,000. In 1945, the population inside the fence peaked at 75,000 (Johnson and Jackson 1981). Shortages were not confined to housing. Long lines formed for nearly everything, including food, clothing, and paychecks (Schlesinger et al, 1983).

Housing shortages exacerbated racial discrimination. Initial plans called for a 'negro village,' that would be similar to housing for whites. But

pressured for additional housing for whites, the government never built the proposed black community. A Corp official justified the allocation of housing funds to whites rather than blacks, pointing out that "reservation blacks seemed to prefer the low-quality hutment areas to the type that would be provided in the proposed Negro community" (Johnson and Jackson 1981: 22). Black workers were relegated to the Scarboro neighborhood of the city and were forced to live in "hutments," the worst housing in the city. Hutments were sixteen by sixteen feet, one-room structures containing four to six beds and featured a stove in the middle of the room. They were intended as temporary housing, but became permanent quarters for black workers at the plants.

Oak Ridge had many characteristics of a boom town in these early days. An original Oak Ridger says: "It had all the qualities of the boom town....A lot of jobs where there hadn't been jobs before -- a lot of jobs for young women where there hadn't been any before. So, quite a change in the social structure." The professional class was quite young, with the majority in their early twenties. In fact, 40 was considered old. The streets of the city stayed crowded and construction went on continuously. One constant reminder of the construction was the chronic mud problem. Oak Ridge residents still tell stories of how their mud-covered shoes identified them as Oak Ridgers when they shopped in Knoxville.

Although strenuous efforts were made to shroud the project in secrecy, some technicians were aware of the efforts to produce an atomic bomb. A technician who has lived in the Secret City since its construction says:

I was at Columbia University for a couple of years and, up there, what we were doing was pretty well understood by people. We were mostly technical people and we put two and two together and got four and after we did that they told us. They figured it was better to tell us and make us keep our mouths shut than it was to have us guessing.

On August 6, 1945, the atomic bomb "Little Boy," fueled by Oak Ridge enriched uranium, was dropped on Hiroshima. Seventy-one thousand Japanese civilians died. Three days later "Fat Man," fueled by Hanford-produced plutonium, killed 35,000 in Nagasaki. Japan surrendered on August 15, 1945. Only at this point were residents of the Secret City told what they had contributed to the war effort. Most residents felt proud of their accomplishment. One described his feelings in this way:

I had a number of people thank me for having worked on [the atomic bomb]. Anybody that was in an outfit scheduled to be in the first two or three waves of landing on the Japanese mainland was kind of pleased that we used it. I knew one fellow that was in an outfit that was scheduled to go in the first wave against Japanese Imperial Marines, who were said to be man-for-man the best fighting force in the world. They were counting on 100 percent casualties. He was real enthusiastic about the use of the atomic bomb.

This was common sentiment around Oak Ridge and remains so today. Recently, three elderly couples watching a slide show on the war period at the American Museum of Science and Energy agreed with a gentleman's statement about the ethics of dropping the atomic bomb on a civilian population: "It's a good thing we did it. It saved so many lives."

The Cold War

Following the end of World War II, Oak Ridge workers were told that secrecy and security at ORR would be loosened. But, almost immediately, the United States began a new arms race, replacing Germany with the Soviet Union. The government allocated massive resources for the development of the next "Superbomb," -- the hydrogen bomb. Secrecy and national security remained paramount. In 1946 President Truman signed the Atomic Energy Act transferring authority of the ORR was transferred from the military to the civilian Atomic Energy Commission (AEC). Under the direct management of the AEC, ORR workers were assured production work for the future.

The Y-12 plant was engaged in the production of finely machined components for nuclear warheads, using elements such as lithium, uranium, and beryllium. Production required a lithium separation process that used massive amounts of mercury. Lithium separation was terminated at Y-12 in 1963 but

dangers for employees continued.

On June 16, 1958, a criticality incident occurred. Several Y-12 workers were repairing a leaky valve when enriched uranium began pouring out. The workers immediately smelled oxides and saw a blue flash followed by yellow vapors. This nonexplosive nuclear reaction activated an alarm and the building was quickly evacuated (Schlesinger et al 1983).

All of the workers were exposed; three received eighty times the then-allowable annual occupational exposure to radioactive substances. According to one of the survivors, "when we got this [exposure], they took a couple of jackasses out there on the farm and they gave them the same dose that they did us and it killed [the jackasses]." Union Carbide, then the corporate contractor managing Oak Ridge operations, and the AEC settled with each of the workers so they would never try to sue (Schlesinger et al 1983:144). The exposed workers' settlements ranged from \$6,000 to \$21,000 and they were promised free medical care and permanent employment. According to one worker, "Of course they couldn't put it [the promise] in writing, but they told us that as long as we went ahead with the experiments and stuff we'd have a job, as long as DOE was out there" (Schlesinger et al 1983:145).

Seven of the eight exposed workers developed blood related illnesses or cancers. One of the least exposed workers was laid off just seven years after

the incident, despite the unwritten promises, and subsequently developed cancer of the stomach and colon. This criticality incident was only one of fifty-four radiation-related incidents at the ORR in 1958 (Schlesinger et al 1983).

During this same period, the X-10 plant was active in producing radioisotopes. Workers at the plant conducted studies in basic nuclear science and in the biological problems associated with the use of radioactive materials. Workers at the plant also performed basic research for the "Peaceful Use of Atomic Energy" campaign. In 1955, workers at X-10 built the first nuclear reactor exhibition for the first United Nations International Conference for Peaceful Uses of Atomic Energy.

The K-25 plant continued to produce enriched uranium through the gaseous diffusion process. Some of the operations were shut down in 1964 due to a surplus of weapons grade uranium. However, production of lower grades of uranium for commercial nuclear reactors continued until 1987. At that point, the entire gaseous diffusion operation was shut down. It was later declared permanently closed.

Employment at the ORR peaked at 82,000 in May 1945. But these figures dropped dramatically shortly after the Hiroshima bombing. By June 1946 the number of employees was down to just 34,000. Employment continued to decline and, by the summer of 1946, only 34,000 people were

employed at the Reservation. The majority of jobs lost were among construction workers. The peak workforce for construction was 47,000, but by mid-1946 only 2,000 construction workers remained employed at the ORR. By 1950 the population of Oak Ridge stabilized at around 30,000 (Johnson and Jackson 1981).

Despite the massive cutbacks and changes, the remaining residents began to build a sense of community identity. Johnson and Jackson (1981: 171) show that community residents were converted from temporary inhabitants to "Oak Ridgers." This sense of community spirit was observed on automobile plates reading "Oak Ridge -- Atomic Capital of the World."

The barbed wire fences and gates were removed in 1949 and Oak Ridge was open to the public for the first time. In 1951 the AEC agreed to contribute \$1 million dollars per year to the local schools and hospital plus additional money as needed for public services, in lieu of the city's taxing of the local "industry." A 1953 attempt to incorporate the city failed because so many residents feared privatization and the loss of government funding for public goods such as water, public transportation, and garbage disposal. So in order to wean the community from its support, the government began offering financial incentives for the city's independence (Schlesinger et al 1983).

By the mid-1950s, the government was selling homes to residents. Oak

Ridge was incorporated under Tennessee laws in 1959. Incorporation developed out of an agreement between the Town Council and the AEC that stated that the AEC, based on the 1955 Atomic Energy Community Act, would provide funds for ten years. Each year the city of Oak Ridge was to present a "reasonable" request for funds, to which the AEC would respond (Schlesinger et al 1983).

The plan was designed to stimulate industrial growth and diversification. The Town Council hired an industrial development consultant who advised the city to build its economic program around the atom. But nuclear energy, with the exception of a brief period in the 1970s, has never been an economic boom. Nor did any other industries locate in Oak Ridge. Prospective industries feared being the new tax base for the city. With no industries to tax and with significant public service demands, the city faced deficits even with the federal assistance from the AEC.

In 1959 Oak Ridge requested and received an extension of its original federal assistance contract with the AEC. By 1960, eighty-four percent of the city's revenues came from federal aid. Realizing its economic dependence, Oak Ridge leaders consistently searched for ways to diversify the local economy. In 1962, the AEC promised to investigate opportunities for alternative uses of its facilities in the event of a reduction in weapons

production. Throughout the 1960s Oak Ridge leaders spent \$1 million on industrial recruiting, all to no avail. Local residents blamed ORR's high wages and the scientific community's indifference to economic development for the failure to attract industry. By the end of the decade, Oak Ridge residents were paying the highest combined city-county property tax in Tennessee and one of the highest in the nation.

Economic problems intensified for the city of Oak Ridge in the 1970s due to inflation and declining support for nuclear energy. Federal payments to Oak Ridge declined relative to the city's total revenues. The federal assistance formula was tied to property taxes and since Oak Ridge had the highest in Tennessee, much of the federal assistance was cut off. By 1976 federal assistance accounted for only 22% of the city's total revenues.

The state of the economy was worsened by out-migration. Between 1962 and 1978, the percent of ORR workers living in the city dropped from 45% to less than 30% (Schlesinger et al 1983). The situation improved slightly in 1977 when the city negotiated for a new formula for financial assistance. The new contract used a formula tied to the Consumer Price Index instead of the property tax rate. In the new contract, assistance was dependent on the number of ORR employees living in the city and on the availability of government funds.

Oak Ridge's failure to diversify the economy continued into the eighties. In the 1980s, the city made a bid to bring in high tech industries. Oak Ridge officials planned for the new Tennessee Technology Corridor to stretch from Oak Ridge to the Knoxville airport. However, the plan didn't pan out. Frustrated with unsuccessful attempts to diversify, some residents began urging the city to build on Oak Ridge's nuclear advantage by accepting radioactive waste for treatment/storage.

The ORR was not regulated by outside agencies. In 1976, the Resource Conservation and Recovery Act (RCRA) was passed and established a cradle-to-grave management system for toxic chemical wastes. Regulatory authority was shared by EPA and state agencies. But, DOE successfully sidestepped RCRA by claiming complete exemption from the law for all its facilities. In 1978, the Tennessee Department of Environment and Health denied the ORR a water discharge permit. Yet, ORR continued to operate without a permit into the 1980s.

In the 1980s, major environmental violations at ORR were publicized. In 1983, DOE acknowledged that Y-12 had dumped or spilled 2.4 million pounds of mercury into nearby streams between 1950 and 1977. Large amounts were discharged into East Fork Poplar Creek, which runs under Y-12, off-site, and through the city of Oak Ridge. A 1977 study undertaken by then-

contractor Union Carbide had examined the mercury releases, but the study was kept confidential until a local newspaper reporter filed a Freedom of Information Act document for the public release of the study findings. The reporter's actions led to a 1983 congressional investigation that found that DOE had misled the public and other government agencies about mercury releases, using national security as a convenient shield to hide the politically sensitive data on the amount of mercury loss. Also during the 1980s, four waste disposal ponds at Y-12 were found to be leaking metal plating wastes, acids, and solvents into the groundwater. Finally, in 1989, the ORR was placed on EPA's National Priority List. This set in motion a series of activities required by the federal Superfund law to contain and clean up wastes and to protect public health and the environment.

The Contemporary Oak Ridge Reservation

Change was expected in Oak Ridge as the Cold War ended in 1989. Nuclear arms competition with the Soviet Union was over. Operations at the Oak Ridge Reservation could be turned away from building nuclear weapons. With these changes one would expect to see a loosening of security and an end to the secrecy that has haunted the Reservation since its inception. But this was not the case. In fact, secrecy is maintained in Oak Ridge, even as

environmental health hazards from the Reservation continue to be exposed.

With the threat of nuclear war with the Soviet Union in the past, warhead fabrication facilities at Y-12 ended. Attention has directed to waste disposal activities and the dismantling of nuclear warheads. Y-12 is responsible for the dismantlement of secondaries, the second stage of warheads that includes parts of highly enriched uranium. Y-12 is also the national storehouse for bombgrade uranium and is referred to as the Fort Knox of highly enriched uranium.

Y-12's storage capacity for enriched uranium is expected to be utilized more frequently as the United States continues to dismantle nuclear weapons. In November, 1994, DOE officials announced intentions to accelerate the reduction of U.S. stockpiles of bomb-grade uranium in order to set a worldwide example of nonproliferation. Y-12 may play a key role in industrial plans to blend highly enriched uranium with other materials to render it unusable for weapons purposes but acceptable for commercial nuclear reactor fuel. Government officials plan to make progress on the disposition of the warhead materials in advance of the international talks slated for late next year on renewal of the Nuclear Nonproliferation Treaty.

In September 1994 key operations at Y-12 shut down when federal safety inspectors discovered noncompliance with nuclear safety rules. Local

inspectors subsequently found another 1,300 violations of written procedures, although reportedly none had direct bearing on nuclear safety. The shutdown at Y-12 could interfere with meeting the nation's nuclear disarmament goals. Currently warheads are being stored at DOE's Pantex plant in Texas. In November 1994, the federal government unveiled its secret program, Project Sapphire, in which bomb-grade uranium in Kazakhstan in the former Soviet Union was shipped to Y-12 for storage. The announced purpose of the project was to protect the world from the uranium being controlled by terrorists.

Y-12 is not the only ORR plant to have environmental problems in the nineties. ORNL became the national repository for uranium-233 and concerns have been raised about contamination by protactinium-233. In 1991, nine resorts at Watts Bar Lake filed a \$25 million lawsuit claiming an ORNL report on the contamination of the lake and the accompanying media coverage hurt their business. Two years later, a federal magistrate recommended that former and current ORR managers, Union Carbide and Martin Marietta Energy Systems, be cleared of negligence and liability claims. In December, 1992 a cesium-137 leak contaminated 19 ORNL workers. In 1993, DOE and Martin Marietta Energy Systems made plans to spend \$2 million to clean up radioactive fields that have been contaminated with cesium-137 in the 1960s to the study the latent effects of atomic warfare on vegetation.

In the spring of 1993, 40,000 pounds of uranium were found in old pipes in four K-25 buildings. Officials declined to reveal estimates from a fifth building because it involves highly enriched uranium of potential use in making atomic bombs. As a result, the information is classified. Cleanup of the uranium is expected to cost approximately \$7.5 billion. K-25's primary mission in recent years has been related to environmental restoration and waste management. The plant is expected to be the home base for many cleanup experiments and demonstrations in the future. More than 75 private Oak Ridge environmental-technology firms support the initiative with staffs totaling more than 3000 technical experts. The TSCA (Toxic Substances Control Act) incinerator at K-25 is the only incinerator in the United States licensed to burn mixed wastes with PCBs. It is critical in reducing the mixed-waste backlog in storage at ORR. In the fiscal year 1994, a record 5.74 million pounds of wastes were burned, exceeding the "goal" of 4.2 million pounds.

Environmental problems deriving from ORR production did not go unnoticed. In 1989, ORR was placed on EPA's National Priorities List, the Superfund list. Over 700 sites grouped into 40 primary units, are being investigated for contamination by radioactive elements, mercury, asbestos, and PCBs. Contamination is known to have traveled off-site and into the Clinch River, the Watts Bar Reservoir, and East Fork Poplar Creek. The Clinch

River and the Watts Bar Reservoir fed by streams that run through the ORR are centers for recreational activities and serve as industrial waterways. Both have been contaminated with cesium-137 and mercury. The East Fork Poplar Creek, which begins at the Y-12 plant and runs through the city, received much of the 2.4 million pounds of mercury that were released from Y-12.

A year after the reservation was placed on the Superfund list, researchers conducted three studies analyzing the historic releases of cesium and mercury into the Watts Bar Reservoir. Contaminants found included cesium, PCBs, mercury, plutonium, arsenic, cobalt, beryllium, nickel, chromium, uranium, and tritium. Contaminants were also found in White Oak Creek, which drains a large watershed containing several ORNL burial grounds. Until recently, contaminants were buried in unlined trenches and landfills. Known contaminants include cobalt-60, cesium-137, strontium-89 and 90, mercury, and PCBs. Contamination is not limited to water. A DOE environmental report said that ORR's three plants released a total of 102,000 curies of radioactivity to the air in 1990 alone, through production activities and environmental remediation activities.

In 1991 DOE signed three agreements with the State of Tennessee. The Federal Facilities Agreement outlines a cleanup plan and defines DOE's, EPA's, and the State of Tennessee's respective responsibilities in the

remediation effort required under the Superfund law. Under the second agreement, the Environmental Oversight Agreement, DOE provides funds for the state to employ personnel to oversee DOE's activities as they impact on the environment. The third agreement, the Oak Ridge Health Agreement, assures that DOE will provide the State of Tennessee with funds to conduct an independent assessment of the effects of Oak Ridge operations on the populations living near the reservation, downstream and downwind.

Materials used in weapons production at the Oak Ridge Reservation are often toxic and radioactive and these same materials are released into the environment. Many of the releases have been documented. For example, Reservation officials acknowledge that 2.4 million pounds of mercury were released since the 1950s. Given the documented contamination and the potential for health problems in Oak Ridge one would expect to see environmental activism. But until recently, environmental activism around Reservation issues was nonexistent.

Why did environmental activism suddenly emerge in Oak Ridge? What was the reaction? Activism emerged in Oak Ridge because a physician moved into the area and legitimated the health grievances of area residents. The military reacted to the environmental activism by strengthening the social control forces that effectively inhibited activism for half a century. This issues

will be elaborated on in the remainder of this dissertation.

In 1991 the health concerns of many area residents were legitimated when a new physician in the city began inquiring into possible connections between substances used at the Reservation and certain illnesses in his patients. Oncologist Bill Reid accepted a position at the Methodist Medical Center in late 1990 after being heavily recruited. He quickly drew approximately 300 patients, many with similar symptoms. Reid observed disproportionately large numbers of kidney cancers compared to his previous experience. He also noted that the cancers were more severe in younger people. He found that patients downstream of ORNL had more bone marrow disorders, lymphomas, autoimmune diseases and immuno-deficiencies than upstream patients.

Many of Reid's patients had long suspected that their illnesses were due to production at the ORR. One respondent traced her health problems back to childhood exposures to heavy metals in the 1950s. She lived downstream of Oak Ridge, where her favorite recreation was swimming in the Clinch River. She asserts, "I have documentation that shows that the highest levels of discharge into the Clinch River were in the 1950s." She has suffered from health problems most of her life, without ever getting a diagnosis.

Another respondent, in contrast, had been healthy and active all her life, a P.E. major in college. But suddenly her health began declining. She saw

doctors in Oak Ridge but, "they were all trying to tell me that I was depressed. I mean, I didn't have anything to be depressed about." Never diagnosed, by the time she left Oak Ridge she was using a walker.

Another resident described her health problems as starting out mild but steadily worsening. She suffered from chronic fatigue, rashes and spots on the skin, back aches, arthritis, and tremors. The symptoms became so bad that she took a year off from work to try to get a diagnosis. Eventually she had to stop working completely. She discussed the frustration of trying to get a diagnosis:

You have these periods where you go on these great doctor searches and think, 'I've got to find some answers' and then you see doctors and see doctors and hunt for answers and don't get any answers and then you think, 'I've just got to make the best of it.'

Several respondents discussed the possible connection between Reservation activities and histories of illnesses in their families. One respondent had four out of five aunts and a father develop who developed cancer. She made the connection to ORR:

I know we read all the time about cancer rates in Oak Ridge -- not having higher cancer rates. In my evidence, I see all around me, is most everybody is sick. If you live until you are 50-60 years old, it seems you are going to get cancer. Now is that true everywhere else? It doesn't seem like it is true everywhere else.

Another respondent's father was employed in construction work for

subcontractors at each of the ORR plants. She says he was never told what he was exposed to, but often had to wear a surgical mask or breathing apparatus. He died of pancreatic cancer, without any family history of cancer. When asked about whether she discussed this with her father, she responded, "We had a few fights when I was a teenager. I didn't think it was worth it. But he insisted it would be alright -- that the money was good."

Another respondent became concerned after his wife got sick. He said:

[Wife] used to run me into the ground -- very energetic. She taught me how to fish and how to bowl. She was the sparkplug of the family and now that spark was going out. So much of our lives were devoted to finding out what was going on.

One respondent made a connection between her residence, in a known contaminated area, and weapons production. Her father became sick with pancreatic cancer while living in the neighborhood. Within two years of living in the same house, the respondent also became sick. She traced the history of past residents of the house and found that the men of the households who had lived in the house had all died of strange cancers.

The respondent's suspicions grew when her dog became sick after getting into the mercury-contaminated East Fork Poplar Creek. She took the dog to the vet who found that his spleen was extremely enlarged. She recalls the incident: "The vet said, 'what has this dog been exposed to?' He said that

the dog, from that exposure, probably wouldn't live for another year." When ORR later released more information about pollution, she became more firmly convinced of the relationship between her residence and health problems.

In the summer of 1991, Dr. Bill Reid contacted health and safety officials at the Oak Ridge Reservation to obtain information on the substances used at the Reservation. His purpose was to reduce the number of medical tests on his patients. Three weeks later, Reid was notified that his medical charts were to be reviewed because of concerns about the quality of his work. By the end of 1991, Reid was subjected to a peer review, a formal evaluation of a physician's medical competence. Regardless of the results, a peer review goes into a national database and scars the physician's employment record. When his contract with Methodist Medical Center expired in 1992, it was not renewed. He has taken the hospital to court but has been unsuccessful. Currently, Reid is unemployed and more than \$300,000 in debt for legal fees.

A respondent and former Reid patient had this to say about Reid's effect on her activism:

He confirmed, as a medical professional, what I had suspected all these years. I saw him on television. I looked at my husband and said, 'Finally, thank God there is someone who is a medical professional who is saying what I was saying for 15 years.'

Another respondent described relief at finally finding a doctor that made

sense to her:

We were very skeptical....We didn't really expect much. So, we went and he gave a thorough medical history -- and that was the most fascinating meeting in my life. He was the only doctor that talked apples and apples to me. Every other doctor had been talking -- not even a fruit.

An activist expressed relief at Reid's manner in this way:

He laid out a list of symptoms and it made me cry -- it was astounding. It gave legitimacy to my symptoms. It was a relief....He gave you literature which backed up his beliefs. He was very intelligent.

To show their support for him, Reid's patients hosted a party at his office on his last day of work. At that gathering, patients shared their stories of suffering and of their treatment by other doctors. They decided that very day to form a support group. According to one respondent, "We talked and talked and decided we better stick together as a group to be heard." This support group would become an environmental health organization.

Group members began by educating themselves on the Reservation's production activities, investigating both past and present pollution. Then they identified some of the possible health effects associated with such waste. They went public with their concerns and found the media to be very interested. Members wrote letters to congress, organized news releases, sponsored presentations by outside researchers, and actively participated in DOE's public

meetings. One member discussed the early days of the organization:

We put out letters and made telephone calls, talked to people. We did some speaking engagements and we went to all the meetings that they were having and talked to lots of people. I then did start having people call me from the media and request television interviews and I gave it to them.

In April, 1993, nuclear proponents suffered another blow when DOE's nuclear safety chief quit, severely criticizing DOE Secretary Hazel O'Leary for neglecting her responsibility to protect federal workers and the public from contamination, saying, the nuclear safety chief said, "I have seen no indication they [DOE] have any appreciation for nuclear safety" (Knoxville News-Sentinel 1993 [4/22/93]).

Late in 1993, information about AEC sponsored human experimentation was declassified and made public by Secretary O'Leary. The government documents revealed that radiation was used in medical experiments on unknowing citizens in various sites across the country during the 1940s and 1950s. Among those subjects were approximately 200 cancer patients who were given high levels of radiation by ORNL medical personnel (Udall 1994). These stories have been documented in the popular media.

Such publicity enhanced environmental awareness among Oak Ridge residents and activists. It strengthened the environmental health organization and led members to challenge DOE assurances of the priority of public health

and safety. A member described DOE's reluctance to deal with group members at public meetings:

These are questions they don't want to have to deal with. They don't want to have to answer them. Nobody has ever asked them before and they just figure that their meetings will go smoothly and they can just dole out a little information and pacify people.

As a result of the group's success in airing issues before the public, DOE engaged in various forms of social control to inhibit activism directed at nuclear weapons production in Oak Ridge.

Conclusion

The present population of the city of Oak Ridge is approximately 30,000. Oak Ridge remains a company town and residents still base their identity on the wartime mission. T-shirts sold at the Museum of Science and Technology in Oak Ridge read, "Born of War, Living for Peace, Growing through Science. ~ One of the newest restaurants in town is called, "The Atomic Cafe." Residents embrace nuclear progress out of economic self-interest and a faith in technology, a legacy of Oak Ridge's part in the Manhattan Project.

Activism over health concerns occurs only among a small minority of the population. Many Oak Ridge residents believe that environmental problems are exaggerated; they feel confident in the ORRs' ability to control and cleanup

contamination. An ORR retiree explained:

In my opinion, the people at the plants are pretty careful about things. Not that there hasn't been a mistake or two in the past. But they are, in general, pretty careful about things.Radioactivity is very mysterious. The truth of the matter is you get exposed to it all of the time. Things that people are not familiar with cause them to be scared. But, if they want to benefit from the technology, they've got to accept some of the risks.

The ORR's new commitment to cleanup has attracted a number of small businesses to the area, most of them environmental consulting firms that specialize in environmental cleanup. Several new companies have moved to the area to burn radioactive and hazardous waste, which raises more health concerns.

The influx of environmental consulting firms has created a "privatization" of environmental cleanup and serves important functions. These firms help to stimulate the Oak Ridge economy by bringing in valuable cleanup dollars and by employing local citizens. More importantly, by taking over environmental cleanup the firms take pressure off the original polluter -- the ORR.

This chapter was not intended to be a comprehensive history of the ORR or the Oak Ridge community but has, nevertheless, shown that significant environmental problems have been identified on and near the Reservation. One

might expect environmental activism to occur. Yet, until recently activism has been almost nonexistent. Consider the following quote from a 1993 column in the Knoxville News Sentinel (Munger 12/15/93) referring to DOE's announcement of a new, open policy:

That's good, of course, but there is also a caveat to that good news. What a responsive DOE does is place greater responsibility on those living in federal communities -- like Oak Ridge -- *to speak out on issues of concern* [italics added]. For those who might be inclined to sit back and rely on common sense and rational thought to rule the day, there could be a rude awakening. One never has been able to depend on DOE to go forth with common sense and rational thought, and that certainly won't be the case now -- unless folks speak their minds and encourage DOE to do what they think is right.

The environmental quiescence in Oak Ridge is not due to apathy. It is the result of efforts by social control agents to inhibit residents from voicing their environmental concerns. In the next chapter I discuss the efforts made to impede activism and inhibit it once it has emerged.

CHAPTER V

FORMS OF SOCIAL CONTROL

Various attempts at activism have occurred in the Oak Ridge area over the past fifteen years. In the early 1980s, organizing was focused around peace issues. A group of church-affiliated Oak Ridgers formed ORPAX -- Oak Ridgers For Peace. Their concern was with the morality of war, not with environmental damages from nuclear weapons production. In interviews, these peace activists reported no social control efforts by DOE and only minor reactions from friends and neighbors.

A regional environmental group, Save Our Cumberland Mountains (SOCM), also attempted to organize in Oak Ridge during the 1980s. SOCM's original mission concerned strip mining issues, but leaders eventually branched out to other environmental concerns. They did not encounter social control efforts by DOE, but, when they tried to mobilize supporters around weapons production issues, Oak Ridgers refused to participate. According to a SOCM organizer:

A lot of people [in Oak Ridge] really thought that the strip mining that those people did up in the hills...was really bad stuff and somebody should make them quit - - somebody ought to make them do it in a way that doesn't hurt communities. But those same people did not want us to work on issues in Oak Ridge.

Although neither ORPAX nor SOCM members reported attempts to control

their activism, this was not the case with residents organizing around health grievances. Unlike the other cases, DOE responded to these activists with several forms of social control in serious efforts to inhibit activism directed at nuclear weapons production in Oak Ridge. Two basic forms of social control by the military have been identified. The first form of control promotes quiescence; the second inhibits environmental activism once it has emerged. Each will be discussed in this chapter.

Forces Towards Quiescence

Given the history of working with toxic and radioactive substances and the environmental accidents associated with those substances, Oak Ridge is remarkable for the long quiescence on such matters. Why did activism on health concerns not emerge until just recently? Health grievances have existed in Oak Ridge for years but a catalyst was needed to generate collective opposition. That catalyst took the form of a physician who legitimated residents' health concerns when he arrived in Oak Ridge in 1990.

In this section I will discuss the forces towards quiescence -- the factors that have impeded activism for nearly five decades. Two types of conditions controlled by the military contributed to quiescence in Oak Ridge: cultural conditions and economic conditions. Each will be discussed below.

Cultural Conditions Controlled by the Military

The circumstances surrounding the history of Oak Ridge have produced a unique culture, and one that has traditionally stifled environmental activism. It is a culture marked and formed by secrecy, isolation, and the ascendancy of science.

The ORR was constructed by the military as part of the Manhattan Project. It was one of three sites established for the development of the atomic bomb in World War II. Thus, the ORR was founded on secrecy and isolation. Secrecy was enforced through barbed wire fences and heavily guarded gates.

Entrance to Oak Ridge required a government-issued badge and was restricted to employees and their families. The three plants on the Reservation are still fenced-in and only authorized personnel with badges are allowed on the premises. The fences around the city came down in 1949, but the legacy of isolation remains.

But the secrecy and security extended far beyond the end of the war. The Cold War and the nuclear arms race with the Soviet Union began immediately. Secrecy and national security remained paramount. The Cold War was declared over in 1989 with the disintegration of the Soviet Union and the literal fall of the Berlin Wall. But secrecy had become habitual in Oak Ridge. An activist questioning a reservation employee on his occupation

reported this reply: "I can't answer that -- my brain is classified."

The combination of national security, secrecy, and geographic isolation produced a sense of "us versus them," or "insider versus outsider." Oak Ridge insiders feel a sense of oneness with their community and are reluctant to criticize it. One respondent compared the secrecy to an alcoholic family, refusing to acknowledge the elephant in the living room: no one discusses the problem and everyone works to cover it up. One Oak Ridge respondent said:

Somebody from Knoxville is considered an
'Outsider' lots of time -- 'Why should they be up
here in Oak Ridge -- it's none of their business.'

This us versus them mentality is learned at a very early age in Oak Ridge. The history and importance of Oak Ridge is taught in school. A respondent's best friend in Oak Ridge was told in grade school:

The people from the outside will make jokes about
you like, 'you glow in the dark.' But they are the
dumb people, they're the uninformed people.
They're the idiotic people and you are the smart
people and you know better.

Moving away from Oak Ridge for an extended period can jeopardize insider status. This is particularly true if an individual returns but does not work at the ORR. One couple interviewed had returned to Oak Ridge after several years away but were not associated with the Reservation. They were surprised by the change:

When we returned to Oak Ridge we didn't work for the plants. So we were in Oak Ridge but not of Oak Ridge. It's like a company coal town in Kentucky 100 years ago. You go to the doctor and they still want to know your badge number.

Organizers from outside environmental organizations find it very difficult to mobilize Oak Ridgers. Insider versus outsider status not only fosters quiescence but blocks outside environmental organizations from mobilizing and influencing attitudes. An organizer explained:

Oak Ridge has always had an us-them mentality for outsiders. People who come to Oak Ridge....are always regarded with suspicion. This makes [environmental] demonstrations in Oak Ridge more problematic.

Another important part of the culture in Oak Ridge concerns residents' views towards science and education. Oak Ridgers place enormous emphasis on education. Historically, Oak Ridge schools have ranked among the top in the state of Tennessee. Residents boast that Oak Ridge has a higher number of Ph.Ds per capita than any other city in the world. As a result, if a person is not a scientist and does not have a Ph.D, her/his creditability is questioned. According to an outsider:

Its a real insulated kind of community in Oak Ridge and, if you don't have a Ph.D its really a strike against you. They're really snobby.

Another respondent used a recent incident to illustrate the point:

At a recent ORHASP meeting, one Oak Ridger got up and started talking about that Mangano study and started to say 'Dr. Mangano.' Then he said, 'Whoops! He's not even a doctor.'

Science and education are stressed at an early age in school. Students are taught the value of science. They also learn to defer to highly educated, scientific types of people for information about the community. According to one respondent:

There is a definite class thing going on. Even in school you could tell there were the scientists' kids and everybody else. People have this attitude of 'Don't question your betters. These scientists know more than you do -- they have all of this education. They must know what they are doing.'

Scientific knowledge was the driving force behind the development of Oak Ridge and it has remained a scientific community. As a result, scientists are placed on a pedestal. Many residents feel that scientists can be trusted to monitor the local environment and "fix" any problems they identify. Environmental activists in and around Oak Ridge believe that the high levels of education and deference to science substantially contribute to environmental quiescence in Oak Ridge via residents' trust in expertise:

Oak Ridge is surrounded by this mentality that people are smart enough to figure out what to do with all of this pollution.

This comment was demonstrated in an interview with an ORR retiree, who

came to Oak Ridge with the Manhattan Project:

In my opinion, the people at the plants are pretty careful about things. Not that there hasn't been a mistake or two in the past. But they are, in general, pretty careful about things.

Another respondent suggested the emotional discomfort scientists might experience and how they might cope with it:

They are mostly intellectuals -- [and represent] the worst of what can happen when people know stuff that is not copasetic with what they believe. They are scientists and highly educated and they work out contorted ways in their heads to manage the information rather than give up their home or community.

A former scientist at the Reservation only recognized the discrepancy after leaving his position:

At the time I lived in Oak Ridge I had much more faith in the objectivity of scientists...[I thought] all of these scientists are subjecting themselves to the same danger. I don't think the human capacity for blindness and self-deception had quite registered with me.

The unique cultural experience in Oak Ridge contributes to an "environmental complacency." According to one ORR retiree and supporter:

Radioactivity is very mysterious. The truth of the matter is you get exposed to it all of the time. Things that people are not familiar with cause them to be scared. But, if they want to benefit from the technology, they've got to accept some risks.

People are taught to accept whatever goes on at the Reservation. A former Oak Ridger said, "At the time, I was lulled into the complacency that most everyone is that lives there." Another respondent said:

They have been brought up to accept it. Everyone around them accepts it. Its just part of the general mindset. You normally don't question the plants -- you just don't question authority.

DOE has waged a successful public relations campaign that has contributed to environmental quiescence. Many respondents feel that the local media steadfastly supports the ORR. According to one respondent:

Traditionally, the papers here and particularly the Oak Ridger, have been little more than press releases for the government. I think since 1983 the papers have tried to give the appearance of being tougher. They will run critical articles, but, if you look at the word budget for the articles, they are very short. You can't convey a lot of information in 750 words. They cut the news off at the source.

Another respondent agreed:

Basically still, Martin Marietta [corporate contractor Martin Marietta Energy Systems] is getting a free ride from the local press. They do not file FOIA [Freedom of Information Act] requests as frequently as they could. They don't go to the Reading Room [where declassified documents and other ORR materials are kept]. They are very susceptible to being used by Martin Marietta or DOE management.

As a respondent said, "The only Reservation news that is reported is, what

scientist has won which awards. Which contracts -- how many people are employed."

When the local media do cover environmental problems, they stress the harmlessness. A respondent described the media's predictability:

They've got a CD-ROM in their head and a WordPerfect macro for everything: 'no danger,' 'insignificant amounts,' 'not harmful to human health.' And they say that even before they check. When some of these releases occur, how can they say that before they have been to Analytical Chemistry?

Glossing over potential health effects is not new for the media. A respondent recalled a headline from 30 years ago:

In 1965 when they (the Reservation) lost, I think, 300 tons of mercury in one spill in one day, the local paper here had a headline that was joking on something about a 'boo boo' and talking about the costs of the mercury that was released -- but nothing about the environmental health effects.

Respondents believe that DOE has made a concerted effort to improve their public image. According to one respondent:

A few years ago in Oak Ridge, all of a sudden there were whistleblowers, the doctor thing, and the radioactive frogs -- all of these things making Oak Ridge look bad. But there was this coalescence that just happened, where all of these players came together to improve Oak Ridge's -- DOE's -- image.

A great deal of information about DOE activities nationwide has been

released in recent years. In Oak Ridge, officials have revealed mercury spills, radioactive frogs, and human radiation experiments. To combat the negative publicity, DOE has recently adopted a new approach -- "openness." Several respondents discussed DOE's new image. One respondent said:

DOE really found out they had latched onto something when they found out 'openness' was a better way to control people and get their way than being secretive.

Another respondent said:

I think they are bending over backwards to give the impression that they are working with the public. I don't think they are actually altogether crazy about the idea of working with the public, but they want to give that impression.

The appearance of openness may actually quiet residents' fears. A respondent describes how residents could feel reassured:

Now people are left with the impression that they are being honest. For example, 'We experimented on people and threw stuff in open ditches.' Now, when they come out and say stuff like the TSCA incinerator is safe, people respond, 'Well, they are being honest so I guess it is OK.' That's certainly the way the media has responded.

Since its inception Oak Ridge has had a culture of science, a culture of complacency. Residents are taught at an early age not to question the plants -- to accept what they are told. The culture of science has been passed down through the generations. This culture is an important factor in promoting

quiescence in Oak Ridge. Another factor that contributes to environmental quiescence is economic dependence.

Economic Development Controlled By the Military

After World War II, oversight of the Reservation was transferred from the military to the civilian AEC. In order to make Oak Ridge a self-sufficient community, the AEC offered financial incentives. In 1951, the AEC agreed to contribute \$1 million to local schools and hospitals plus additional money as needed for public services.

Over the years Oak Ridge leaders have attempted to diversify the local economy, but have generally failed. As a result, DOE, the AEC's successor, still contributes funds to the city. Because the Reservation is a Superfund site, leaders have been able to entice one industry -- environmental cleanup. But this places city officials in an awkward position. On the one hand, they must tell firms considering an Oak Ridge location, "Yes, we're polluted and we have federal dollars for cleanup money." But, on the other hand, they must assure the public that the pollution is not a threat to public health and safety. This situation reflects the state's contradictory functions. On the one hand, the state is the facilitator of capital accumulation. On the other hand, the state attempts to maintain legitimacy through democratic procedures. As a result, workers are

forced to believe they must choose between jobs and a clean environment.

As Kazis and Grossman (1982) describe it, environmental job blackmail occurs when a polluting industry is able to convince workers and other community residents that jobs and a clean environment are mutually exclusive goals. Workers choose to live with a contaminated environment rather than risk losing their jobs. The majority of the Oak Ridge population is directly or indirectly dependent on the reservation. An organizer for a local environmental organization discussed what Oak Ridgers said when asked about being active on Reservation issues:

Hey, we know they do surveillance on people. We know they figure out who you are talking to and we don't want to lose our jobs.

Another respondent said:

The history is that the community is essentially being blackmailed by all the jobs it's gotten from DOE. The tradeoff is,.. 'you take all this hazardous stuff.'

Oak Ridgers are in the same position as residents of a "company town," but members of the community's professional class do not perceive the situation in that way. According to a respondent:

I think they would be utterly insulted at that because they can't accept that they are as much controlled by a company town as a poor, blue collar worker in a mill town. But I believe they are. In fact, I think they are worse that way because they intellectualize it and distort it and contort it in their heads and don't

say bluntly like some blue collar worker, 'Are you kidding? -- its my job!'

Oak Ridgers have based the local economy on one industry, the nuclear industry. Over the years, attempts to diversify the economy have been largely unsuccessful. The one industry that has expanded in Oak Ridge is environmental cleanup, which is also tied to the nuclear industry. An organizer for a local environmental group discussed dependence on the ORR:

Back in the early 1980s, I found a statistic that showed that 2 out of 3 jobs -- 66% of jobs -- are either directly related to weapons facilities or service related. So, if they didn't supply the main contractor they supplied the subcontractor.

Another respondent emphasized indirect dependence of the Reservation on the local economy:

If Oak Ridge [Reservation] wasn't here then the restaurants wouldn't be here -- nothing would be here. I think that has a paralyzing effect on people. It's their livelihood.

Area residents realize that the ORR provides one of the most lucrative employment opportunities in the area. Those who have made their livelihoods there feel a sense of loyalty to their employer. Such factors often override residents' concern for environmental issues. One respondent discussed the loyalty workers have for the Reservation:

I think that even people who are retired or people who are more open minded about other

environmental issues feel it in their pocketbook first and feel some loyalty to this company that gave them all this employment for all these years.

Explaining the lack of environmental activism in Oak Ridge, one respondent said:

It comes down to a money thing. It's hard to vote against your pocketbook, and that's what a lot of people would have to do.

Thus, extreme economic dependence keeps Oak Ridgers quiescent. One respondent discussed her mother's fear of discussing anything pertaining to her work at the Reservation:

The whole thing about secrecy is so powerful because, for one thing, people in the plant feel like they can't talk about anything. My mother was like that -- so convinced that if she mentioned anything that was remotely about her job she would have all kinds of bad things happen to her.

The threat of job loss at the Reservation has had an obvious silencing effect on workers. But Reservation employees who discuss environmental problems associated with their work also face the fear of breaking the law, being unpatriotic, or even being a traitor. One respondent has worked closely with a number of former Reservation employees and he shared the following information:

I have talked to regular workers who, when they went to get Q Clearance, they had to sign a paper saying everything they are doing falls under the

Treason Act. When you sign that paper, you agree that you will be tried under espionage laws and convicted of treason and spend the rest of your life in jail -- or be shot.

The history of secrecy about your work dates back to the earliest days of the Reservation, when threats were less subtle. A respondent recalled:

I interviewed an old scientist that worked back during the Manhattan Project. When scientists were looking at classified documents, guards would actually stand four feet away with guns cocked.

The threats and fears associated with discussing Reservation issues have effectively silenced the majority of workers. Blatant, gun-to-the-head, tactics from the war era have been abandoned, but their legacy remains intact. Despite a loosening of control, workers still fear they might discuss the wrong thing. As a result, most play it safe and simply refuse to discuss Reservation issues. According to one respondent:

You will find that when you work with people in Oak Ridge -- 'Our brains are not compartmentalized into classified versus nonclassified.' So, instead of saying, 'I can talk to you up until this certain point,' they would just as soon not talk to you at all.

Area residents who are not economically dependent on the Reservation still feel inhibited from expressing grievances because of their friends' and family members' dependence. One respondent discussed the importance of family and how hard it is to speak out against their employer:

For most of us ordinary people, what we have that is important is our family. And so it's a real struggle in families to figure out how they can continue to like and not think badly against this person who they think is talking against their job. That's even a real common phrase....you hear that a lot, 'They are against my job.'

The fear of speaking out against the area's top employer has a clear controlling effect. The respondent continued:

It's a big concern, a big force of social control that because so many people have worked there in the past. When I was growing up, and in the years since I've been an activist, it is a very definite form of social control -- that you don't want people to think you are against their job.

Economic dependence on the military promotes another attitude that encourages quiescence: denial. Many residents simply do not want to hear about the environmental problems associated with the Reservation. One respondent talked about discussions she's had with friends:

I gave some friends of mine some factual data and they believed it. I said, 'if you really want to know what is going on in Oak Ridge'.... ...and they said, 'just keep your factual stuff -- we don't want to know what going on.' That is depressing, when people know you and believe you and they don't want to hear it.

A member of an environmental organization trying to organize around DOE issues in Oak Ridge told a story of a discussion she had with a potential supporter:

I was asking her to get involved, and that was simply coming to meetings to hear information, and I started telling her some of the stuff we had found out and she said in a shaky voice, 'I don't want to hear this. I don't need to know this. I am stuck here -- this is where I have to live. We're not moving and this is the end of the conversation.'

In many cases it appears that residents are aware of environmental problems associated with the Reservation. As the previous passages indicate, respondents' friends believed their stories about environmental problems, but did not want to discuss them. Concerned residents apparently have different ways of coping with the problem. Activists cope by discussing the issues and educating others, while others cope by refusing to address the issues.

A former respondent, who had been essentially run out of his job at the Reservation after he raised environmental concerns, discussed his own denial while living in Oak Ridge:

I was pulled into it -- that false feeling of security that things were OK. So I wasn't concerned when I lived there...After I left I found out that some old farm implements near our house were contaminated with low levels of uranium -- and that sort of thing didn't sit well with me. Also, some of the soccer fields and baseball fields that the kids played on, I know, after the fact, were heavily contaminated with mercury -- among other things. So, looking back on it, I wonder if it was a health risk.

Another resident discussed the community's refusal to acknowledge potential health effects from Reservation activities. According to the

respondent, the phenomenon was a combination of effective social control by the Reservation and residents' own denial:

Oak Ridge is so controlled that it's almost like beating your head against a brick wall. There are people that have been there since Oak Ridge started and it is their town and they don't want to talk about it -- they're not sick. What they don't tell you about is their kid that died that was two years old with some odd leukemia or their grandfather that is sick right now. They just shut their eyes to it.

As with the unique culture in Oak Ridge, economic dependence is a powerful force promoting environmental quiescence. The majority of residents are dependent on the Reservation. Those who are not dependent have friends and relatives who work at the Reservation. Given the culture and the economic dependence, why would residents get involved with environmental activism? The answer centers around health concerns. Health grievances break through the walls that have supported quiescence. The next section examines what happens when activism occurs.

Inhibitory Forces on Activism

Eventually, activism over health concerns did emerge. The military's response was to attempt to stifle the activism but without overt coercion. I turn now to the second major category of military control of environmental activism -- forces that inhibit activism once it has emerged. This type of social control

comes in several forms: control of the medical establishment; whistleblower cases; information control and overload; control of public meetings; and cooptation committees.

Control of Medical Establishment

Methodist Medical Center, the hospital in Oak Ridge, was originally owned and operated by the military. After the war, the hospital was turned over to civilians and now operates under a Board of Directors. The hospital's board of directors includes high ranking employees of the ORR, creating what some would see as a conflict of interest. Activists are aware of the conflict and one explained:

You have the brass at Martin serve on the Board of the hospital and on the boards of the banks and you get all of this cross connection -- the doctors' wives become real estate agents and this kind of stuff.

Trouble surfaced in 1991 after a new physician arrived in Oak Ridge. Oncologist Bill Reid was heavily recruited by the Oak Ridge hospital and accepted the position in late 1990. He immediately observed patterns of symptoms in his patients, including rare cancers. He tested many patients for heavy metal poisoning; every patient checked was positive.

Reid naively contacted ORR officials for information about the substances to which his patients may have been exposed. This call to the

Reservation set in motion a series of events that eventually ended his medical career in Oak Ridge. He was asked to leave his position at the hospital and, when he refused, was accused of being a drug abuser, a "quack" and a troublemaker. His parking privileges at the hospital were revoked, his office phones disconnected, and his nurses were asked to quit. The hospital ordered an investigation into Reid's medical competence which, regardless of the findings, would scar his employment record. His contract with the hospital expired in 1992 and was not renewed.

The medical establishment had made an example of the Oak Ridge oncologist. Several other doctors in the area quietly supported Reid, but none were willing to go public. According to one respondent:

What's been done to the Oak Ridge doctor is 'To make sure that no damn physician in this area will ever raise a voice of concern.'

Another respondent discussed the effect Reid's case had on other doctors in the area. He said:

[The doctors] will compensate -- go overboard to be more conservative to get the heat off.

Respondents discussed why certain people in Oak Ridge do not want to hear about health and pollution issues in Oak Ridge. A respondent discussed the problems caused when a doctor raises health concerns in a community economically dependent on the source of the concerns:

If you have a doctor stand up and say something is wrong with this town, the bankers don't want to hear it because there goes their collateral. The real estate agents don't want to hear it because there goes their commissions. And the people that live there don't want to hear it because there goes the resale value of their house.

Respondents with health problems believe that intimidation inhibits physicians in the area from diagnosing and treating their illnesses. Several respondents have been told by doctors "off the record" that health problems exist in the area. An area physician who spoke off the record with a respondent who asked why he didn't do anything about the situation, responded, "Don't be ridiculous -- they crucified Reid. What would they do to me?"

A number of respondents discussed their frustrations at their physicians' refusals to write diagnoses in their medical charts. According to one respondent:

They [doctors] are up to it, I think, to their eye teeth and a lot of them totally know what's going on....We've had some doctors say, 'I think you havebut I'm not going to put it down because your insurance company will get all upset.'

Respondents believe the physicians' refusal to diagnose their illnesses has nothing to do with insurance companies, but everything to do with threats, real or imagined, from DOE. According to one respondent:

There are no diagnoses -- nobody will diagnose anything...They don't want any of that showing up on a chart, so you don't get diagnosed.

Some respondents believe the failure to diagnose certain illnesses that could be related to weapons production is the direct result of government orders. Activists are investigating the possible secret order. An activist reports:

There have been some allusions that there might have been some type of order from the AEC or its predecessor that doctors are not supposed to diagnose certain illnesses.

Several respondents believe that their only hope of being accurately diagnosed lies in leaving the area. An activist was told by a doctor in Knoxville that she would have to go "outside the area to get diagnosed." She recalls the incident:

The doctor said, 'I like it here and I have no intention of moving and I have no intention of getting mixed up in the politics.' The doctor then said, 'I was in the emergency room once working years ago and some men in suits came after the doctor and accused him of a drug problem. I've seen this and I'm not getting anywhere near this.'

For several respondents, treatment from the medical community worsened after they made public their environmental and health concerns about the ORR. A former Oak Ridger discussed the reaction she received from the medical community after she went public:

I just decided to give it all up because you couldn't fight them. The medical community was closed-mouthed -- doctors that had been friends of mine for years and years, not only my doctors but friends, refused to even talk to me. It really hit hard in the medical community because they were the biggest part of the cover-up.

Another respondent who works in the medical profession discussed how much physicians are controlled:

Doctors used to be very independent -- very vocal, but are now under the thumb of the system. This is corporate medicine....They can run over you so fast -- the power structure. I don't think people realize that doctors are no longer free to be your spokesman.

While several respondents discussed the trouble of getting a diagnosis, others discussed having their medical records tampered with or "sanitized." Many of the respondents feel their medical records have been sanitized and some have evidence to support their claims. According to one respondent:

My health records have definitely been sanitized. That blows my mind -- just blows my mind. I felt more violated from that than I did the other because I can't put a face to it but somebody who's holding a record and changing it is definitely doing it on purpose.

Another respondent discussed her surprise when she found out her medical records had been sanitized. She said:

There wasn't much stuff down there and a lot of it is wrong. A lot of the stuff is left out. I went and

said, 'there is a lot of stuff not in there.' I said, 'the lupus discussions aren't in there.' He said, 'We've talked that to death,' and I said, 'Exactly, if you've talked something to death, I would expect it to be in here a lot.'

The physician then got defensive: "He said, 'They don't own me.' I said, 'I didn't say anything about anybody owning you.'"

Other respondents were surprised to find that the diagnosis in their medical records indicated that they had emotional problems. An activist who speaks out publicly about health concerns made this discovery:

And I got all of my medical records from my doctors and they didn't want to release them. And when I got them, I found out why they didn't want to release them -- they pretty much said I was crazy.

Several respondents with health problems have been abandoned by their physicians after they raised health concerns. Often, the abandonment involved long-time patients. One respondent recalled an incident involving her long-time physician and friend. She asked him to repeat a heavy metals test Reid had done and the doctor responded, "No problem, any physician can do these tests." The physician said he would contact her later in the week to schedule the tests. Three weeks passed without a word. When the respondent finally contacted the physician, he said he would not perform the tests and that, if she persisted in pursuing the metal poisoning diagnosis, he could no longer be her physician.

A respondent with life-threatening symptoms was abandoned by three different physicians after she discussed with each her treatment by Reid. A woman, with tears in her eyes, said:

I feel raped, quite honestly. I feel like my life has been taken from me and I had no choice and I have no recourse. And it didn't have to be, because I'm totally convinced that several doctors [could have done something]. If it's happening to me, it's happening to other people.

While patients are controlled and harassed indirectly through the medical establishment, DOE employees are controlled directly. In the next section I will examine DOE's treatment of environmental whistleblowers.

Whistleblower Cases

One of the most obvious ways that DOE has inhibited activism, or even public discussion of environmental problems, is through their handling of "whistleblowers." A whistleblower is someone who works for a facility and speaks out publicly about a problem. In this case, whistleblowers are people who work at the Reservation and have gone public with some of the environmental problems they have seen on the job.

Whistleblowers do have the option of taking DOE to court for damages, but DOE still has the upper hand. A court hearing can take an enormous amount of time, energy, and money, which often inhibits the whistleblower.

DOE, on the other hand, has an enormous legal staff, financial resources, and plenty of time to fight a whistleblower, whose allegations may incriminate the Department of Energy and the particular military installation.

DOE has formally stated that whistleblowers will be protected and not harassed, but this has not been the case in Oak Ridge. Some whistleblowers have charged DOE supervisors with harassment. One of the worst documented cases involved an Oak Ridge employee who went public with some of the environmental safety violations he had observed in his work. Subsequently, officials assigned him to a new office; they moved him into a room that housed radioactive waste materials.

The whistleblower was recovering from cancer and reservation officials were aware of it. Eventually, a health physicist told authorities that the man could not stay in the office with radioactive waste. He was then moved into another office, one that had been a mercury reclamation room. He was moved from an office with radioactive waste to an office with hazardous waste, in punishment, he claims, for his public identification of procedural errors at the plant.

Another Reservation employee claims he was punished after he and his brother measured soil samples for mercury levels in and around the reservation. The two were trying to collect enough data to obtain funding for a larger

research project on mercury contamination. But when Reservation officials found out about the samples, the employee was reprimanded, demoted, and eventually removed from consideration for a promotion for which he had previously been the prime contender. He was warned that, if he made public his information about the mercury contamination, it could adversely affect his brother's government career.

One respondent had this to say about the treatment of whistleblowers:

There is story after story of people being retaliated against, either losing their job or, you know, in this Karen Silkwood kind of way.

Another respondent discussed DOE's treatment of whistleblowers and its effective on silencing other potential whistleblowers. He said:

I think some of it is not just real fear, but real threats, and seeing that people have been examples of. And it certainly makes you think twice about how you are going to feed your family, if you give up this job making the best money that there is around here. So, I think it makes people have to make choices that don't always bring out the best in us.

Information Control and Overload

Another way DOE inhibits environmental activism is through information control and overload. Information on employee health records at the ORR is controlled by DOE. When requests for health records are made, it often takes

several months for a reply and even then the records are often inaccurate.

A respondent told the story of a friend who worked at the Reservation and was exposed to various hazardous substances throughout his career. He requested his history of radiation exposure and only received it after eight months. But the information was inaccurate. DOE health records documented his working at times he was not employed and, during years when he knew he was exposed to considerable radiation, the records showed no exposure to radiation. The respondent added:

That just makes you wonder -- Are they trying to hide something, or did they not keep the records? Apparently this is what they are going to use for the health study. Are they all wrong? How often does this happen? It makes you start wondering.

DOE's control of information is not limited to the health records of its employees. Stories by respondents indicate that DOE attempts to control all negative publicity about the ORR. One respondent related not being able to obtain a copy of the Time Magazine that contained a story about oncologist Bill Reid:

There was a story in Time Magazine [regarding environmental concerns raised by an Oak Ridge doctor] and I went to the bookstores to buy a copy and there wasn't a bookstore in the whole town that had a copy. I thought this was so strange, and [an employee] said somebody from DOE just came in and bought them all.

When information is made available to the public about environmental issues, residents are frequently innundated with information. This information overload can overwhelm even the most informed citizens. According to one respondent:

I think it is part of a plan to numb people and to keep people [from questioning]. It may just be well-meaning people in DOE that just want to let people know, but I don't believe it.

Residents also suffer information overload from the local newspapers. Respondents believe this serves to further numb people about problems at the plants. According to one respondent:

You open the paper everyday and you see some article in the paper about some shit they found somewhere and they don't know what it is and don't know what it does and don't know when it was buried and it is overwhelming.

Many DOE documents related to environmental issues are available to the public, but they are not written for the average person. The material is very technical and full of DOE lingo that makes it that much harder to interpret. For these reasons, environmental activists in the area are skeptical about DOE's "scientific" findings. According to one respondent:

I am firmly convinced that somebody can make science say about anything they want. As long as you can divorce people from their feelings and their emotions and fears -- and I think that is what happens to a lot of people who live in Oak Ridge.

The preponderance of Reservation related public meetings also contributes to the information overload faced by residents. A respondent discussed the difficulties trying to keep pace:

There is a meeting almost every night of the week and how does anybody keep up with that? Not one single group can keep up with it and not one single individual can keep up with it. And I think it is part of the whole factor for why people aren't more active.

Control of Public Meetings

In addition to the information overload, DOE's "public participation" meetings are handled in a way that deters meaningful participation by the public. DOE is required to hold public meetings for participation by residents. DOE uses these opportunities to enhance their own public image.

Many respondents claim to know that DOE personnel rehearse for public meetings by role-playing. Personnel are assigned the roles of specific environmental activists expected to attend the meetings. Rehearsals proceed with everyone in character. A respondent who worked at the Reservation and witnessed such rehearsals first-hand asserted:

They've actually rehearsed these things. DOE knew OREPA [a regional environmental organization] was going to be at a recent public meeting, so they practiced for weeks with people pretending to be OREPA. They knew every contingent.

Many residents in the Oak Ridge area simply do not feel comfortable participating in the DOE public meetings. People are not accustomed to standing in front of an audience and discussing environmental concerns, particularly when they are speaking to the professional class of scientists. A respondent explains the lack of participation by the majority:

It's not that people don't care. It's that they don't know how to participate. They don't feel like they can say what's in their heart when they're up against a bunch of scientists who do this sort of thing for a living. Or they don't see that it's going to help any.

Another respondent elaborated on this explanation by referring to local socialization practices:

You don't grow up thinking, 'I'm going to testify at a meeting.' It's not part of your experience, maybe it's cultural, maybe it's class -- but you don't grow up thinking about doing this stuff. Probably 98% of the people can't imagine doing that.

A woman discussed the fears that inhibit her from actively participating in DOE's public participation:

It is so easy to be made to feel stupid -- it is so easy to be afraid that somebody will ask you a question. And you may hold a deeply held conviction, but you might not know about this other thing over here. And what if they ask me about it?

Aside from the fears that inhibit meaningful participation, respondents feel that DOE makes concerted efforts to control the meetings. According to one

respondent:

I think that people who are less educated just give up and I think they are ridiculed into not participating. They are going to a meeting and are told that they just want the science -- they don't want the feelings and emotions.

Another respondent said that, in the DOE's public participation meetings, "The intent is to comply with the law -- they want to comply." But DOE effectively complies with the law while maintaining absolute power in the meetings. A respondent said:

After a while, you start to analyze who had the power to start with, how was the room set up so they would retain power, how were speakers encouraged or discouraged to actually get there and speak.

DOE does an excellent job giving the appearance of public participation, but veteran organizers know what is going on in the meetings. An activist commented on DOE's control of appearances:

I think there really is effort made to show it is very orderly, and all of that, and there is open participation, when all of those other things conspire to make sure there isn't open participation.

Residents were also discouraged from participating in the meetings because of the lack of return on their efforts. Respondents repeatedly described participating in various meetings and advisory groups and getting absolutely nothing accomplished. An activist complained:

You go to meeting after meeting and see that nothing gets accomplished. I think what we have to do as activists is change the balance of power.

Veteran organizers in the area argue that DOE's public meetings and advisory committees fail to accomplish meaningful results by design.

Respondents believe that real change does not occur by following DOE's meeting rules. According to one respondent:

It's never changed by asking civil questions, by following their rules. After being in it long enough, you can see that changes don't come by orderly questioning. You have to go through that, but its not what really changes things.

An activist continues the description of escalation in the conflict:

And that's why people try to take over the meetings and get into shouting matches, which is probably not the most productive way. But [it] is the only opportunity to get your points across.

In addition to the control of public meetings, DOE also controlls activists and potential activists by cooptation. In the next section I discuss this process the effect it has on activism.

Cooptation Committees

DOE controls these activists through "cooptation committees." This term refers to situations in which the people who are making the most noise and who are the community's most effective organizers are "coopted" by various

decision-making committees, advisory groups, and oversight committees.

Cooptation committees inhibit meaningful activism in two ways. First, as discussed in the previous section, participation in DOE sponsored groups rarely leads to meaningful results. Second, if activists are spending their time involved in DOE sponsored activities, they are taking away time they might have spent on organizing efforts with independent grassroots groups.

Many respondents discussed their frustrations over these committees.

According to one respondent:

They've got these groups all over the place. But that's just a way of coopting people so they can give them the 'illusion of participating,' when in fact they're not.

Activists are often ambivalent about participating in DOE committees.

One local organizer described her hesitation over participating in DOE committees:

Well, I thought I should start taking part in the Local Oversight Committee, citizens' this or the citizens [groups] that are put on by DOE, and express my opinion in that forum. Then I thought, 'No, I can't go to Oak Ridge and talk to some "facilitator" from DOE who is being real nice and polite and not listening to anything I say.'

Another activist described how valuable time was wasted participating in DOE committees. She emphasized the importance of working with local grassroots organizations. According to the activist:

It's more important to find people in Oak Ridge concerned with the issues and get together with them. [Its] a more important place to spend your time.

Another frustrated activist said:

It's a waste of time going to any DOE-orchestrated 'public participation process' meeting. They placate people, they pacify people, they toss them this little bone and, believe it or not, it satisfies people.

Conclusions

As indicated in this section, cultural hegemony was an important factor in explaining environmental quiescence in Oak Ridge. The military, from wartime necessities, was able to create a culture that supports the military's definition of political situations. Oak Ridgers' consciousness was also influenced through economic dependence. This dependence kept workers and residents from forming grievances that might have led to environmental activism.

When environmental activism has emerged in Oak Ridge, the military has inhibited it by keeping issues from being raised in the political arena that might have led to social change. The military has effectively kept issues from being raised through their treatment of whistleblowers, their control of public meetings, and their use of cooptation committees.

Emergent activism was also inhibited by the military's control of resources needed for mobilization. This was illustrated through the military's control of information and the medical establishment.

In the final chapter of this dissertation I will discuss the theoretical significance of the project and talk about future research questions..

CHAPTER VI

CONCLUSIONS

The United States military is likely the largest generator of hazardous wastes in the country and probably the world (Renner 1991). The Pentagon has generated more toxics annually than the top five chemical companies combined and nearly 100 military bases are currently on EPA's National Priority List. Despite the increased identification of environmental problems on and around military installations, community mobilization has been limited.

I argue that this lack of mobilization is due to the military's being the social control arm of the state and thus very effective at muffling opposition. The particular forms of social control used by the military have not previously been documented. I employed a case study of the Oak Ridge military reservation in Oak Ridge, Tennessee. For fifty years, residents of Oak Ridge have faced environmental contamination from military production activities. Yet resistance has only emerged recently.

Discussion of Findings

Drawing on resource mobilization and power theory, I constructed an analytical framework for examining the social control of activism. I argued

that social control is exercised in three ways: by cultural hegemony -- that is, by creating a culture that supports the powerful group's definition of relevant political situations; by keeping certain issues threatening to the powerful group from even being raised in the political arena; and by restricting resources needed to enter the political arena.

Data analysis has suggested the two latter strategies are difficult to distinguish. DOE has been able to keep issues from being raised in the political arena and has restricted resources necessary for mobilization. The agency's restriction of resources is a tactic that helps to keep relevant issues from being raised. In other words, people are kept from the resources which are necessary to raise relevant issues pertaining to environmental degradation in Oak Ridge. Consequently, my conceptual categories of social control are reduced from three to two, based on data analysis. These issues will be discussed in the following section.

Cultural Hegemony

A military culture has been formed in Oak Ridge around secrecy, security, and the ascendancy of science. In the early days of the Manhattan project secrecy and security were stressed because of building the atomic bomb. Secrecy was over what was being produced. Secrecy was enforced with armed

security guards and barbed wire fences and was reinforced through posters and billboards which warned employees not to discuss their work on the secret project.

Secrecy and security were expected to be loosened following the end of World War II, but almost immediately, the United States began a new arms race with the Soviet Union. Compartmentalization of work continued, so that each worker only knew what was needed to do her/his own particular job. Secrecy during this period surrounded how weapons were being produced and how many.

A major component of the Oak Ridge culture is a relentless faith in science and technology. Oak Ridgers are taught to defer to experts, the scientists. Many feel confident that scientists can be trusted to monitor the local environment and fix any problems they identify.

Oak Ridgers' consciousness has also been influenced through economic dependence. The majority of the Oak Ridge population is directly or indirectly dependent on the Reservation. Over the years Oak Ridge has attempted to diversify its economy, but they have generally failed. The one industry to come into town has been waste-related, enhancing the existing dependence on the ORR. The military has been able to convince residents that jobs and a clean environment are mutually exclusive goals. As a result, most residents

choose to live with a contaminated community rather than risk losing their jobs.

Cultural hegemony and economic dependence explain the long-term environmental quiescence in Oak Ridge. However, health grievances transcend the walls that have sustained quiescence. The recent emergence of activism centers around such health grievances and threatens production and government liability for health problems associated with environmental contamination. As a result, the military has taken strong measures to control this activism by restricting issues.

Restriction of Issues

One way that issues have been restricted is through control of the medical establishment. DOE's control has ensured that doctors will not give diagnoses that could raise issues associated with the ORR. As a result, residents lack scientific confirmation for their illnesses. Without scientific support it is nearly impossible for residents to have their health grievances acknowledged. This situation was changed when oncologist Bill Reid moved to Oak Ridge. As a medical professional, Dr. Reid legitimated the health concerns of area residents and provided a catalyst for collective action.

The restriction of issues is very direct with the harassment of DOE whistleblowers. ORR employees are in a position to stimulate public concern

around environmental problems at the plants because they work at the source. DOE is aware of the situation and works to ensure that ORR issues that could subsequently lead to greater public concern are not raised by employees. DOE effectively suppresses whistleblowers through harassment and intimidation. Since environmental concerns are not raised at the Reservation, they are overlooked in the community as well.

DOE also effectively restricts resources needed for mobilization. Collective resistance is generally formed through the exchange of information between potential activists. However, DOE effectively controls information, stifling potential mobilization by concerned residents. Information is controlled by limiting access to certain materials. DOE has been very proactive in its approach to information control. When information is given to the community, it is presented by scientists in a scientific forum.

DOE also restricts resources for mobilization through its control of public meetings. Members of grassroots organizations often meet at public meetings through the exchange of similar ideas. However, DOE stifles such potential mobilizing through its control of meetings. DOE public meetings are rehearsed and they know the issues that will be raised and can respond with the DOE party line.

Issues are also restricted through information overload. When DOE

provides documentation, they often inundate residents with information. The information becomes a blizzard and it becomes impossible for concerned residents to sift through all of the material on a particular issue. In addition, the information is often too scientific for the layperson to understand. Often in communities contaminated by corporations, citizens can get assistance from organizations like EPA, who will help make sense out of technical information. But in the case of the ORR, this is not possible.

Finally, issues are restricted through the use of cooptation committees. A number of committees have been established in Oak Ridge that give the appearance of significant public participation. Often, leaders of grassroots organizations are coopted into participation. This serves two functions: first, it reassures residents with grievances that something is being done about the environmental problems; second, by coopting relevant leaders, it takes time away from work that might have taken place at the grassroots level. If particular leaders refuse to participate they are often discredited by DOE as not wanting to actively participate.

Significance of the Findings

This research is significant in its theoretical contributions and its practical application. The research contributes to our theoretical knowledge. The

combination of power theory and resource mobilization theory proved to be a fruitful theoretical foundation for examining grassroots environmental movements, particularly those challenging the military corporate structure. The research contributes to the building of a theoretical foundation for the field of environmental sociology. It also has applications to social movement theory. Further research is needed to explore this theoretical perspective and its potential uses.

In terms of practical application and social relevance, Oak Ridge is one of only 17 DOE nuclear weapons production facilities. Some are located in communities that the military constructed, such as Los Alamos and Hanford. Others, like the Fernald plant near Cincinnati, were built in existing communities. With the military exempt from environmental laws until just recently, there is every reason to believe that many communities are in similar straits. If this research can spread a better understanding of environmental quiescence and activism on military installations, perhaps residents of other military-contaminated communities will become more active participants in the environmental decisions that are sure to be made in the coming years.

This research project has laid the groundwork for future related projects. Environmental contamination is well documented around Oak Ridge. For example, 2.4 million pounds of mercury have been released from the

Reservation and into the community. Yet, in Oak Ridge there are intelligent, educated, well-informed people diametrically opposed on what appear to be objective conditions. How are environmental attitudes formed and rationalized so that people living with the same objective conditions so opposed? To address this question I am co-directing an oral history project in Oak Ridge to be completed over the next year.

Another future project involves environmental racism. Blacks in the Oak Ridge community appear to have been disproportionately exposed to contamination from the Oak Ridge Reservation. Oak Ridge has a long history of racial segregation. After World War II, Scarboro, the predominately black community in Oak Ridge, was moved from the center of town to a less favorable location. The new Scarboro location has kept blacks closer environmental contamination from the reservation. Oral histories with blacks from the Scarboro community will be collected to explore their own perceptions on environmental racism.

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VITA

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