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Resource Development and Resource Dependency of Indigenous Communities: Australia's Jawoyn Aborigines and Mining at Coronation Hill

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Indigenous people and their communities are often critical actors in resource development networks dominated by large-scale private and public sector organizations. Development policies and projects have often been contentious in Australia because lands on which development has occurred or been proposed are frequently areas of spiritual and traditional significance to Aboriginal people. Conflicts over development are therefore intense, occur in the context of a history of social and political exploitation of Aboriginal people, and focus on issues of symbolic value, local autonomy, power, and participation in planning. This article applies social assessment models recognizing resource development as a power network to the analysis of the social impacts of development and focuses on the political involvement of local communities as basic to social justice. Research results suggest that social impact assessments should include assessments of community competency to participate in corporate resource development networks and should study the institutional basis of local participation.

Keywords Aborigines, community competence, economic viability, indigenous communities, mining, political efficacy, SIA, social vitality

Kakadu National Park is one of Australia's best known protected areas. A combination of spectacular land forms, the ecological value of its wetlands, and a continuing Aboriginal presence and cultural richness led to its 1981 listing as Australia's first UN World Heritage site. It is also noteworthy for a series of land use conflicts that have pitted local Aboriginal communities against developers representing regional, national, and international interests. The area has been the target of territorial and national governments seeking private and public sector development, including large-scale mining, tourism, agriculture (mostly cattle grazing), and defense establishments.

Since the 1970s, the region has been the subject of three national inquiries designed to resolve rancorous conflicts between developers, conservationists, and local Aborigines. Resource development projects have been subject to social and environmental assess-

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ments, and such assessments have been critical to understanding the social and environmental effects of national projects on local indigenous communities (Ross, 1990). The continuing presence and political importance of Aboriginal cultures illustrate the importance of conflicts between national policies based on dominant European culture, development planning influenced by powerful national and international business organizations, and local Aboriginal communities.

This paper reports findings from social impact research commissioned by a national inquiry to investigate the effects of mining on a small, welfare-dependent Aboriginal community (Lane et al., 1990). After years of bitterness over development in the region, the Australian government in 1989 charged its newly established Resource Assessment Commission (RAC)¹ to conduct a "single, coherent assessment of the economic, environmental and cultural considerations relating to land use" in the region (RAC, 1991, pp. 1–2). The inquiry was to examine land use conflicts involving diverse and culturally different groups with land use interests based variously on (1) the traditional cultural perspectives of local Aborigines, supported by Aboriginal associations and sympathetic organizations with social justice goals and organized politically at the regional and national level; (2) the profit goals of major Australian mining companies and the national and international financial institutions providing capital for development; (3) the economic, political, and regulatory goals of state agencies at the Northern Territory and commonwealth level;² and (4) the conservation goals of national and even internationally organized environmental associations.

The inquiry was the culmination of a resource conflict of national importance and was particularly concerned with proposed mining at Coronation Hill (Figure 1). A social impact assessment (SIA) was commissioned to study the social impacts of development, particularly in relation to the sociocultural impacts of mining on the local Jawoyn Aborigines (Lane et al., 1990). Debates over resource use in the area were long-standing and intense, and occurred within the context of a complex corporate framework of public sector agencies at the territory and commonwealth level, private sector business and financial organizations, and social and environmental movement organizations, as noted above. Any social assessment therefore had to address the range of interests and goals associated with resource development and the participation of competing interests in the corporate framework in which development plans and policies were contested. The approach reported here was focused on the different community, economic, and political interests that were part of the complex power network of planning and development associated with Coronation Hill.

The interests and perspectives of the Jawoyn Aborigines were central to the conflict. The assertion by a number of Jawoyn that Coronation Hill was a site of great cultural significance and could therefore not be mined was challenged by other Aboriginal people and by development companies and agencies. Disagreements among the Jawoyn meant that they could not be treated as a single, cohesive entity. Organizations outside the community, both public and private, and organized at the regional, national, and even international levels, were active in the dispute and were therefore also necessary objects of analysis. Because an important objective of the RAC's approach was to encourage and assist Aboriginal involvement, the study also dealt with the capacity of local communities to mobilize their resources (i.e., people, knowledge, time, money, outside support) and to respond forcefully and skillfully to development plans, either in opposition or in support.

To analyze the interests and participatory capability of actors involved in the dispute, the researchers used Strategic Perspectives Analysis (Dale and Lane, 1994). This social assessment technique is concerned with the delineation of values and interests of all of

Figure 1. Map of Coronation Hill.

the actors involved in a particular development proposal. Because a primary objective of the research was understanding (and facilitating) responses by local Aboriginal communities, a complementary dimension of the work was concerned with understanding the opportunities for Aboriginal participation provided by the formal structure of decision making and with analyzing those characteristics of Aboriginal community organization important to effective participation. A modified version of the Blishen-Lockhart (Blishen et al., 1979) model was used to help conceptualize and research community resources or capabilities associated with effective participation. Although researchers have argued that the model is appropriate for Australian contexts (Craig, 1990; Ross, 1990), it has been rarely used.³ Its major contribution to research is that it defines local communities as active participants in developmental change rather than as passive victims (Ross, 1990). Rather than highly technical models of assessment and decision making, where the agenda and decisions are largely shaped by professional specialists, Strategic Perspectives Analysis and the Blishen-Lockhart model emphasize the role of local interests, local knowledge, and community participation.

Logically and empirically, communities differ in their opportunities or capacities for mobilizing people to control interpretation of their history and to promote or resist developmental change. Understanding how and under what conditions local people mobilize to promote or resist change is both a classical and contemporary problem in sociological and political science research. Rather than models of individual participation, research now centers on relationships between group membership and collective action, and how local groups organize or mobilize community resources such as people, money, and knowledge to participate in change as organized groups (Nowak et al., 1982; Morris and Mueller, 1992).

Mobilizing resources is therefore critical to effective political participation. Local participation, in turn, is increasingly aimed at influencing decisions by external organizations planning or proposing large-scale resource and commercial developments (mining ventures or retail stores representing national chains; Humphrey et al., 1993; Gramling and Freudenburg, 1990). Communities vary in their capacity for affective mobilization and resistance of outside domination (West, 1994). Recognizing this variety, development policies and programs have sometimes provided institutional support for local participation in which access to information and influence by locals is explicitly part of the planning process (Rickson et al., 1995). In the present case, social assessment of the mining development at Coronation Hill was seen by the RAC and the researchers as a means both to inform decision making and to encourage and sustain Jawoyn participation in the complex organizational network that was part of the Coronation Hill issue. It was therefore necessary for the researchers to study characteristics of Jawoyn community organization that might explain local involvement or its absence. This approach assumes that resource planning is essentially a political process (McDonald, 1989) and draws on Geisler's (1982) suggestion that SIA can be used to increase the effectiveness of indigenous participation in resource development decision making (see also Gagnon et al., 1993).

This article considers the important and constructive role that SIA can play in the political decisions about the use and allocation of natural resources. Although the influence of SIA was affected by political power in the present case, social research findings were integral to the final decision in the dispute about mining in Kakadu. In contrast to the situation in the majority of natural resource decision-making processes in Australia, social scientific analyses were elevated to a position of central importance (Chase, 1990). This article will show how SIA can constructively contribute to decision making and, in doing

so, ensure that state and corporate intervention in indigenous domains is more sensitive to the demands of cross-cultural contexts. In addition, it will show that SIA can be a means of empowering indigenous communities and understanding the power relations that emerge (Gagnon et al., 1993). A major focus of this article is to examine and analyze indigenous participation in the politics of resource development.

Communities in a Corporate Framework

The focus on Jawoyn responses to mining on their traditional lands reflects an emerging research literature on resource-dependent communities (Humphrey, 1994). The literature centers on community responses to change and change agendas promoted by outside organizations. Large-scale national and international extractive industries, financial institutions, national governments looking for trade opportunities and foreign credit, and resource-dependent communities desperate for jobs and income are primary, if unequal, partners in modern resource development. The term *corporate* is used here to refer to social, political, and economic networks in resource development that link private and public national and international organizations with local people, social institutions, groups, and organizations. Bennett (1976, p. 3), in his concept of the ecological transition, saw this process as critical for indigenous communities: "The historical trend is now toward much larger systems, in which the behavior of tribal people or peasants toward natural resources is determined as much or more by social forces beyond their control as it is by internal concepts and needs."

The ability of local people, particularly indigenous people, to bargain effectively and protect their social and cultural autonomy in a corporate framework is a strategic dimension of community change and a necessary focus of social assessments of change. Scholars have pointed to the negative impacts of externally controlled development on local people using concepts such as internal colonization to describe the process. Snipp (1986, p. 464), considering American Indians, has argued that

the defining mark of internal colonization, economic penetration by outside interests, occurred after the marginal economic position of Indian tribes had been established by earlier legal and military action. From this perspective, internal colonization is an extension of practices that add economic dominance to the already subordinate political status of the tribes.

The community studies and social impact assessment literatures are rich with analyses of the social impacts of rapid resource development on localities in both the developed and developing worlds. Development goals applied locally are primarily those of private and public organizations outside the community rather than community groups. Low rates of participation by locals in development decision making means that knowledge derived from local history, culture, and experience plays a subordinate role (Butler-Flora, 1992; Hobart, 1993; Kloppenburg, 1991). However, the actions of transnational and national organizations are more important for understanding the form that development takes than the internal characteristics of a country or community (Caporaso, 1991). Although local communities are invariably an unequal partner in development processes, local autonomy is sustained by persistent social and cultural institutions, which often underpin a political struggle for influence.

The power of corporate resource developers is considerable, but other bodies of literature suggest that local social and religious institutions are deeply rooted in community social structures and tenacious in their ability to influence individual values and promote

participation in defense of those values (Rickson et al., 1995; Caporaso, 1991). Summers (1986), in his review of community research, argued that local sentiment, cultural institutions, and social structures respond, adjust, and reproduce themselves over time. These factors are a basis for adjustment to external change and community stability, a basis for protest against change, and a basis for influence on the pace of externally induced change.

In Australia, the tenacity of traditional Aboriginal social organization and attachment to land has generally withstood the dislocation caused by European colonization and settlement (Coombs et al., 1989). Furthermore, outside groups representing either government or private organizations can assist local collective action in a variety of ways, including financial support, provision of information, or direct political advocacy. Laws and policies requiring local involvement and government agencies charged with implementing such policies are significant institutional bases for local mobilization and influence (Rickson et al., 1995). Furthermore, as in the case reported here, social and environmental assessments are increasingly defined as means to encourage local participation and empower locals (Dale and Lane, 1994).

Resource-Dependent Communities

Outside organizations can set limits to social action, but they cannot determine specific behavioral outcomes. External domination of communities is a variable factor; power is best conceived as a struggle. Local power is therefore associated with local communities' capacities for mobilization so that they can successfully struggle and influence decisions. Resource-dependent communities are a special category for analysis. A continuing dilemma in situations where development is based on resource extraction is that localities tend to suffer most of the social and economic costs, but enjoy few of the benefits. Injustices are intensified when indigenous communities are resource-dependent and have deep-seated religious ties to traditional lands, and those lands are proposed sites for development. How people mobilize to protect their traditional lands and manage the effects of development or, alternatively, to promote resource development themselves is central to research literature in community studies, research on social movements, and SIAs. An emerging theme of this research is that power struggles in resource development should be analyzed in the context of a network of social and economic relations and that analyses of power struggles should include consideration of the capacities of local people to mobilize for resistance to development as well as the economic or social class differences among participants. Social class and access to capital are important but are only two of many factors related to understanding how a group can organize and act collectively to influence decisions about its welfare.

A discourse of economic growth "for national welfare" and capital accumulation goals of private corporations imposed on local people are significant dimensions of resource development in the corporate framework. Local sites chosen for development become focal points for conflicts originating in other places and other times (Rickson et al., 1995). Conflicts between resource conservation and resource exploitation, conflicts between traditional religious beliefs of indigenous people and the economic rationalism of corporate executives and government proponents of development, conflicts based on different conceptions of rights and responsibilities in democracy, and conflicts between local needs and national goals all emerge to affect debate and decision making (Connell and Howitt, 1991). Cooke's (1995) research supports this statement. She found in her study of the Malaysian rainforests that despite domination by outside forces, local knowl-

edges and social networks at the local level can respond effectively to externally generated change. However, research on resource-dependent communities, especially indigenous communities, has found that poverty and exploitation are common and related to local feelings of powerlessness, and that consequences of development are difficult to understand and predict (Humphrey, 1994). According to Gramling and Freudenburg (1990, p. 541):

Large-scale commodity developments of the magnitude permitted by modern industrial technology may create interdependencies so powerful as to be beyond the ability to be controlled—or perhaps even foreseen—by either the communities or the companies.

Indigenous Communities

Welfare dependency for many indigenous communities is related to resource dependency. The critical dimensions of welfare dependency are local powerlessness, loss of control and hope by local individuals, and a belief that conditions cannot be improved by concerted individual or group efforts. These were characteristics of the communities considered in the RAC inquiry (see Lane et al., 1990). Geisler (1982, p. 3) argued that, for indigenous people, “a certain amount of assimilation is necessary to prevent total assimilation”; Native Americans, for example, cannot now have separateness from broader corporate society because of their remoteness. A certain amount of assimilation is necessary so that knowledge and skills are developed to facilitate political involvement for protection and promotion of local interests. Cottrell’s (1977, p. 548) concept of community effectiveness or “competency” is directly applicable and is concerned with the extent to which:

the component parts of the community: (1) are able to collaborate effectively in identifying the problems and needs of the community; (2) can achieve a working consensus on goals and priorities; (3) can agree on ways and means to implement the agreed-upon goals; and (4) can collaborate effectively in the required actions.

When the traditional lands of indigenous people are resource-rich, as they often are, power and bargaining relationships between these people and others in the corporate framework are intensified and complicated by histories of exploitation and dependency (Snipp, 1986). The cumulative impact of dependency of indigenous people compromises their ability to respond to the discovery of mineral wealth. Conflict over economic benefits and costs of resource extraction, questions of “symbolic loss” (loss of culture), and other questions complicate both internal and external relationships (Snipp, 1986). Mining proposals and development on indigenous lands are a source of conflict in many parts of the world. Recent estimates suggest that 25% of mineral wealth in the United States, for example, is located on Indian lands (Gedicks, 1993, p. 41). The importance of the natural resources on indigenous lands has ensured that conflicts between indigenous people and resource extraction companies have often been acrimonious and the social impacts of development severe (Connell and Howitt, 1991).

Australia’s modern history provides a classic example of this process. Because Australia is dependent on extraction and international trade of natural commodities for much of its export income, mining interests have both economic and political power. Their influence is pervasive: Political party organizations and government bureaucracies are sub-

ject to continual lobbying by mining interests. Mining companies in Australia are politically mobilized, have direct and indirect access to politicians at all levels of government, employ large numbers of highly qualified scientists and engineers, lobby extensively in the pursuit of their sectoral goals, and, importantly, enjoy the support and sympathy of state resource departments and especially the economic rationalists in the Treasury of the Commonwealth Government (Pusey, 1991). However, formidable as it is, the industry's power to influence or dominate land use policy and decisions is limited by politically mobilized indigenous groups as well as national and international environmental associations. Because of laws and policies enacted by state and federal governments that require environmental and social impact assessments of mining projects, public discussion and conflict over the roles and responsibilities of the mining industry in Australian economy and society are now commonplace. Concerns about the social impacts of mining, supported by highly mobilized and politically effective movements promoting both Aboriginal land rights and civil rights, have contributed to the power of indigenous people living in resource-rich areas. Indigenous people in Australia are increasingly vital actors in resource use issues (Connell and Howitt, 1991).

SIA and Indigenous Communities: Using the Blishen-Lockhart Model

SIA has poorly served indigenous people in Australia (Lane and Dale, 1995; Howitt, 1989b; Chase, 1990). There are a range of factors to explain this fact, including the marginality of social scientists in impact assessment research (Chase, 1990), the dominance of development ideologies (Howitt, 1989b), and the lack of effective approaches to the task of assessing the response of indigenous communities to resource development and testing their vulnerability to impact (Lane and Dale, 1995; Lane et al., 1990). The lack of application of appropriate theoretical models means that indigenous SIA often resembles "the worst kind of empiricism" (Little and Krannich, 1988).

The present study of the sociocultural impacts of mining at Coronation Hill sought to apply an approach to test community response and competence (Lane et al., 1990). The model of community competency or vitality used in this study was developed by Bowles (1981) and Blishen et al. (1979; cf. Milbrath, 1989). Concepts such as social vitality, economic viability, and political efficacy are basic to their model of community responses to externally generated change. The Blishen-Lockhart model, developed for use in cross-cultural contexts, emphasizes the importance of these indicators in developing an understanding of community structure and process and of how effectively or competently communities can respond to externally generated change. In this model, *social vitality* is defined as the ability of a community to respond to problems. Internal adjustment of the community is to a large extent dependent on the degree of community integration or cohesiveness (Blishen et al., 1979). Highly privatized (socially isolated) individuals and communities may respond or adjust in a variety of ways, from showing strength and resolve to personal disorganization and pathological behavior.

The Blishen-Lockhart (Blishen et al., 1979) model defines *economic viability* as the degree to which communities and individuals are able to earn income from external agencies—either public or private. This aspect of community life is important because a community that is

entirely, or very largely, dependent upon one or two large, externally controlled sources of economic survival tends to lose, or be unable to develop, the ability to generate internal alternatives. . . . The very fact of dependency

tends to undercut the development of processes by which the community can evolve a sense of collective security, initiative and potency. . . . The individual's perception of vulnerability, apathy and powerlessness within a privatised and uncaring community is much reinforced. (Blishen et al., 1979, p. 54)

One of the key variables in the maintenance of poverty is the capacity of a community to mobilize according to its needs, problems, and aspirations. *Mobilization* is used in this context to refer to the capacity of social groups to mobilize available resources (including knowledge, financial resources, and human resources) to achieve their goals (Zald and McCarthy, 1987). The Blishen-Lockhart model recognizes that political efficacy—that is, the level of participation in political processes both internal and external to the community—is a key factor in community response to induced change. Closely linked to the social vitality of the community, *internal participation* focuses on the level of debate and discussion, and whether divisions within the community preclude cooperation (Nowak et al., 1982) at the interpersonal, interfamilial, and intercommunity levels. Political efficacy in terms of external relations is crucial if a community is to gain access to support and resources from outside agencies, organizations, and communities.

The Blishen-Lockhart model was effective in the social impact research considered here in that it provided a framework for the collection and interpretation of data and a focus on community response and competence. In this way, the approach was premised on the notion of indigenous communities as active participants in the change process, rather than passive victims (Ross, 1990).

Case Analysis: Kakadu, Coronation Hill, and the Jawoyn People

Conflicts over mining at Coronation Hill were in the political context of intense and continual debates over resource development, conservation, and the land rights of Aboriginal people. This was an area in which the traditional cultural interests of Aborigines were evident and stable over time and had gained expression through land rights legislation and co-management of national parks. The Jawoyn, however, whose traditional homelands were the subject of the dispute, were largely disenfranchised from their land, although they had for years argued for their return. In addition, the ecological values of the area, having been recognized as being of international importance, ensured that an influential coalition of environmental groups was prominent in the conflict. The resource development industry completed this trio of interests. The land, in addition to the mineralization directly under dispute (which was considered to comprise gold, platinum, and palladium of substantial value) contained unexploited uranium reserves and significant bauxite deposits.

The dispute should also be seen in the context of an ongoing conflict between the politically conservative Northern Territory government and a relatively liberal federal Labor government. Organizations representing each of the above perspectives were part of the inquiry. Political involvement required that individuals, usually organizational representatives, have access to capital resources, professional expertise, and political support derived from organizational power. Participants with these resources could actively counter knowledge claims of others about the history and cultural legitimacy of Jawoyn religious beliefs, interpretation of law and policy on Aboriginal land rights, and the economic benefits and costs of mining. Other points of controversy included environmental values in the area, the social nature of local Aboriginal communities, and the credibility of social and environmental assessment researchers.

Applying the Strategic Perspectives Analysis (Dale and Lane, 1994) model of social assessment to development proposals focuses researchers on divergent interests and goals, local participation, power relations, and probable conflict between participants. The probability of intense and rancorous conflict over development issues inevitably affects research design, conduct of the research, and implementation of findings (Rickson et al., 1990). This case was a notable example of that. Throughout the entire course of the social impact research, 134 articles in four leading Australian newspapers gave voice to the debate. Headlines such as "Mining for the Truth" (1991), "Sacred Custodians Fight Modern Needs" (1990), and "To Mine or Not to Mine" (1990) intensified the debate. Extensive coverage on radio and television communicated different sides of the issue to an interested public.

Public comments and competing discourses illustrated the national importance of the debate and had an effect upon the research in two ways. First, the debate provoked existing tensions between Northern Territory and federal agencies. Because of the conflict, several agencies with significant databases on local populations refused to cooperate with research staff, ensuring problems in constructing a comprehensive description of existing communities. Second, national press coverage and debate served to increase significantly the level of pressure on the Aboriginal people whose lands were subject to the dispute.

The proposal to mine Coronation Hill represented a further development proposal in a region that had already undergone extensive developmental change. Previous commentators on the social impact of the trajectory of change precipitated by rapid resource development had observed that:

the current civic culture in the Alligator Rivers Region is one in which disunity, neurosis, a sense of struggle, drinking, stress, hostility, [fear] of being drowned by new laws, agencies, and agendas are major manifestations. . . . This is a society in crisis. . . . Further projects will see Aboriginal communities submerged and discounted in the rush to development. (Australian Institute of Aboriginal Studies, 1984, p. 303)

The Kakadu (or Alligator Rivers region) of the Northern Territory is an excellent example of how quickly a previously remote region can be incorporated into the global economy (after Howitt, 1989c). Although Aborigines of this area have been significantly affected by rapid development, sensitive application of the comanagement concept to Kakadu National Park has brought substantial benefits to the traditional owners of the area (De Lacy, 1994).

The history of the Jawoyn Aborigines throughout the European settlement of Australia's Northern Territory likewise provides a case for application and evaluation of the Blishen-Lockhart model of social assessment. Its three principal indicators (social vitality, economic viability, and political efficacy) of community autonomy were relevant to analysis of the mining proposal and the ensuing conflicts. As the model suggests, the three indicators were used to develop an understanding as to whether the community was likely to be prone or resilient to adverse impact, and whether it would be receptive to positive impacts that may be associated with a development.

Social Vitality

The Blishen-Lockhart model views social vitality as the degree to which individuals and communities can effectively react to imposed problems—in our terms, problems imposed by the actions of private and public organizations. Social vitality, as Blishen-Lockhart et

al. have defined it, implies an ability to act, to be proactive rather than just reactive. Evaluation of social vitality must, in part, draw on the history of social relations. For the Jawoyn, like many other Aboriginal groups, the process of contact and dispossession was often brutal. Although Aborigines have suffered exploitation and brutality from the earliest days of European contact, their greatest loss of individual and community autonomy has been relatively recent in the Northern Territory (Collman, 1988). With few exceptions,⁴ the Jawoyn have been marginalized from much of the modern political and economic life in the Northern Territory—a marginalization that is a direct extension of earlier colonial administration.

The marginality of much of the Aboriginal population of northern Australia is responsible for the vulnerability of that Aboriginal communities to rapid change (Howitt, 1989a; AIAS, 1984). The town of Katherine, in the Northern Territory, is a case that illustrates this concept of vulnerability. It has a European population of 6,000 and is a service center for pastoralism, mining, and tourism in the region. The Royal Australian Air Force has a base not far from the town. It is home to about 600 Aboriginal residents, about one-half living in town and the rest in camps on the town's fringes. There are transient Aborigines who come into town for shopping and other services or for social interaction. The European population enjoys good health, high levels of employment, and a reasonably affluent lifestyle. The Aboriginal population is characterized by poor health, low levels of employment, and high levels of substance abuse. In 1983, it was reported that there was minimal interaction between the two groups, often with marked friction and poor cooperation (Sutton Partners, 1983). It was reported in 1984 that there was a small but hard core of racist attitudes toward the Aboriginal people (Kinhill Stearns, 1984). The attitudes were related to conflict over local resource issues.

Individual and community adjustment to change are related to community integration or cohesiveness (Blisshen et al., 1979). Communities in which there are large numbers of "highly privatized" (socially isolated) individuals can be expected to have difficulty mobilizing for effective adjustment to take advantage of development opportunities. There are a variety of behaviors exhibited by indigenous people, or any local people, in rapid development situations; these behaviors range from initiative, strength, and resolve to personal disorganization and pathological behavior. Similarly, as Cottrell (1977) has noted, a range of community responses depends on the existence of cultural and social resources that allow internal collaboration and mobilization to define problems and alternative solutions, gather knowledge, organize it, and communicate it to the outside. There are individual and community resources that are basic to effective political mobilization and that serve to enhance the influence that indigenous communities have over decision making in the corporate framework of resource development (Nowak et al., 1982).

Community adjustment to development, which may include successful rejection of a project, is likely to be more constructive in a social environment where there are strong social support networks, local role models, and social interdependencies, including institutional integration with mainstream society (Blisshen et al., 1979). Another important aspect of the way in which a community may respond to imposed change is dependent on the locus of community authority and the degree to which local institutional authority structures are affected by change. That is, in a highly privatized community in which internal authority structures are important, change that undermines this authority and these individuals is likely to have important cumulative effects throughout the community.

The focus of the social impact study under consideration, the Jawoyn, like many Aboriginal groups in the region, exhibit a high level of internal integration. There is a strong sense of Jawoyn identity—of being Jawoyn and of being Aboriginal. Although the

Jawoyn live in a series of spatially disparate communities and camps, they exhibit multiple ties, including kinship ties and community ties, together with bonds derived from being Jawoyn. There is, however, a diversity of opinion on a range of issues, including mining, and unanimity of opinion is not common. Conflicts over impending developmental change reflect deeper social divisions among the Jawoyn, including disagreements over issues such as the role of tradition and the relevance of belief systems.

The rates of crime and health patterns in the community are also indicative of a community's social vitality. The Jawoyn community, at the time of this study, had high rates of criminal behavior, which was exacerbated by high levels of alcohol and substance abuse. Table 1 shows that in 1990, 47% of Aborigines from the Northern Territory were either imprisoned or on remand for "crimes against persons" including murder, manslaughter, and sexual assault; 23% were imprisoned or on remand for "crimes against property" including robbery and breaking and entering; 11% were incarcerated for driving under the influence of alcohol.

In 1986, in the most recent census, the Australian Bureau of Statistics reported that 68% of the Northern Territory prison population was Aboriginal, whereas Aborigines made up only 22.5% of the total population of the territory (Australian Bureau of Statistics, 1988).

The Jawoyn, like the other major Aboriginal groups in the region, suffer a community health profile more characteristic of Third World populations than of the wealthy First World. Table 2 illustrates common health problems among Aborigines by age. For infants, there is a high risk of premature birth, sexually transmitted disease infection, and low birth weight. During the first four years of life, children are likely to suffer from scabies, gastroenteritis, pneumonia, meningitis, and chronic nasal infection. From four to ten years of age, children are at high risk of rheumatic fever, which can have long-term effects. Children are also likely to suffer from ear discharge, a condition that, if untreated, can lead to reduced hearing and poor educational achievement.

Lifestyle factors are significant as children ages 12 to 15 contract various sexually transmitted diseases. Males from about the age of 15 begin to consume alcohol, and there are a host of alcohol-related illnesses. Motor vehicle accidents and violence, both inside

Table 1
Northern Territory Aboriginal imprisonment and
remand status by type of offense, 1990 ($n = 253$)

Offense	%
Crimes against persons (murder, manslaughter, assault, and sexual assault)	47
Crimes against property (robbery, breaking and entering, car theft, motor vehicle use)	23
Crimes against civil order (drunk driving, vehicle use)	11
Justice procedures	1
	7
Other	2

Source. Adapted from Lane et al. (1990).

Table 2
Common problems among Aboriginal people in age

Health problem area	Babies (%)	Preschool (%)	School age (%)	Adults (%)
Nervous system/sense organs	21.7	36.3	42.0	10.2
Respiratory	36.8	18.5	5.7	11.0
Injuries	2.8	8.9	13.6	12.4
Infective/parasitic	18.9	11.3	8.0	8.4
Skin	2.8	9.7	18.2	8.8
Circulatory	—	—	—	12.5
Supplementary	4.7	—	—	—
Digestive	5.7	5.7	4.5	—
Blood disease	2.8	—	4.5	—
Nutritional	—	5.7	—	—
Ill-defined	2.8	—	4.5	—

Source. Adapted from Lane et al. (1990).

and outside the family, are two important sources of alcohol-related injury. From about age 30 on, poor diet, high tobacco and alcohol consumption, and poor living conditions threaten health and longevity. For example, the level of tuberculosis in Aboriginal communities in the region is 375 in 100,000. The figure nationally in Australia is 4 in 100,000. There are high levels of obesity in this age group, increasing risks of hypertension and stroke. Diabetes levels are reportedly high, and complications of renal failure are common.

Health as a fundamental factor in quality of life and social vitality is a critical dimension of profiles of Northern Territory Aboriginal communities. It is at once a symptom of the pressure and problems faced by Aborigines and an important determinant in the perpetuation of these problems. The system of health delivery has failed to reverse the condition.

In the present study, it was possible to discern several important ways in which Jawoyn society was vulnerable to impact. There were, first, a plethora of indicators of social disorganization in the communities in the region. The levels of alcohol and substance abuse, as well as crimes of violence, demonstrated that, although certain aspects of traditional social organization were enduring, serious social and personal disorganization had resulted from changes in the region. Pathological behavior in these communities demonstrated that social support structures were failing to provide a mechanism for total community and individual adjustment. Further dramatic impacts on Aboriginal belief systems seemed likely to produce similar effects: resilience to impact in some individuals, facets of sociocultural impact, and profound vulnerability for many in the community to social disorganization and pathology.

A further cause of Jawoyn community vulnerability was that the individuals who would be most profoundly affected by mining development were the most senior and authoritative Jawoyn people. The poor health profile of the community was manifest in the very small number of people over the age of fifty. Jawoyn leadership was held, at the time of this research, in a small group of people who operated in highly privatized social environments: the communities and camps in which they lived were their world. Personal

crises and disorganization precipitated by development affecting traditional belief systems were likely to have considerable ramifications for the entire Jawoyn community. The Jawoyn had already undergone significant cultural loss because of the changing population and economic base of the area. With mining, tourism, and the establishment of the military base, the area had changed from a wholly Aboriginal domain, or one in which Aborigines could maintain cultural and social isolation, into an almost complete incorporation into a European world. In short, SIA research, and in particular the use of this model, suggested that the entire community was vulnerable to change precipitated by a crisis among senior Jawoyn.

Cultural isolation, to a degree, is an indicator of a group's power to withstand outside pressures for cultural and social change. However, adjustment and adaptation in a social environment that is poorly integrated with mainstream society must occur via local support systems, and if these are impaired, then personal maladjustment and disorganization can occur. Assimilation and accompanying acculturation have had significant impact on the Jawoyn (cf. Geisler, 1982).

Economic Viability

Aside from first contact with Europeans and an ensuing history of relations between Aborigines and Europeans, a distinctive impact on Northern Territory Aborigines has been the loss of autonomy. The settlement of northern Australia occurred under circumstances quite distinct from those in southern Australia. Throughout the Northern Territory, non-Aboriginal economic activity remained small-scale and diverse. Large-scale investment in mining, cattle stations, and agricultural projects proved largely unrewarding. Until recently, mining was characterized by booms; even though these involved large numbers of people moving through the area, non-Aboriginal settlement was transitory. Neither permanent population increases nor extensive service industries were produced. Northern Territory economic activity has largely occurred through the actions of individuals with little or no capital who have pursued whatever economic opportunities have emerged. Consequently, people who would have been marginal to economic life in much of Australia have played a central role in Northern Territory development (Levitus, 1982).

The experience of the Jawoyn illustrates the combined effects of resource and social welfare dependency. It offered increased cash incomes and independence for individual Aborigines, but the welfare system for Aborigines developed by the commonwealth government meant that Aboriginal daily life became a central concern of welfare agencies. Limited employment opportunities after the introduction of minimum wages for Aborigines contributed to the development of personal pathologies such as alcohol consumption as well as European perceptions of Aborigines as drunken and unreliable.

The Blishen-Lockhart model defines economic viability as the degree to which communities and individuals are able to earn income from external agencies—either public or private. Economic viability is clearly associated with both social vitality and political efficacy. In resource development, the primary benefits of resource extraction flow mostly to established extracommunity industries or industrialized regions that use them as inputs to industrial processes (Freudenburg and Gramling, 1994; Humphrey et al., 1993; Humphrey, 1994). Community economic dependence is a significant focus of sociologists and economists because a community that exhibits high levels of economic dependence is often unable to generate alternative economic opportunities (Blishen et al., 1979).

Lane et al. (1990) have observed that the economic viability of the communities in the region was, at the time of the research, extremely limited. There was heavy dependence on welfare payments, because 80% to 90% of all Aboriginal adults in the region were unemployed. Approximately 65% of the Aboriginal population accrued an annual income of less than AU \$15,000 (Table 3). Transport, apart from being extremely limited, was expensive, with those wishing to travel from Barunga, an Aboriginal settlement, paying an AU \$150 taxi fare to Katherine. In addition to high welfare dependency, Aboriginal people living in camps and communities in the region paid up to 28% more for standard grocery items than the price of these same goods in east coast Australian cities.

New possibilities for employment and economic opportunity were extremely limited and generally confined to whatever benefits capital intensive mining development might bring. Involvement in tourism and protected area management, although prospective, was limited to a small number of Aboriginal groups (Altman and Smith, 1990). Optimistic statements by project proponents about Jawoyn employment were called into question when compared with the record of actual Aboriginal employment in the Australian mining industry. Less sanguine predictions about indigenous employment in the Coronation Hill mining project were presented in the analysis for this article. The last national study of Aboriginal participation in the mining industry showed that indigenous Australians made up only 2.6% of the total mining workforce, even though they were the dominant population in areas where mining occurred (Cousins and Nieuwenhuysen, 1984). The record of employment within national parks (Territory and Commonwealth) although limited, was better (Altman and Smith, 1990). Indeed, the much-heralded benefits of Aboriginal participation in conservation were limited to those groups whose lands had been incorporated into the national park estate.

The economic viability of Aboriginal communities was substantially undermined by dependence on one source of income. The possibility of royalty payments from mining was the only likely new source income to local Aboriginal communities. The choice facing local Aboriginal people therefore, was a difficult one: the substitution of welfare dependence for dependence on mining royalties. In itself, and as Blishen et al. (1979) have

Table 3
Annual income

Income (Australian dollars)	Non-Aboriginal		Aboriginal	
	<i>n</i>	%	<i>n</i>	%
\$0–\$9,000	2,839	30.5	3,183	57.5
\$9,001–\$15,000	1,388	14.9	4,060	19.2
\$15,001–\$22,000	1,823	19.6	324	5.9
\$22,001–\$32,000	1,228	13.2	86	1.6
\$32,001–\$40,000	406	4.4	4	0.1
\$40,001–\$50,000	286	3.1	0	0.0
Not stated	1,336	14.4	867	15.7
Total	9,306	100.0	5,526	100.0

Source. Adapted from Lane et al. (1990).

noted, dependency forms a vital link with diminished social vitality, and ultimately with reduced political efficacy. Economic dependency, the likely economic future of most of the Aboriginal communities in the region, would remain an important contributor to diminished social vitality and poor quality of life.

Political Efficacy

The competency or effectiveness of a community to respond to local problems, as we have argued, is based on its ability to mobilize and influence decisions affecting local people. Some of the most important decisions affecting local economies are increasingly made by outside organizations, mining companies, and state agencies, and are more in line with the interests of the organization than the needs or interests of the local people. The Blishen-Lockhart model (Blishen et al., 1979) recognizes that political efficacy—that is, the level of participation in political processes both internal and external to the community—is a key factor in community response to induced change. Closely linked to the social vitality of the community, internal participation focuses on the level of debate and discussion at the interpersonal, interfamilial, and intercommunity levels. Political efficacy in terms of external relations is crucial if a community is to gain access to support and resources from outside agencies, organizations, and communities.

As noted earlier, there was considerable debate and discussion at all levels in Jawoyn society over issues relating to development. This was an important indicator of social vitality and a capacity to adjust to imposed challenges and problems. In terms of participation in political processes external to the community, the Jawoyn were also effective. The antidevelopment section of the community was able to mobilize, form a number of community response organizations, and gain the support of both government and nongovernment organizations. These representative organizations were successful in focusing national attention on Aboriginal concerns about mining development in the area. The prodevelopment faction, on the other hand, successfully sought assistance from a range of organizations to promote its cause. Although one must certainly be cognizant of the many accusations, and the possibility, that external agencies and organizations pursued and manipulated Jawoyn opinion to their own ends, the Jawoyn people themselves did mobilize and articulate their various concerns and aspirations concerning developmental change in their region. Indeed, an important aspect of the fieldwork component of the social impact study was concerned with discerning the range of perspectives that existed.

This is not meant to convey the impression that there were no difficulties in the local Aboriginal people having their views heard. They were constrained by the remoteness of their homes, by cross-cultural difficulties in communication, and by other factors such as education (Table 4), financial capacity to participate, transport, and the like (cf. Nowak et al., 1982). The central point, however, is that, despite the substantially diminished social vitality of these communities and the number of important constraints on political participation, the Jawoyn were central to a national land use inquiry in the Kakadu region and ultimately central to its resolution (see RAC, 1991; Toyne, 1994).

Using the Blishen-Lockhart Model in SIA

The social impact research concluded, on the basis of the above analysis of community response, that there was little doubt that the Jawoyn were particularly susceptible to a range of social effects resulting from project development. Although the communities in the region demonstrated some positive vitality and surprising political effectiveness, there

Table 4
Level of qualification

Level of Qualification	Non-Aboriginal		Aboriginal	
	<i>n</i>	%	<i>n</i>	%
Tertiary qualification	995	10.7	35	0.6
Trade certificate	1,209	13.0	40	0.7
Other certificate	1,196	12.9	23	0.4
No qualification	4,461	47.9	3,732	67.5
Not stated	1,444	15.5	1,699	30.7
Total	9,305	100.0	5,529	100.0

Source. Adapted from Lane et al. (1990).

remained several important indicators of the stress and disorganization that were the result of cumulative impact on traditional social organization and belief systems. It was suggested that those aspects of Jawoyn communities that demonstrated some degree of social vitality would be important in impact mitigation strategies. Despite the enormous changes in the region over the previous 100 years, Jawoyn culture had shown a tenacity in many ways. The use of the Blishen-Lockhart model showed, however, that the Jawoyn were also vulnerable to impact, particularly to the processes of sociocultural change that the massive changes to their domain had wrought.

The Blishen-Lockhart model has been recognized by a number of commentators as being a useful tool in SIA, particularly in cross-cultural contexts (see Craig, 1990; Ross, 1990). The model has been used in social impact research involving impoverished, welfare-dependent Aboriginal communities and has been particularly effective in separating the important threads to the maintenance of poverty from the complex matrix of factors that establish it. Its use in the present study was preceded by an application of Strategic Perspective Analysis (see Dale and Lane, 1994), which provided a careful delineation of the values and interests of all actors involved in the dispute. Following this delineation of the range of actors and their interests involved in the dispute, the model was used to understand the competence of the Aboriginal community to respond to development-induced change. If SIA is to be an effective tool in mediating between the global economy and local communities, the ability to ascertain relative levels of community competence is essential. The present authors suggest that the Blishen-Lockhart model can inform SIA research by providing insights into likely community competence and response.

Conclusion: Aborigines, Coronation Hill, and SIA's Role in Political Decision Making

When Prime Minister Hawke gave the RAC its terms of reference to conduct a comprehensive inquiry into land use and development in the Conservation Zone incorporating Coronation Hill, the debate over mining in the area, which was often extremely rancorous and politically contentious, had been simmering for years. Public debate centered on the area's environmental significance and potential damage from mining. However, by the time the RAC issued its final report in 1991, the parameters of debate had widened con-

siderably and were concentrated on concerns about the general social impacts of mining and, in particular, the potential impacts on local Aboriginal belief systems and specific consequences for the Jawoyn. Indeed, the stability of this Aboriginal community had become a central and politically strategic issue (see Toyne, 1994).

The changing course of the debate had much to do with the original terms of reference issued for the inquiry. These terms required that the RAC consider the cultural values of the area as well as its environmental and economic values. The RAC undertook a systematic investigation of the cultural values of the region (Keen and Merlan, 1990), as well as investigations into the potential economic impact of mining on local Aboriginal people (Altman and Smith, 1990), in addition to the SIA, which, in part, forms the basis of this paper. Also, the RAC's commitment to public involvement saw it provide opportunities for the Jawoyn to address the commissioners of the inquiry directly in meetings held in most of the towns and camps of the region.

Because of the RAC's formal terms of reference and the serious and considered response of the RAC to their brief, the concerns and interests of Aboriginal people were legitimized as critical to the ensuing debates and central to political decision making. All too often, Aboriginal groups in Australia have not had the opportunity to participate as powerful stakeholders in decisions about mining development (Lane and Dale, 1995; Chase, 1990; Howitt, 1989b). Indigenous interests are often marginalized in environmental and even social assessment, suggesting that the ideological commitment of proponents and agencies of the state to development serves to marginalize indigenous communities and their interests.

The fact that the Jawoyn were not marginalized and were able to influence decisions about mining at Coronation Hill is a product of the two factors described above as well as the capacity of the Jawoyn to mobilize the support of other organizations and groups and to articulate their views effectively in regional and national political arenas. In part, the success of the Jawoyn and their supporters in participating in the debate was facilitated by the seriousness with which the RAC viewed the Aboriginal dimension. In part, it was facilitated by the many fora the RAC provided for hearing the Jawoyn perspective. A third factor associated with the effective political participation of the Jawoyn was that a number of well-resourced Aboriginal organizations, including the Northern Land Council, viewed the Coronation Hill dispute as representing something of a watershed in their long-term battle for recognition of indigenous rights, particularly where these rights conflicted with mining proposals. These organizations contributed significant resources to ensuring that the views of the Jawoyn were heard.

The social impact research partially reported in this paper played an important role in the recommendations provided by the RAC to the government. In its final report, the RAC detailed findings on the social impacts of mining on indigenous people (RAC, 1991). The report accepted the data and analyses of anthropologists and social impact assessors as both valid and central to the inquiry. This situation was in stark contrast to the manner in which social impact information is sometimes treated (Chase, 1990; Lane, 1993). However, a continuing conceptual problem in the social sciences—and a practical empirical problem for applied social science such as SIA—is the relationship between knowledge and power—in particular, political and economic power. Although the SIA data were accepted and influential in decision making in the present case, they were only one dimension of the final decision of the cabinet to stop mining development.

Ultimately, the RAC gave the federal government a series of options ranging from limited to extensive resource development, from incorporation of the area into Kakadu National Park through to recognition of Aboriginal land interests (RAC, 1991). It did not,

however, provide a recommendation as to final appropriate land use in the area, observing that it was the task of governments to choose between competing values and interests (RAC, 1991). The government chose not to allow mineral development to proceed and to have the area incorporated into Kakadu National Park. The rationale the government provided in the days following this decision suggested that the spiritual significance of the area to the Jawoyn, and the potential for profound social impact, were important factors in this decision (Toyne, 1994). Certainly, considerations of Aboriginal social impact were highlighted by the RAC in its report (see RAC, 1991; Toyne, 1994). It is equally clear, however, from the memoirs of recently retired politicians that political imperatives, far removed from debate itself, were the overriding determinants of the decision that was ultimately made⁵ (Richardson, 1994).

Such insights into the political process of decision making on this issue illustrate that environmental and social assessment are part of, rather than apart from, political processes (see Richardson, 1994). Although SIA was critical to the formulation of advice to the government, the final decision was, of course, related to political imperatives unconnected to resource use and offers an example of the dynamic relationship between knowledge and power in political decision making. The extent to which political decision makers temper their enthusiasm for resource development with a careful consideration of the costs and benefits to local level is only partially affected by impact assessment research. It is more profoundly affected by the extent to which mobilized and therefore powerful groups can use data generated by impact assessment research to protect their strategic interests and goals.

Notes

1. The Resource Assessment Commission (RAC) was established in 1989 by the commonwealth (national) government through the aegis of the Resource Assessment Commission Act. After conducting several inquiries, the RAC was abolished in 1993. The RAC constituted a public inquiry mechanism to advise the commonwealth government on major conservation and resource development issues. The RAC received its terms of reference for resource inquiries from the commonwealth government and was empowered only to make recommendations to the government about resource use and management.

2. Australia has a federal system of government in which powers are shared between the commonwealth and the states according to the Australian constitution. The Northern Territory is a commonwealth territory, although it has considerable autonomy and has assiduously sought in recent years to increase the scope of its jurisdictional responsibilities. The constitutional division of responsibilities is generally thought to have accorded the states jurisdictional responsibility over resource use and planning (Davis, 1989; Kellow, 1993). However, in recent years the commonwealth has intervened on a number of state-based environmental issues and state-commonwealth tension over environmental jurisdiction has been a characteristic feature of the Australian Federation (Kellow, 1993; Davis, 1989). Importantly, commonwealth intervention on environmental matters has been upheld by the Australian High Court as constitutionally valid (Kellow, 1989; Economou, 1992). As a result, the Australian federation is increasingly seen as involving shared or concurrent responsibilities rather than being coordinate or hierarchical (Galligan and Fletcher, 1993).

3. This low use rate is probably because SIA is dominated in Australia by engineering consulting firms whose knowledge of SIA methods and relevant social theory is poor (Chase, 1990; Lane and Dale, 1995).

4. In an extension of the Australian leaseback approach to comanagement of national parks, the Jawoyn have been able to claim Nitmiluk (Katherine Gorge) National Park (see De Lacy, 1994). This park, which attracts large numbers of tourists every year, lies in the traditional lands of the Jawoyn. The financial rewards of leaseback arrangement are substantial (De Lacy, 1994), but

during the social impact research under consideration, a number of senior Jawoyn complained that accommodation of visitor interests in the management of the park effectively excluded the traditional owners from use and enjoyment of the area.

5. As the recently retired former Environment Minister, Graeme Richardson, has made clear in his memoirs (Richardson, 1994), the majority of the cabinet favored mining. The prime minister at the time, Robert Hawke, was against mining and favored incorporating the area into Kakadu National Park. Toyne (1994) has asserted that Hawke's position was based solely on the electoral implications of the decision, observing that a decision to include the area in Kakadu National Park was popular. That Hawke faced defeat in cabinet was untenable because, as Richardson (1994) has explained, he had only recently survived a challenge to his leadership by the long-serving treasurer, Paul Keating. The cabinet, it appears, grudgingly fell in behind Hawke over the issue in a bid to shore up his increasingly vulnerable grip on the leadership (Richardson, 1994).

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