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JOURNAL OF THE COMMUNITY DEVELOPMENT

S O C I E T Y

Volume 26, No. 1
1995

Judith I. Stallmann
Lonnie L. Jones

A Typology of Retirement Places: A
Community Analysis

Francis O. Adeola

Demographic and Socioeconomic
Differentials in Residential Proximity to
Hazardous Waste Sites and Environmental
Illness

Clyde Eastman
Richard S. Krannich

Community Change and Persistence: The
Case of El Cerrito, New Mexico

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Gambling on the Lure of Historic
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A Practical Approach to Shift-Share Analysis

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Approaches of Extension Specialists to
Teaching Community and Economic
Development



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DEVELOPMENT**
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EDITORS' NOTE

As mentioned in previous editions, one of the critical functions of this journal is to facilitate communication between researchers and practitioners working in community development. It is important to not only report on completed research, as is the major task of most research-based journals, but to also include comments from others who have reviewed the journal articles. Since this journal serves the needs of both researchers and practitioners it is necessary to stimulate a continuing dialogue among both groups on common community development topics.

While researchers usually disseminate their findings or observations in an article, a book, or other written form, it is often much more difficult for practitioners to “write-up” conclusions on their work or to comment on others. Researchers are normally able to budget time for writing, while this task is not as high a priority for many practitioners. Researchers are more prone to write than most practitioners.

An important way that this journal can fulfill its communication function is by including letters, comments, and observations from both researchers and practitioners regarding articles contained in this journal. In this edition we have included one such letter. We hope to receive many more in the future. The editors will publish as many as possible.

The editors strongly encourage the readers of this journal to comment on the articles. While a letter is an obvious form of communication to send to the editors, a number of readers are everyday users of the Internet system and that may be a more efficient form of communication for many. The e-mail address of the managing editor is rblair@unomaha.edu.

Putting together an edition of the *Journal of the Community Development Society* is not possible without the valuable input from a number of peer reviewers. The editors wish to express their appreciation to the following individuals who reviewed and helped improve many manuscripts:

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A TYPOLOGY OF RETIREMENT PLACES: A COMMUNITY ANALYSIS

By Judith I. Stallmann and Lonnie L. Jones

ABSTRACT

The paper delineates types of retirement communities by the features which attract retirees, the types of retirees attracted, the promotional campaigns used, the economic considerations involved and the potential problems faced by each type of community. Communities wishing to assess their potential to attract retirees may use this typology to assess what they offer and the types of retirees they are likely to attract. Five types of retirement communities are delineated: resource amenity, planned, continuing care, old home town and regional center. While existing literature concentrates on counties, this typology is also useful at the sub-county level. Perhaps because the literature concentrates on counties, several of the community types presented have not been discussed explicitly in the literature.

INTRODUCTION

Over the past twenty years, one set of non-metropolitan counties has consistently experienced above average population growth. These are retirement counties (Cook & Hady, 1993). Retirement counties have been defined as non-metropolitan counties with at least fifteen percent net in-migration from 1970–1980 of people aged sixty and over. (Bender et al., 1985). In addition to population growth, these counties also experienced rapid income growth (Cook & Hady, 1993). This growth continued into the 1980s when many other non-metropolitan counties lost jobs, incomes, and population (Glasgow, 1990).

As other rural counties which have not experienced such growth look for ways to increase jobs and incomes, they have begun to focus on migrating retirees as a potential economic base (Summers & Hirschl, 1985; Glasgow, 1990). Further evidence of interest is shown by the growing body of literature on the potential economic impacts of retirees on the receiving counties (Crown, 1988; Glasgow, 1990; Glasgow & Reeder, 1990; Haas, 1990; Serow, 1990; Bennett, 1993; Reeder, Schneider & Green, 1993; Jones, Whitehorn & Wyse, 1993; Siegel & Leuthold, 1993).

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In 1980, 515 non-metropolitan counties (21 percent) were classified as retirement counties. They were geographically concentrated in the South, the Southwest, the West Coast and around the Great Lakes (Bender et al., 1985). These counties appeared to be more economically diverse than their geographic concentration would suggest. Fifty-seven percent of retirement counties were classified as having at least one other economic base (Cook & Hady, 1993).

The economic diversity among retirement counties suggests that their reactions to economic phenomena will differ. Thus, a further delineation of retirement community types might be useful for analysis to guard against over generalizations about economic impacts in retirement counties (Stallmann & Siegel, 1994). In addition, a delineation of retirement community types could be useful to local governments that wish to assess the potential of their community for attracting retirees.

Classification of communities by the factors which attract retirees may be useful to communities for several reasons. Communities which currently are not retirement communities, but wish to assess their potential, may use the classification. The classification also allows existing retirement communities to pinpoint their positive characteristics, to determine whether they maintain those characteristics, and to analyze their future prospects.

Local government in the United States includes not only counties, but also towns, townships, and multi-county organizations, which on some issues can act independently of counties. Thus, the classification will be based on retirement communities (sub-county) but is also applicable to counties. Wiseman and Roseman (1979) point out that there are different spatial scales of elderly migration. Interstate, intercounty, and intracounty migration are likely to come from different subgroups of retirees. Much of the research on migrating retirees does not define an intracounty move as migration. For example, intracounty migration does not influence the classification of retirement counties (Bender et al., 1985). The existence of intracounty migration has major implications for communities within the county and is defined here as migration. Even though a retirement community does not dominate the county economy, it may still be an important component of the county's economic base, contributing to the diversity of that economic base. In addition, even a small number of retirees can have a major impact on small communities (Rowles & Watkins, 1993; Haas, 1990).

Longino (1982, p. 239) defined a retirement community as "any living environment to which most residents have moved since they retired." This was a more restrictive definition than that used by Bender et al. (1985, p. 2) to define retirement counties. "For the 1970-80 period, net immigration rates of people aged 60 and over were 15 percent or more . . ." Because in a small community even a small number of retirees can have a major impact (Rowles & Watkins, 1993; Haas, 1990), we define a retirement community as having a net immigration of retirees (of any age).

Several typologies of retirement communities have been presented. In general the typologies did not emphasize policy variables amenable to intervention by local government. In general, the typologies have been intended for other purposes, such as outlining living options for retirees (Weber & Osterbind, 1961; Wiseman & Roseman, 1979; Lawton, Greenbaum & Liebowitz, 1980), outlining the migration decision process (Haas & Serow, 1993), or focusing on the reason for migration (Law & Warnes, 1982). Longino's (1982) and Streib's (1990) classifications are useful starting points, but each aggregated several types of retirement communities which might be usefully analyzed separately.

This paper delineates five types of retirement communities based upon the community factors attractive to retirees. The characteristics of the retirees attracted, the community services available, and the recruiting efforts for each type of community are discussed. Problems these communities face as they mature are also addressed. While the existing literature provides information on several of these community types, others delineated here are not discussed explicitly in the literature.

The analysis does not include the elderly who age in place. These retirees are already integrated into the local economic and social structure, are residentially dispersed throughout the community, and do not represent an addition to the economic base. It is not our intention to ignore this important part of the retiree population, but their characteristics and needs are different from migrating retirees and require a different set of services and policies (Glasgow & Beale, 1985). In addition, the communities with a high percentage of retirees due to aging-in-place differ from those with high in-migration (Reeder & Glasgow, 1990).

TYPOLOGY OF RETIREMENT COMMUNITIES

Resource Amenity Retirement Communities

Resource amenity retirement communities generally have developed around a natural, or man-made environmental or geographic amenity—water, mountains, forests, climate, etc. Resource amenity communities can be found in various climates and terrains: Florida, the Texas Coast, the Ozarks, the North Carolina Mountains, the Arizona semi-desert and the Pacific Coast. Smaller communities can be found throughout the country, usually centered around a recreational amenity, such as a man-made water reservoir. This category can also include retirement communities which develop around unique human and cultural amenities, such as those in a university town or near an artist colony.

Longino's (1982) "de facto" retirement community fits this category. Streib's (1990) class of naturally occurring retirement communities seems to include some elements of the resource amenity community, but it also includes elements of the old home town (discussed below) and of aging in place. Sykes (1993) uses

the naturally occurring designation to refer exclusively to aging in place.¹ Our definition is focused on the natural or human resource amenity that serves as the magnet that attracts retirees to the community.

Resource amenity communities attract middle and upper income, newly retired, married people in good health who have the ability to make and carry out their own decisions (Longino, 1982; Bennett, 1993). These people tend to be leaving metropolitan areas. They are socially and recreationally active (Longino, 1982). Migrants may have had a previous tie to the area, such as vacationing in the area (Law & Warnes, 1982; Haas & Serow, 1993). Those who settle in smaller amenity communities are seeking an alternative to a suburban lifestyle.

Resource amenity communities give retirees a sense of social stability and security because persons of similar interests and circumstances are attracted to the area. Social bonding among the retirees is likely to occur as the group increases in size. Moreover, as retirees adjust to their new environment, many become involved in local community activities such as church, social clubs, volunteer activities and others (Rowles & Watkins, 1993; Haas & Serow, 1993). A recent study in Texas found that immigrating retirees were active most frequently in interest groups and churches (80 percent), and civic or service groups (55 percent). Few (14 percent) held political or administrative positions in official office, boards or commissions (Jones, Whitehorn & Wyse, 1993). Immigrating retirees had a strong interest in integrating into the existing peer group. Whether or not they became active in the larger community may depend more upon their established behavior before retirement than new personal developments after retirement (Wiseman & Roseman, 1979).

The community infrastructure and services of resource amenity communities have usually been developed for all citizens rather than specifically to attract retirees. The demand by retirees for many services may be met by adding to existing systems, particularly infrastructure such as water and sewer. Retiree-focused services (housing, social programs, medical) may be developed responsively by the public or private sector (Longino, 1982; Rowles & Watkins, 1993). As the number of retirees increases the community may become retiree focused as Rowles and Watkins (1993) found in Hendersonville, North Carolina, and Longino (1982) found in the Ozark Lakes country.

As the name implies, these communities developed from some exogenous force, independent of any organized effort on the part of government or business aimed directly at attracting retirees. However, the community may develop a recruiting effort to attract more retirees, mainly through advertising, well after it has developed a resource amenity retirement character.

¹Communities based on retiring in place are more likely to resemble the old home town and the regional retirement center discussed below than the resource amenity community.

Many resource amenity retirement communities are well established. This type of community will continue to attract migrating retirees. Some such communities already face population growth problems, and these problems may become more severe. Problems of growth management, public service provision, and public finance will be similar to those of other growing communities (Rowles & Watkins, 1993). Rapid growth may exceed the capacity of existing public infrastructure, and new systems on a larger scale may be needed. Glasgow (1990) pointed out that retirement counties in general have increased both their public revenues and their expenditures.

Planned Retirement Communities

Planned retirement communities are, by and large, private enterprises developed by a real estate company. These communities have been specifically designed for retirees. The community may be built to take advantage of a natural amenity or it may be built to supply community amenities such as golf courses, tennis courts, social clubs and programs, security, etc. The majority of planned retirement communities have been located in the rural South, particularly Arkansas, Florida, North Carolina, South Carolina and Tennessee (Ellenberg, 1987).

The type of retiree attracted to a planned retirement community will depend upon the cost—in general newly retired, middle and upper income, urban professionals (Miller, Voth & Chuck, 1993; Siegel & Leuthold, 1992). They are recreationally active, and they also enjoy a high degree of social interaction. These communities attract retirees who enjoy a suburban life-style. If the community is near an urban area, it may also attract upper-income, working-age professionals (Siegel & Leuthold, 1992).

Services provided in a planned community have been oriented to meet the needs of retirees, rather than the general population. The quantity and quality of community services available varied with the size and the price structure of the community, the developer and the location of the community in relation to larger communities (Siegel & Leuthold, 1992). Homeowner fees have often been charged to support the community amenities. Some planned communities provided basic public infrastructure, but few if any personal services (Barkley & Henry, 1993; Miller, 1993a; Miller, 1993b). More expensive communities provided health facilities, recreational facilities, and personal services. If a larger community nearby can provide personal and recreational services, the planned community may not provide them. Also depending on location, the public infrastructure may be a separate system for the planned community or may be added on to the system of a nearby community (Barkley & Henry, 1993; Siegel & Leuthold, 1993). Tellico Village, Tennessee (Siegel & Leuthold, 1993), Savannah Lakes, South Carolina (Barkley & Henry, 1993), and Hot Springs

Village, Arkansas (Miller, 1993b), are examples of planned retirement communities.

In the past, developers have picked the areas in which to locate planned communities. More recently some local governments have recruited developers (Ellis, 1993). The developer has attracted retirees through a marketing campaign, which may have been national. The experiences of friends and families in the community or in similar communities has been important in the decision to relocate (Wiseman & Roseman, 1979). For the retiree the considerations included: 1) the up-front costs and payment plan, 2) the quality of the infrastructure in the development, and 3) the financial security of the developer.

Once mature, these planned communities may become functioning towns, faced with the same advantages and challenges of self-government faced by other towns. Planned communities have experienced many notable successes, providing high-quality retirement environments. In fact, the very success of a community can create problems, such as congestion and traffic, which make it less attractive (Miller, Voth & Cluck, 1993).

As the community matures, property values may stabilize or fall depending upon the ability of the community to continue to attract retirees to replace those who have left the community. The ability of a mature planned retirement community to maintain its value has depended, at least in part, on its success in competing with newer planned retirement community developments. A community with an older age structure may have difficulty attracting younger retirees (Lawton, Greenbaum & Liebowitz, 1980). The newly retired tend to prefer new, more luxurious housing and a more affluent life-style than that provided by some of the mature communities (Streib, 1990). Maintaining and updating the quality of the community infrastructure and services has been another important factor in the community's ability to continue to attract retirees. This may be less expensive if the aging services have been added to an existing system rather than being a separate system. Some communities have not fared well in the competition. Businesses have failed, and retirees have lost most or all of the value of their investment.

Continuing Care Communities

Continuing care communities have attracted retirees because of the security for medical and personal care which they offer. This is a rapidly growing area as the percentage of the population over 85 increases. These communities have been located near urban centers or in towns, often regional trade centers. While obviously a planned facility, a continuing care retirement community is distinguished from the planned retirement community by its offer of care from the beginning of retirement to death. Contracts between the retiree and the community have provided for much more than the property and related recreational and social services provided by a planned retirement community. The services

offered have been extensive, ranging from single-family housing to personal service to varying levels of medical care. The medical care offered has included doctor and clinical services similar to those in planned or other communities but also extended to full-care nursing home and hospital services for retirees who needed them (Streib, 1990). In many cases, retirees basically purchased a lifetime estate plan in the continuing care community with stipulations concerning level of service, type and quality of living facilities, and even the disposition of the retiree's remaining estate.

Lawton, Greenbaum and Liebowitz (1980) discussed a continuum of housing environments from constant to accommodating. The *constant* environment did not accommodate changes in the residents' ability to live independently and the residents needing a change in care must move elsewhere. The constant environment seemed to correspond more closely to the planned retirement community. The *accommodating* environment, which made provisions to fit changing needs of residents, corresponded more closely to the continuing care community.

A variety of retirees may be attracted to continuing care communities depending upon the range of independent to complete-care living options offered. Retirees most likely to be attracted have been older, widowed, in need of (or anticipating) special health care, or concerned about security (Lawton, Greenbaum & Liebowitz, 1980; Longino, 1982). The poor tended to be excluded (Longino, 1982). Retirees have moved from within the region so that family and friends can visit. However, some continuous care communities drew retirees from distant regions (Woods, & Allen, 1993). In addition, the continuing care community may be a second or third move for a retiree (Haas & Serow, 1993). Carefree Village (Longino, 1982) and York Houses (Lawton, Greenbaum & Liebowitz, 1980) are examples of continuing care communities.

The continuing care center has often been isolated from the larger community within which it is located. Services were specifically for the members of the continuing care center and not available to others. Public facilities and services were commonly provided to the continuing care center for a fee by the local government in the same manner as to any commercial establishment in the area.

Continuing care communities were originally developed by religious and charitable organizations. In recent years, profit-seeking firms have entered the market. More than any other retirement alternative, continuing care communities have required extensive planning and evaluation of risks to be successful, whether they were non-profit or profit-making enterprises. Through their history there have been numerous failures. Some states have passed laws to guard against financial mismanagement and to protect the clientele, who may have made a substantial up-front payment. Such laws may restrict use of funds, require escrow accounts, periodic inspections and audits, and other measures (Streib, 1990).

Likewise, retirees considering this type of retirement alternative should shop wisely. Significant up-front costs may be involved in combination with a variety

of payment plans, but these arrangements have varied among communities. Because entering a continuing care community is a heavily front end loaded decision, changing one's mind is seldom feasible even if the services do not meet expectations. Thus, regulation of continuing care communities is likely to increase.

Generally, the developer has selected the community in which the continuing care center will be located. These centers have advertised their facilities and services, but have been likely to draw from across the nation less often than have planned retirement communities. For religious and charitable organizations, advertising has been less promotional and more informational (i.e., pamphlets, service and cost schedules, sample agreements).

Old Home Towns

Retirees have been attracted to the old home town community because of its social environment. They have been likely to have had previous personal or social ties to the community through family, attending school, job assignments or other experiences. Frequently, retirees move to the community to renew social ties. These migrating retirees are sometimes referred to as returnees (Jones, Whitehorn & Wyse, 1993; Rowles & Watkins, 1993; Serow, 1990).

In the literature, the old home town generally has not been treated separately from several other types of communities (Streib, 1990). This appears to result from the fact that in both the old home town and the resource amenity community there may be previous links to the community. The distinction is that in the case of the old home town the link is primarily to people, whereas in the amenity community the link is to place. Haas and Serow (1993) note that destination-specific retirees were mainly attracted by personal ties to the area while destination selectors were attracted by the amenities.

Two types of retirees have been attracted to the old home town. One group was similar to those attracted to resource amenity communities: middle-income, newly retired, recreationally active and likely to have lived in the area as a youth, a student or at some time in their career. They may have maintained acquaintances that were made years earlier and were easy to actively renew. Existing social relationships in the old home town draw retirees back to the area rather than the social and recreational activities that attract retirees to planned communities. This type of retiree may chose a rural residence in open country rather than in town. The second group of retirees attracted to an old home town would be middle and lower income, older retirees, perhaps in poor health who would move to be near family and friends for assistance (Jones, Whitehorn & Wyse, 1993; Rowles & Watkins, 1993; Serow, 1990). Hazard, Kentucky, is an example of the old home town (Rowles & Watkins, 1993).

The infrastructure and services offered by the old home town typically have been those available to all residents. In many cases the number of migrating

retirees was low and services specifically for retirees were unlikely to develop. The old home town may not be a true retirement community in that it may never achieve a critical mass of retirees. Nevertheless, people have returned to the old home town to retire and they do represent a growth potential for the communities. In a small community even a small number of retirees can have an impact (Rowles & Watkins, 1993; Haas, 1990).

The old home town may not have had an active promotion campaign, and may have overlooked the opportunity to attract retirees. Typically, community promotion efforts have been focused around Chamber of Commerce business activities such as retail promotion or promotion of a town festival. Alternative campaigns that focus on former residents of the area who are approaching retirement could stimulate the interests of a larger group of retiree-returnees (Rowles & Watkins, 1993). Invitations to this group to come home again for town reunions, athletic events and similar activities could prove attractive.

Communities which have a high flow of people through them, such as a college town, may be better positioned to attract return retirees than other areas. Rural communities that have experienced a high rate of outmigration of young people seeking employment in larger cities may also have an opportunity to attract return retirees (Rowles & Watkins, 1993). Whether the old home town has the ability to attract retirees who do not have previous ties to the community is open to question. The prospects for doing so would likely await the development of some level of success with return retirees. Failing this, these communities have a good chance of being left behind in the retiree attraction competition, not unlike their industrial development experiences of the last 30 years.

Regional Retirement Centers

In rural areas, it is common for retirees to move to a larger community when they retire, or to move from a farm to a town (Glasgow & Beale, 1985). These communities may still be rural in nature, but also serve as regional trade centers. They offer a variety of personal, medical and recreational services that may not be available in the smaller towns and villages.

To our knowledge this community type has not been discussed in the literature. Because intracounty moves often have not been counted as migration, most researchers would consider these retirees to be aging in place. The community is delineated here because intracounty migration has differential impacts on the communities within a county. The following discussion is based upon the authors' research observations, reported here for the first time.

Two types of retirees were likely to move to the regional center. One group included the middle-income, newly-retired who were seeking entertainment and social interaction. In addition, middle and lower income retirees, seeking health and personal assistance also moved to regional centers. Retirees tended to move from within the county and from adjacent counties. In general, intracounty

migrants were not as well off as other migrating retirees (Serow, 1990). The retirees who moved into the town may have added to a number of retirees who were aging in place.

The infrastructure and services of regional retirement centers were those offered to all citizens. As the retiree population increased, some services may have been developed specifically for them. The retirees retained old social ties with friends and families but often developed new friendships with neighbors.

Sheldon and Spencer, Iowa, may be examples of regional retirement centers. Rowles and Watkins (1993) may also have found several of these communities in Appalachia. "There is considerable variation among counties in the degree to which elderly migration, as compared to aging in place, is the dominant process affecting elderly population change . . ." In many of these counties the numbers involved were very small and migration was essentially from adjacent counties (Rowles & Watkins, 1993, p. 513). Unfortunately, Rowles and Watkins did not elaborate on this point.

Generally these towns directed no promotion efforts at retirees. They were more likely to have efforts promoting their retail sector to the general population. A promotion campaign emphasizing the medical and other services available and targeted to those near retirement age in adjacent counties could stimulate interest in the community.

Mixtures

Some communities may combine characteristics of more than one type of retirement community (Rowles & Watkins, 1993). A college town may be the old home town for former students and faculty members and also may attract retirees for the cultural amenities it offers (a resource amenity community). Some planned communities have added continuing care as the community has matured. Mixed communities may have a stronger potential to attract retirees than other communities because they can draw from several pools of retirees.

Summary

Resource amenity and planned communities attract retirees because of the amenities they offer. In addition, they attract similar types of retirees (Table 1). The communities differ in that the resource amenity community develops spontaneously while the planned community is developed specifically to meet the needs of retirees. In both cases, success may lead to growth management problems.

Continuing care communities tend to attract retirees who are more likely to need living assistance. These communities are also developed specifically to meet the needs of retirees. Rising costs and financial solvency are continuing concerns for these communities.

Table 1. Summary of Retirement Community Characteristics

<i>Community Types</i>	<i>Attractive Features</i>	<i>Services Available</i>	<i>Type of Retiree</i>	<i>Recruiting Effort</i>	<i>Future Issues</i>
Resource Amenity	natural or man-made amenity	for all; special services may develop	upper & middle income; younger; newly retired; healthy; from metro areas	none at first; may advertise at a later stage	growth management; loss of amenity
Planned	natural and social amenities	for retirees	upper & middle income; younger; newly retired; healthy	national advertising by developer	growth management; maintaining quality of infrastructure
Continuing Care	living assistance; medical care	for retirees only	middle & upper income; older; widowed; health problems;	for profit: advertising; non-profit: informational	financial solvency
Old Home Town	social ties; living assistance	for all; special services may develop	both independent & assisted living	usually none; target former residents	development of a critical mass of retirees
Regional Center	man-made amenities; social ties; living assistance	for all; special services may develop	both independent & assisted living	retail promotion	N/A

The old home town and the regional retirement center attract similar retirees. Both independent and assisted living retirees are attracted. While services tend not to be specifically for retirees, some may be developed as the size of the retiree population increases.

THE FUTURE

It is important to remember that the large majority of retirees stay put in their location at retirement. Even fewer cross state lines to live (Sastry, 1992). The typology presented in this paper is an attempt to categorize retirement communities and more clearly understand the variety of retirement options and amenities that may attract retirees. How can this typology be used? As indicated, we believe that it is useful to communities in their economic and social development efforts. For on-going retirement communities, the typology may be useful in identifying strengths and weaknesses on which to focus future development activities. For communities that have experienced little success with attracting retirees in the past, the typology may be useful for evaluating their prospects for competing in this development alternative. Further, the typology can be useful to retirees in evaluating the breadth of alternatives available to them and the kinds of amenities to expect within each type of retirement community. In addition, the typology may be a useful starting point to consider the potential economic and fiscal impacts on retirement communities of changing demographics, income and wealth, and living preferences of retirees (Stallmann & Siegel, 1994).

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DEMOGRAPHIC AND SOCIOECONOMIC DIFFERENTIALS IN RESIDENTIAL PROPINQUITY TO HAZARDOUS WASTE SITES AND ENVIRONMENTAL ILLNESS

By Francis O. Adeola

ABSTRACT

This study addresses the critical issues of hazardous waste distribution, environmental injustice, and associated human health problems. Demographic and socioeconomic disparities in residential propinquity to hazardous waste sites and related health problems are evaluated through discriminant analysis and logistic regression models. Respondents' perceptions of specific environmentally induced morbidity such as lung cancer, pancreatic cancer, and respiratory problems are presented. Findings indicate that while Blacks are most likely to reside near hazardous waste facilities, they are less likely to perceive hazardous waste sites as the most serious problem. Furthermore, gender and socioeconomic factors are statistically significant in predicting the likelihood of environmental illness. Minority status (Black) was found to be more significant than socioeconomic factors in predicting residence propinquity to hazardous waste sites, controlling for demographic and economic variables. Thus, the assertion of environmental racial and gender inequity found strong support in the model estimated. The implications for community level actions, environmental education, environmental equity policy, and future research are discussed.

INTRODUCTION

Two decades after the first Earth Day in the spring of 1970, public concern for environmental problems is at an unprecedented high level (Dunlap & Scarce, 1991; Dunlap, 1992; Dunlap & Mertig, 1992). Environmental pollution has been recognized as a major problem affecting the health of many people as well as other living organisms. The most profound consequence of environmental crisis, especially in Louisiana, is an epidemic rise in the incidence of cancer (American

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Cancer Society [ACS], 1993; Morton, 1991, p. 48). A growing body of evidence indicates that African Americans and Hispanics are more often exposed to lead poisoning, air, water, ground and agricultural pollution than their White counterparts (Bullard, 1990; Wernette & Nieves, 1992; Sexton, 1992; Mohai & Bryant, 1992a; Louisiana Advisory Committee to the U.S. Commission on Civil Rights [LACUSCCR], 1993). African Americans face increased health risks both from the environment and occupational sources, in addition to cardiovascular and cerebrovascular illnesses, sickle cell anemia, diabetes mellitus, and chemical dependency.

Most of the previous research on environmental issues has focused on general environmental concerns, perceptions, attitudes, knowledge, and behavior rather than on more restricted topics such as the perceived health impacts of toxic wastes and the distribution of environmental burden in various communities (Van Liere & Dunlap, 1980; Taylor, 1989; Freudenburg, 1991). This paper focuses on the effects of demographic and socioeconomic characteristics on residence propinquity to hazardous waste facilities and on environmental illness. In the first section of the article, the background of the study including the patterns of locally unwanted land uses (LULU) and the extent of local resistance are discussed. Subsequently, the theoretical perspectives, empirical analyses and findings will be presented. Residents' perceptions of potential toxic waste-related diseases and reported sickness due to environmental conditions are evaluated. Using data from a random sample of households, multivariate discriminant and logistic regression models are employed to identify the most significant factors in predicting residential propinquity to hazardous waste sites and the odds of environmental illness.

Background

Environmental issues of toxic waste, illegal dumping, inadequate enforcement and violation of environmental standards, temporarily obsolete abandoned derelict sites (TOADS), and unwanted land uses in communities of color have received much governmental, media, and local environmental activists' attention in the state of Louisiana. In most recent years, the state has been targeted as one of the major industrial toxic waste dump sites in the United States. Louisiana was recently ranked first in the United States in total chemical releases, second in underground water pollution, and sixth in total air toxic releases, causes for concern about environmental health of the residents (Louisiana Advisory Committee to the U.S. Commission on Civil Rights [LACUSCCR], 1993, p. 9). The Environmental Protection Agency (EPA)'s national Toxic Release Inventory reported the largest toxic releases and diffusion of chemicals (459 million pounds) into the environment of any state in the country.

The Study Setting

Baton Rouge and its periphery receive the bulk of hazardous waste dumping in Louisiana, mostly due to high concentration of petrochemical industrial activities in the area. Toxic emissions from the petrochemical industry, private and municipal landfills, sewage treatment plants, automobile, and industrial wastes are the major threats to clean environment and to human health. Most recently, the Environmental Protection Agency cited at least three industrial plants in East Baton Rouge emitting large doses of toxic chemicals which pose a severe health risk to the residents (Associated Press, 1989, pp. 1-A, 10-A). Among the environmental and human health threatening conditions located in the Baton Rouge's SMSA are the Devil's Swamp, a major municipal landfill located in Scotlandville community; Exxon oil refinery plants, which recently experienced two major devastating explosions; and Rollins Environmental Services plants, all of which are in predominantly black neighborhoods. Rollins Environmental Services, Inc., and Rhone-Poulenc are the two major commercial hazardous waste treatment and disposal companies using incinerator and landfill to discard toxic chemicals and petrochemical residues in the area.

Both in Baton Rouge and across the state, populations residing within a 2 mile radius of facilities releasing the bulk (90 percent) of total industrial corridor toxic releases are mostly Blacks in composition. Rollins Environmental Services, Inc., and Rhone-Poulenc company are both located in Alsen and Scotlandville communities where the residents are predominantly (about 90 percent) African American. The concentration of deadly effluent from the petrochemical industrial and landfill activities in the environment represents a potential cause of high rate of environmental morbidity among the residents. Due to a dearth of systematic research and lack of an environmental health accounting system in Louisiana, the actual number of people affected by environmental illnesses, especially in the "cancer corridor," has not been determined.

The petrochemical companies generate a significant proportion of toxic wastes in the environment because the major health-threatening pollutants, including sulfur dioxide, nitrogen oxide, carbon monoxide, carbon disulfide, PCBs, dioxin compounds, and other hydrocarbons, are by-products of petrochemical firms' activities (Brown, 1987; LACUSCCR, 1993). According to a recent estimate, these companies generate more than 150,000 tons of toxic effluent per annum (Department of Environmental Quality, 1991; Nauth/LCTJ, 1992). East Baton Rouge and the adjoining communities have been designated as the core of the cancer corridor. The cancer corridor is defined as a geographical area stretching from East Baton Rouge through Ascension Parish to New Orleans, along the Mississippi River, with a pattern of higher incidence of cancer and cancer mortality. As aforementioned, Baton Rouge, the core of the cancer corridor, is of significant interest because its air, water, and ground are highly polluted with large doses of carcinogens, mutagen, teratogen, and necrotic agents, which pose significant danger to human health and the health of other

species (Brown, 1987; Bullard, 1990, p. 65; Griffin, 1988, p. 17-18). In the communities within the cancer corridor, there is a greater danger of synergistic effects of environmental pollutants on the human body. As Brown (1987) indicates, the effects of toxic clouds are dispersed throughout the industrial corridors along the Mississippi River. Thus, long-term residency in this area may be directly related to high degree of exposure to toxicant and incidence of environmentally related illnesses.

With a growing visibility of environmental problems, an expanding knowledge base, increased media role, and the recognition of a growing inequitable distribution of environmental burden by race and socioeconomic status, many residents of Louisiana have expressed concerns about the toxic clouds and associated human health problems in the state (Adeola, 1992). The state of Louisiana has a higher percentage of Black population (30.8 percent) than any other minorities. Baton Rouge's population is composed of 52.9 percent Whites (not of Hispanic origin), 43.9 percent Blacks, 2.2 percent racial minorities including American Indians, Asians and Pacific Islanders and 1.1 percent Whites of Hispanic origin (U.S. Bureau of the Census, 1990, p. 21). However, institutional barriers in terms of job and housing discrimination, have kept millions of African Americans and other ethnic minorities in polluted neighborhoods and in hazardous, low-paying jobs (Bullard, 1990, p. 105).

Generally, in the South where institutionalized housing, schools, and recreational space segregation endures, race appears to play a more significant role than socioeconomic factors in determining where people live, work, attend school, or play. For instance, in Baton Rouge the patterns of residential segregation by race persist and Blacks, regardless of their socioeconomic status, are disproportionately located in polluted neighborhoods. They are most likely to live near toxic waste dumps, landfills, and temporarily obsolete abandoned derelict sites (TOADS) such as those placed on the EPA's National Priority (Superfund) Lists. According to a study conducted by the U.S. General Accounting Office (GAO), African Americans constitute the majority of the population in the communities where hazardous waste landfills and TOADS are located (U.S. GAO, 1983). People of color are more often exposed to health-threatening environmental conditions and they are more susceptible to the effects of many environmental hazards, which contribute to their relatively short life expectancy (Sexton, 1992, p. 38). African Americans are at risk of exposure to lead poisoning because they live in older housing units and they are more prone to death resulting from occupational health hazards and safety risks than their white counterparts (National Center for Health Statistics, 1990a, 1990b; Bullard, 1990; Wright & Bullard, 1990).

The LULU, PIBBY, and NIMBY Syndromes

There is a mounting evidence in the literature showing that the location of municipal landfills, commercial hazardous waste facilities, and other health-

threatening industrial facilities are in the paths of least resistance—i.e., in minority backyards where there is a low probability of *not in my backyard* (NIMBY) opposition (see Bailey & Faupel, 1992; Mohai, 1990; Ladd & Laska, 1991). The *locally unwanted land uses* (LULU) syndrome is defined as a pattern of location or siting of environmentally and health threatening facilities in the least desirable geographical area, usually in minority communities (or *placed-in-Blacks'-backyard* [PIBBY]). The LULU syndrome affecting many underprivileged Black communities is a reflection of poor resource mobilization capacity, political alienation (powerlessness and disenfranchisement) of poor Black Americans who have little or no voice in the decision process concerning the location of hazardous waste disposal sites.

Across the country, the factors related to the LULU syndrome affecting many minority groups include relatively low effective demand for landed properties, poverty, housing discrimination, lack of knowledge and information resources, and weak grassroots political organization for resistance or opposition to hazardous facility location [otherwise known as *not in my backyard* (NIMBY)] (Bullard, 1990; Mohai & Bryant, 1992a). The significance of race has continued in environmental hazards' distribution in places where discrimination in housing, schools, churches, and employment are deeply entrenched.

In terms of residential and occupational environmental hazards, Blacks are disproportionately at risk of exposure to noxious fumes and other contamination from hazardous facilities. Higher risk of exposure to toxic substances translates into poor health conditions which in turn manifest as high morbidity, mortality, and lower life expectancy among African Americans. The double jeopardy of residential and occupational hazards among African Americans and other ethnic minorities has been addressed by Bullard (1990), Mohai (1990), Mohai and Bryant (1992b), and Wernette and Nieves (1992). Higher incidence of lung cancer and work environment induced hazards have been linked to job and environmental related racism in the United States (Wright & Bullard, 1990; Sexton, 1992).

Race, Environmental Attitudes, and Exposure to Environmental Hazards

The relationship between race and environmentalism remains unsettled in the literature. Explanations of the existence of differences between Blacks and Whites in environmental attitudes, concerns, and behaviors are mixed. For instance, Taylor (1989, p. 183) examined 17 articles which offer some theoretical and empirical explanations of Blacks' dismal attitudes concerning environmental issues. Taylor concludes that any racial differences in Blacks' and Whites' environmental attitudes can be explained in terms of historical experience of the former with the physical environment, the gap that exists between concern and activism, and the behavioral response to specific environmental problem. Bullard (1990) on the other hand, sees a broadening base of environmental concern, with Blacks exhibiting a higher level of environmental protests,

especially when the issues of environmental racism and equity or civil rights are juxtaposed. Also, several studies found a positive correlation between percentage Blacks and concerns about pollution and spending more money to protect the environment (NORC, 1988; Mohai, 1990). Most recently, increased participation of Blacks and other minorities in environmental activism was acknowledged by Taylor (1992) and Jones and Dunlap (1992). Thus, there is a growing level of resistance or not in our backyard (NIOBY) stance, mostly orchestrated by the grass roots organization against the locally unwanted land uses (LULU) syndrome in conjunction with the issue of distributive justice.

THEORETICAL PERSPECTIVES

The social psychological and resource mobilization perspectives are prevalent in the literature on Blacks' involvement in environmental issues. For the former, the extent of crisis (or anomie in terms of alienation, relative and absolute deprivation, strain, and grievance) experienced personally by the individual in society determines the degree of participation in social and environmental movements; and the latter focuses on structural conditions such as economic resources, organization membership, leadership, and communication networks, that facilitate environmental movement participation and positive environmental behavior by the individual (see Gamson, 1975; Jenkins, 1983; Mohai, 1985; Bullard, 1990). Since the primary focus of this study is on hazardous waste proximity and environmental health rather than environmentalism, alternative perspectives are called for. Among several emerging theoretical explanations of the specific issues of hazardous wastes, human health, and environmental inequity are the environmental racism perspective, opportunity-threat hypothesis, environmental illness and environmental medicine paradigms. These perspectives are elaborated in the following sections.

Environmental Inequity and Environmental Racism Perspectives

Minority status has been consistently found to be associated with exposure to toxic waste and other environmental and occupational hazards (Bullard, 1990; Mohai, 1990; Mohai & Bryant, 1992a). Thus, the question pertaining to the distribution of environmental burden by race and socioeconomic status becomes a salient theoretical and empirical issue. Environmental justice, defined as equal treatment of people of all races, ethnicity, cultures, and socioeconomic statuses in the development, implementation, and enforcement of environmental regulations and policies, has become a major component of civil rights demands in recent years. Inequity in terms of low resource commitment, inadequate policy directives and poor implementation and enforcement of environmental laws in predominantly Black, Hispanic, or native Americans' communities suggests that environmental racism exists, and its existence appears to transcend individuals' imaginations. The deliberate targeting of communities of people of color for

toxic waste facilities, and the official endorsement of the presence of life-threatening poisonous chemicals and other pollutants in minority communities are all indicative of environmental racism in the United States (LACUSCCR, 1993, p. 3). Nevertheless, it has been argued that environmental injustice is about politics rather than racism (Shoenbrod, 1994).

Environmental racism is a concept first introduced by the United Church of Christ, which implies racial biases in the location of commercial hazardous waste facilities, and a systematic disproportionate exposure of minority groups to health-threatening environmental conditions (Mohai & Bryant, 1992b; Bullard & Wright, 1992; Bullard, 1990; Wright & Bullard, 1990). Environmental racism is engendered by job and housing discrimination as mentioned earlier. Racial prejudice, housing and employment discrimination are the major factors limiting the mobility of Blacks and other minorities; and substantial empirical evidence shows that race is the most important predictor of exposure to air pollution, toxic waste, hazards in the workplace, and living next to commercial or municipal hazardous waste facilities (Adeola, 1994; Bullard, 1990; Mohai & Bryant, 1992; Wright & Bullard, 1990). Generally, the work environment and inner city have often been the center of serious health hazards; and socioeconomic status has been found to be inversely related to toxic waste exposure (Catton & Dunlap, 1978, p. 47; Wright & Bullard, 1990). The hypotheses from the above perspectives are:

- H₁: There is a significant positive relationship between race (nonwhite) and residential proximity to hazardous waste facilities, controlling for socioeconomic factors. Given the enduring patterns of residential segregation and the LULU syndrome in Louisiana, a strong positive association between race and residential propinquity to hazardous waste sites is expected.
- H₂: Socioeconomic variables such as income and education are negatively related to residence propinquity to hazardous waste facilities. Education and income are necessary factors for breaking the barriers of residential segregation. Therefore, an inverse relationship between these variables and residential propinquity to hazardous waste sites is expected.

The Opportunity–Threat Perspective

The opportunity–threat perspective, couched in classical Marxism and utilitarian economics, focuses on how unwanted land uses and hazardous waste facilities may be defined as economic opportunity rather than a health threat. Poor economic and environmental conditions represent a major opportunity cost to many black communities in the U.S. Although hazardous waste facilities are undesirable neighbors, nevertheless, the petrochemical plants, municipal and commercial landfills, and other waste management enterprises provide employ-

ment opportunities for a large number of minorities with low level of education. For example, Bailey and Faupel (1992, p. 5) examine the job opportunities afforded African Americans by the hazardous waste industry in Sumter County, Alabama. The commercial hazardous waste treatment, storage, and disposal facility operated by Chemical Waste Management, Inc., in the county is the single largest employer of Blacks, especially where low wage rates, low education, and underemployment are the norm. In North Baton Rouge's Scotlandville community, the municipal landfill's (Devil's Swamp's) employees are 90 percent Blacks. The disproportionate representation of Blacks in the Devil's Swamp and Chemical Waste Management labor forces supports the notion that the concern for environmental health may be secondary to economic considerations (Bullard, 1990). Shoenbrod (1994, p. A21) recently indicates that, environmental hazards are likely to be placed in any community (*whether Blacks' or Whites'*) that either lacks political power or is willing to accept risks because they create jobs or represent a major source of tax revenues.

Continuous diffusion of the stench of hazardous waste into the atmosphere around the Devil's Swamp has important health implications on its employees and the residents of Scotlandville area both on the short and long runs. Thus, exposures to higher levels of hazardous waste represent a serious health threat to the people. Over a long period, the health problem due to exposure to hazardous waste facilities may far outweigh any immediate economic gain from such facilities. Other than the statistics reported for lung cancer mortality of white males, evidence documenting the actual number of people with health problems because of exposure to hazardous wastes in Baton Rouge is scanty. However, there is a general assumption that the entire population residing in close proximity to toxic waste dump sites, petrochemical plants, sewage treatment plants, municipal solid waste incinerators, and landfills are at higher risk of developing toxic waste related health problems (Brown, 1987; Bullard & Wright, 1992).

From the Marxist standpoint, modern capitalism tends to create deleterious environmental conditions affecting the health of the working class in society. Indeed, many employees may not be inclined to evaluate the long-run deleterious health effects of exposure to hazardous materials both at work and at the community levels. Most companies operating the LULUs and TOADS would rather stress the *opportunities* afforded by such facilities and discount their adverse effects on the workers and surrounding communities. Robert D. Bullard described how health risks have been sacrificed for economic opportunities in black communities:

In their desperate attempt to improve the economic conditions of their constituents, many civil rights advocates, business leaders, and political leaders directed their energies toward bringing jobs to their communities by relaxing enforcement of pollution standards and environmental regulations. . . . In many instances, the crea-

tion of jobs resulted in health risks to workers and residents of the surrounding communities (Bullard, 1990, p. 32).

To support the thesis that modern capitalism destroys both the natural environment and physical health of the workers, Karl Marx depicts the deleterious health consequences of capitalist exploitation of workers in the pottery, matches, and other hazardous industries circa 1833–1863 as follows:

The potters as a class represent a degenerated population, both physically and morally. They were stunted in growth, ill-formed in the chest, they were prematurely old, and suffered from short life expectancy. They suffered from the attacks of dyspepsia, disorders of the liver and kidneys, and rheumatism. They were especially prone to chest-disease, pneumonia, bronchitis, and asthma. . . . Tetanus was also found to be more prevalent among the workers in the match industry (Marx, 1977, p. 355–356).

Thus, even though most petrochemical and allied corporations tend to view hazardous waste facilities as a major economic opportunity, such facilities pose a substantial threat to the health of individuals living or working in close proximity to them. The hypothesis derived from the opportunity–threat model is as follows:

H₃: The lower the level of income, the higher the level of perception of hazardous waste facilities including the petrochemical industry as *economic opportunity* rather than a health threat.

Environmental Illness and Environmental Medicine Paradigms

In biomedical literature, environmental illness (EI) and environmental medicine (EM) are two emerging paradigms. Unlike the classical biomedical paradigm which locates the sources of sickness within the body, EI and EM offer different explanations about environmental stressors and morbidity. Environmental illness can be defined as a polysymptomatic disease in which people become highly sensitive to a broad range of chemical pollutants. Exposure to chemicals found in air, water, and food due to industrial and agricultural activities may induce hypersensitivity and other forms of environmental illness. Chemicals such as pesticides, polychlorinated biphenyl (PCB), herbicides, and common substances such as paints and varnishes, tobacco smoke, drugs, and gasoline and diesel fumes are associated with several incidents of EI. Immune system dysfunction, multiple chemical sensitivity, and hypersusceptibility to atmospheric conditions are the major manifestations of EI (see Blumenthal [ed.], 1985).

The concept of environmental medicine derives from the premise that optimal health conditions require all of the physiological systems within the body to be in a state of equilibrium with existing environmental stressors (Kroll-Smith

& Ladd, 1993, p. 16). Contrary to the previous assumption of biomedicine, which focuses on the internal dysfunctions of a biological system, the environmental medicine paradigm attempts to locate the origin of many illnesses (especially those that are difficult to diagnose) in the environment. Environmental toxicology represents an aspect of the environmental medicine model focusing on the adverse effect of xenobiotics on biological systems. The underlying assumptions of environmental toxicology include: (1) each individual has a toxicity syndrome associated with exposure to chemical agents which are ubiquitous in the atmosphere; (2) the response by organism to a given chemical agent follows a dose-response relationship; (3) the response in laboratory animals predicts the response in humans; and (4) depending upon the extent of exposure, xenobiotics interfere with human physiological systems by altering the structure and function of membranes (Gallo et al., 1987). Thus, age, sex, race, and nutritional status are important factors affecting individuals' levels of tolerance to environmental stressors.

High concentration of toxic wastes has been linked to various human health problems. For instance, lung cancer, respiratory problems, miscarriages among pregnant women, deformed fetuses, childhood leukemia, mental disorders, and immune deficiency are among the potential health hazards associated with exposure to high level of toxic wastes (Bartholomew & Craig, 1984; Brown, 1987; Faupel et al., 1991, p. 294). The average cancer mortality rate in Louisiana for 1985–1989 is 187 per 100,000 population, ranking 4th among the leading states in cancer deaths in the U.S. (ACS, 1993, p. 9). Due to a lack of consistent annual documentation, evidence is scarce on cancer mortality rates among African American males and other minorities in Baton Rouge. However, since Black males are more likely to be exposed to occupational hazards (Wright & Bullard, 1990) as found in the Devil's Swamp and Chemical Waste Management, Inc., it is most likely that the cancer mortality rate among them is even higher than among white males. Furthermore, poor African Americans are typically less well informed about health consequences of toxic waste, work-related hazards, and other environmental toxicants. On the national front, the cancer mortality rate is higher among Blacks than among Whites for both males and females (see ACS, 1993; Sexton, 1992).

The hypotheses derived from the environmental illness and environmental medicine paradigms are:

- H₄: There is a direct relationship between gender (males) and a reported actual experience of toxic waste-related illness.
- H₅: Socioeconomic variables such as income and level of education are inverse predictors of environmental illness.
- H₆: Duration of residence in a polluted environment is a direct (positive) function of the odds of environmental illness controlling for other factors.

DATA AND METHODS

Sample

A probability sample of residents of Baton Rouge was drawn in the spring of 1992 for the purpose of the study. Using the Baton Rouge Standard Metropolitan Statistical Area (SMSA) as the sampling frame, a random digit dialing (RDD) telephone survey was conducted by three trained interviewers during March and April, 1992. The choice of this technique of data collection was predicated upon its efficiency and cost effectiveness (Groves & Lyberg, 1988; Sharp & Feldt, 1959). Also, the method facilitated reaching a cross-section of households across the city (Babbie, 1990, p. 56). The major drawback, however, was in the exclusion of many low income households without telephone service.

For each household, an adult 18 years of age or older was interviewed. The telephone interview was designed for completion in less than 20 minutes (see Sebold, 1988) and the average completion time for each interview was about 15 minutes. Within this short time, the goal was to obtain demographic characteristics, attitudes, perceptions and concern about environmental problems, and respondents' assessment and perceptions of toxic waste in relation to human health problems in Baton Rouge SMSA. In order to minimize nonresponse and refusals, interviews were conducted in the evenings between 5 p.m. and 9 p.m. as suggested in the literature (Daniel, 1975; Groves & Lyberg, 1988). A total of 213 respondents completed the interview out of the initial 1,000 random digit telephone numbers. The cooperation rate, which indicates how well the interviewers persuaded those contacted and able to respond, was 50.13. However, the response rate, which represents the portion of the total eligible sample which completed the interview, was only 21.3. Unit nonresponse and nonexisting numbers were the two major problems encountered in the survey. Of the 213 completed interviews, 68.07 percent were whites and 31.93 percent were nonwhites, which closely reflect the population composition in Baton Rouge SMSA.

Variable Measures

To address the question about the relationship between race, residence proximity to hazardous waste sites, and health, items in the sample survey which asked respondents to indicate "yes" or "no" whether they reside near hazardous wastes, dump sites, or petrochemical plants, and whether they have experienced any health problems since residence in Baton Rouge, were used as the dependent variables in the models of discriminant analysis and logistic regression performed respectively. An item which asked respondents to agree or disagree with the statement that the petrochemical industry is largely responsible for the contamination of the environment was used in the opportunity–threat discriminant model. Proximity or nearness to hazardous wastes implies the presence of one or more hazardous waste facilities within a two-mile radius of respondents'

neighborhood and the event of environmental illness refers to respondents' self reported incidence of hazardous waste-related health problems in the past ten years of residence in the study area.

In the two discriminant models, residential proximity and nonproximity to hazardous waste facilities and a dichotomized agreement or disagreement on whether the petrochemical industry is considered a major environmental health threat are the discriminant groups. The predictor variables taken from the survey include: race, coded 1 for Blacks and 0 for Whites; sex, coded 1 for males and 0 for females; family member(s) with environmental problems in the past ten years, coded 1 for yes and 0 for otherwise. All categorical (nominal) variables were dummy coded to avoid any substantial violation of the assumptions of discriminant analysis (see Klecka, 1980). Other predictor variables measured at least at ordinal and interval/ratio levels are: (1) the respondents' level of education (1 = less than eight years, 2 = completed grade school, 3 = some high school, 4 = completed high school, 5 = some college, 6 = completed college, 7 = some graduate school, 8 = completed MA/MS, and 9 = completed Ph.D.); (2) reported average gross family income with the following ranks: 1 = under \$5,000, 2 = \$5,000 to 9,999, 3 = \$10,000 to 14,999, 4 = \$15,000 to 19,999, 5 = \$20,000 to 24,999, 6 = \$25,000 to 29,999, 7 = \$30,000 to 39,999, 8 = \$40,000 to 59,999, and 9 = \$60,000 and above; (3) age measured in years last birthday; (4) number of years lived in Baton Rouge; (5) perceived seriousness of toxic waste problem in Baton Rouge measured on a scale of 1 to 5, with 1 indicating not at all serious, and 5 indicating extremely serious; (6) perceived concentration of toxic waste; and (7) toxic waste as a major environmental hazard to residents, measured on a Likert type scale of "strongly agree" to "strongly disagree," to the statements "Baton Rouge has the highest concentration of toxic waste in Louisiana," and "toxic waste represents the major environmental hazard to the health of the residents." For the logistic regression model, reported toxic waste-related health problems in Baton Rouge SMSA in the past 10 years was the dependent variable. In addition to the predictor variables specified above, residence proximity to hazardous waste facilities and incidence of environmental illness of family members (coded as yes = 1, and no = 0) were included as control variables.

FINDINGS

Table 1 reports the means and standard deviations for the variables in the residential proximity or nonproximity to hazardous waste facilities discriminant model. The socioeconomic and demographic characteristics of the respondents reporting living close to hazardous facilities show that they had lower average family incomes, lower levels of education, and were younger in age, mostly Blacks and long term residents of Baton Rouge relative to the nonproximity to hazardous waste facilities group. The standard deviations of the characteristics are in parenthesis. A close examination of the means and standard deviations for

Table 1. Group Means and Standard Deviations of Predictor Variables of Residential Proximity to Hazardous Waste Sites

<i>Predictor Variables</i>	<i>Proximity to HWS</i>	<i>Nonproximity to HWS</i>
Race (Black = 1, White = 0)	.382 (.490)*	.236 (.426)
Sex (male = 1, female = 0)	.471 (.503)	.333 (.473)
Level of education	4.868 (1.455)	5.118 (1.254)
Average family income	\$33,454.96 (\$18,733.45)	\$35,450.48 (\$17,836.92)
Age last birthday	40.426 (15.587)	42.368 (17.469)
Number of years lived	25.618 (17.033)	24.881 (17.016)
Marital status	2.073 (1.364)	2.047 (1.237)
Seriousness of toxic waste problem (1 = least, 5 = most serious)	4.279 (.729)	3.910 (.945)
Perceived concentration of toxic waste	2.779 (.960)	2.444 (1.181)
Toxic waste as a major environmental hazard to residents	3.015 (.889)	2.910 (1.003)

*Group standard deviations are in parentheses. n = 213.

seriousness of toxic waste, perceived concentration of toxic waste, and perception of toxic waste as a major environmental hazard suggests that the proximity group saw toxic wastes as a greater threat than the non-proximity group.

Race and Residential Proximity to Hazardous Waste Facilities

Is race a significant factor in predicting residence proximity to hazardous or toxic waste facilities? The first item used to address this question in (H_1) was the self-reported racial identity of the respondents. The second variable concerns whether the respondents reside near hazardous waste facilities and petrochemical plants or not. Other socioeconomic and demographic variables, including education, family income, age, and sex, are shown in Table 1. Since the percentage of minorities other than Blacks in the sample was only 1.4 percent, the variable race was recoded as a dichotomous variable showing the Whites (68.07 percent) and Blacks [30.53 percent +(1.4 percent others)] categories only. As mentioned above, multivariate discriminant analysis was performed in order to determine demographic, socioeconomic, and attitudinal predictors of: (1) residential proximity to hazardous waste facilities and (2) group differences on the perception of petrochemical industry as a health threat. Discriminant analysis, as a statistical method for evaluating the differences between two or more

groups (G_i) of categorical variables and their relationship with several discriminating variables, was appropriate for the analyses in this study. Since there were only two discriminant groups in the model, only one discriminant function was possible (see Klecka, 1980; McLachlan, 1992).

The standardized discriminant functions, Wilks' lambda, Fisher's classification coefficients, pooled-within-group correlation (structure) coefficients, F-ratios, and level of statistical significance calculated for each variable in the model are shown in Table 2. In the discriminant analysis of residence proximity to hazardous waste sites (HWS), the group means (centroids) indicated that the first and only one function differentiated clearly between proximity and non-proximity of respondents to hazardous waste facilities. Hazardous waste propinquity group was in positive pole [.458] while nonpropinquity group was in weak negative pole [-.216] on a theoretical [Euclidean] geometric plane. The standardized coefficients were used to determine which variables contributed most to determining scores on the discriminant function. Focusing on the standardized coefficients (ignoring the signs), sex (males) [.543] and perception of the seriousness of toxic waste [.536] were the most significant predictors of residential proximity to hazardous waste sites (HWS). Perceived concentration of toxic waste was also statistically significant. Contrary to expectation, average family income and level of education were not significant in predicting HWS propinquity even though they were in hypothesized negative direction (based on their structure coefficients). In Table 2, the variable "marital status" was dropped for lack of statistical significance (and this improves the classification results from 61.5 percent to 62.44 percent correct classification [see Appendix 1]). Thus, the results strongly support the hypothesis (H_1) that race and residential propinquity are related. The hypothesis (H_2) only found very weak support in light of the non-significant coefficients of income and level of education in the residence propinquity to HWS discriminant model. Contrary to expectation, perception of seriousness of toxic waste problem and opinion regarding the concentration of toxic waste are significant positive predictors of residential propinquity to hazardous waste sites.

From the tables above, it appears that poor Black males living in highly polluted neighborhoods may have been less likely to have knowledge about the seriousness and consequences of toxic waste, even though they may have been aware of these problems in their community. These findings are consistent with and further reinforce those cases reported by Bullard (1990), Mohai (1990), Mohai and Bryant (1992a and 1992b), Bailey and Faupel (1992), Collin (1992), and Wernette and Nieves (1992) concerning the demographics of hazardous waste distribution in other parts of the country.

In Table 2, the discriminating variables relevant to residential proximity to hazardous waste facilities have been delineated as shown by Fisher's discriminant coefficients and the standardized discriminant function coefficients. Also, there was a statistically significant relationship between race (Blacks), sex

Table 2. Discriminant Analysis of Socioeconomic and Demographic Predictors of Residence Proximity to Hazardous Waste Facilities

<i>Discriminant/Predictor Variables</i>	<i>Standardized Coefficients (Within Group)^a</i>	<i>Fisher's Coefficients</i>		<i>Wilks' Lambda</i>	<i>F-Ratio</i>	<i>Significance</i>
		<i>G₁</i>	<i>G₂</i>			
Intercept	—	-28.10	-26.02	—	—	
Race (Black = 1, White = 0)	.506** (.485)	1.12	.36	.977	4.9	.03**
Sex (male = 1, female = 0)	.543** (.422)	3.48	2.72	.983	3.7	.05**
Level of education	-.286 (-.281)	2.70	2.85	.992	1.7	.19
Average family income	-.013 (-.208)	.77	.77	.995	1.0	.31
Number of years lived in Baton Rouge	-.103 (-.064)	.6E-01	.7E-01	.999	0.9E-01	.77
Neighborhood change	.161 (.195)	4.85	4.68	.996	.8	.37
Seriousness of toxic waste	.536*** (.622)	4.69	4.29	.963	8.1	.00***
Concentration of toxic waste	.200** (.446)	1.20	1.08	.981	4.17	.04**
Group means (centroids):						
Group 1. Proximity	.458					
Group 2. Nonproximity	-.216					
Eigenvalue	.108					
Canonical correlation	.301					
Model's Wilks' lambda	.909***					
X ² (chi-square)	19.601***					

n = 213. **p < .05, ***p < .01 levels of F-significance.

^aPooled within-groups correlations between discriminating variables are in parentheses. The percent of "grouped" cases correctly classified = 62.44 (see Appendix A for details).

(males) and living close to hazardous waste facilities such as dump sites, sewage treatment plants, and petrochemical facilities. The findings confirm Hypotheses 1 and 2 that, (a) race was a statistically significant predictor of residence proximity to hazardous waste sites; and (b) although level of education and average family income were inversely related to living in polluted neighborhoods as expected, controlling for the effects of these variables did not explain away the independent effect of race. Thus, race (Blacks), sex (males), perceptions of seriousness and concentration of toxic waste were important discriminating factors predicting residential proximity to hazardous waste independent of socioeconomic factors. The canonical correlation of the model [.301], an overall Wilks' lambda of .909, and chi-square obtained value of 19.601 were statistically significant at p < .01. A plausible explanation for the magnitude and statistically significant coefficients of perceptions of seriousness and concentration of toxic waste variables is that, even though most black residents of polluted communities may recognize the extent of pollution in their surroundings,

because of more pressing social problems (such as unemployment, education, crimes, and lack of resources), hazardous waste sites, pollution, and occupational hazards may have been considered the least of their problems.

Table 3 presents a multivariate discriminant model of respondents' scores on whether the petrochemical industry is a threat to environmental health. The dichotomized "agree" and "disagree" groups are the basis of discrimination in conjunction with the demographic and socioeconomic predictor variables (previously defined). In addition, marital status (coded as 1 = married, 0 = otherwise), family member(s) with environmental illness in the past ten years (1 = yes, 0 = no), and residential location (coded as 1 = proximity to HWS and 0

Table 3. Discriminant Analysis of Socioeconomic and Demographic Variables Predicting Group Perception of Petrochemical/Hazardous Waste Industry as a Health Threat

Discriminant/Predictor Variables	Standardized Coefficients (Within Group) ^a	Fisher's Coefficients		Wilks' Lambda	F-Ratio	Significance
		G ₁	G ₂			
Intercept	—	-35.41	-39.34	—	—	—
Race (Black = 1, White = 0)	.515 (.535)	1.79	2.79	.967	7.107	.008***
Sex (male = 1, female = 0)	.193 (.435)	4.20	4.54	.999	.28E-02	.957
Level of education	.227 (.067)	2.55	2.69	.999	.113	.737
Average family income	-.513 (-.409)	.69	.50	.981	4.164	.043**
Number of years lived in Baton Rouge	.403 (.418)	.5E-01	.4E-01	.999	4.337	.039**
Seriousness of toxic waste	.308 (.435)	5.08	5.38	.978	4.699	.031**
Concentration of toxic waste	.270 (.345)	1.28	1.49	.986	2.966	.086*
Neighborhood change	.403 (.418)	4.88	5.44	.980	4.337	.038**
Marital status	.170 (-.111)	1.39	1.68	.998	.308	.579
Family member with EI	.277 (.243)	.93E-01	.706	.993	1.467	.227
Residential location	.398 (.113)	10.41	11.14	.998	.316	.575
Group means (centroids):						
Group 1. Not a threat	-.689					
Group 2. Major threat	.170					
Eigenvalue	.118					
Canonical correlation	.325					
Model's Wilks' lambda	.894***					
X ² (chi-square)	22.883***					

n = 213. *p < .10, **p < .05, ***p < .01 levels of F-significance.

^aPooled within-groups correlations between discriminating variables are in parenthesis. The percent of "grouped" cases correctly classified = 66.20.

otherwise) are included as control variables. The standardized coefficients and the structure matrix (pooled-within-groups) coefficients show that race was the most significant discriminating variable ($sc = .515$) at $p < .01$, followed by average family income ($sc = -.513$, $r = -.409$), number of years lived ($sc = .403$, $r = .418$) and perceived seriousness of toxic waste ($sc = .308$, $r = .435$) respectively significant at $p < .05$ level. Perception of concentration of toxic waste was significant only at $p < .10$. The model's eigenvalue of .118 showed a very weak discrimination among the variables used. Also, the canonical correlation coefficient of .325, which summarizes the degree of association between the groups and the discriminant function, was weak. Nevertheless, the model's overall Wilks' lambda and chi-square were significant at $p < .01$ level. Thus, Hypothesis H_3 , which relates the level of income negatively to the perception of petrochemical industrial activities as a health threat, found strong support in the analysis, especially focusing on the pooled-within-groups correlation coefficient of $-.409$ at $p < .05$.

Potential Environmental Health Problems in the Baton Rouge Area

As mentioned earlier, there are many health problems related to environmental hazards in those areas designated as the *cancer corridor* of Louisiana (Brown, 1987; Griffin, 1988). The extent to which residents are knowledgeable about specific health conditions due to environmental pollution is not clear in the literature. Table 4 presents a summary of several items eliciting respondents'

Table 4. Perceptions of Toxic Waste-Induced Diseases in Baton Rouge

Toxic Waste-Related Diseases	Percent Responses*				
	ML 4	L 3	UL 2	MU 1	DK 0
Bladder problems	20.2	45.1	23.5	7.5	3.8
Breast cancer	14.1	34.3	33.8	10.3	7.5
Cervical uterine cancer	10.8	23.9	22.1	34.3	8.9
Childhood leukemia	18.3	36.2	14.1	23.9	7.5
Corpus uterine cancer	8.5	22.5	21.1	30.5	17.4
Fetus abortion	32.9	39.0	15.0	4.7	8.5
Fetus deformation	38.0	41.3	10.3	3.8	6.6
Kidney inflammation	19.2	43.2	20.2	5.2	12.2
Liver inflammation	23.0	39.0	18.8	5.6	13.6
Lung cancer	55.9	38.0	6.1	0.0	0.0
Mental disorder	12.1	37.1	31.5	10.8	8.5
Nervous disorder	16.4	50.2	20.7	5.2	7.5
Oral cavity	5.2	23.0	23.0	37.6	11.3
Pancreatic cancer	19.7	55.4	13.6	3.8	7.5
Prostate cancer	11.3	33.8	19.2	24.4	11.3
Skin cancer	35.7	39.0	16.0	7.5	1.9
Stomach cancer	16.4	51.2	17.4	5.6	9.4

*ML = Most likely, L = Likely, UL = Unlikely, MU = Most unlikely, and DK = Don't know. $n = 213$.

perceptions of various human health problems related to toxic waste. With the exception of cervical uterine cancer, corpus uterine cancer, and oral cancer, the major health problems presented to the respondents were perceived to be likely to most likely related to toxic waste exposures. Combining responses in these two categories (%ML + %L), the majority of the respondents identified lung cancer (93.9 percent), fetus deformation (79.3 percent), pancreatic cancer (75.1 percent), skin cancer (74.7 percent), fetus abortion (71.9 percent), stomach cancer (67.6 percent), and nervous disorder (66.6 percent) as likely to most likely related to high level of toxic waste exposure. Other problems perceived to be associated with toxic waste by the respondents include kidney inflammation, liver inflammation, bladder and urinary problems, and childhood leukemia (see Adeola, 1994).

The Logistic Regression Model

To address the theoretical questions in H_4 and H_5 (gender and socioeconomic effects on environmental morbidity/illness), a logistic regression using Maximum Likelihood Estimates (MLE) of environmental illness (reported incidence of health problems due to hazardous or toxic waste exposure) on sociodemographic characteristics was performed. The dependent variable—reported actual event of environmental illness (EI)—was coded: yes = 1 and no = 0. A logistic model expressed as the log of the odds generally takes the following form:

$$\log P \left(\frac{1 \text{ event}}{0 \text{ event}} \right) = B_0 + B_1 X_1 + \dots + B_p X_p \quad (\text{Eq. 1})$$

Where: $P(1 \text{ event})$ = the log of odds of event of EI

$P(0 \text{ event})$ = the log of odds of 0 EI event

B_0 and B_i = parameter estimates; and

X_i = the vector of characteristics constituting the dependent variables.

However, in order to facilitate easier interpretation of results, the above model was re-written in terms of the odds of EI event as:

$$P_{ij} = \frac{\text{Exp}(\sum B_{ij} X_{ij})}{1 + \text{Exp}(\sum B_{ij} X_{ij})} \quad (\text{Eq. 2})$$

Where: P_{ij} = the probability of EI

B_{ij} = parameter values estimated (logistic regression coefficient for i predictors)

X_{ij} = the vector of independent variables including race (dummy), sex (dummy), level of education, average family income, age, years of residence, perceptions of major environmental hazard, seriousness of hazardous waste problems, family member(s) with environmental health problem (dummy),

residence proximity to hazardous waste sites (dummy), and concentration of toxic waste in the environment are as previously defined.

Each logistic regression coefficient was expressed as a power, such that each exponent of B_i indicates the factor by which the odds change when the independent variable (X_i) is increased by one unit (see Aldrich & Nelson, 1984; Hosmer & Lemeshow, 1989; Demaris, 1992, p. 45). Similar to Ordinary Least Squares (OLS) regression, the $\text{Exp}(B_i)$ represents the estimated multiplicative change in the odds for a unit increase in the i^{th} predictor {or $100[\text{Exp}(B_i) - 1]$ is the estimated percentage change in the odds for one unit increase in the i^{th} predictor}.

The results of the analysis are displayed in Table 5 and the parameter estimates include the B_i and $[\text{Exp}(B)$ in parenthesis], standard errors, R, and Wald's statistics. Focusing on B_i and $\text{Exp}(B)$ while controlling for other predictors in the model, level of education, average family income, number of years lived in Baton Rouge, and family member(s) with environmental illness were the most significant variables in predicting the odds of EI. The logistic coefficients for these variables were in the expected direction judging from their respective R's. In this model, a unit change in "family member(s) with EI" translates into a negative ($B = -2.236$) log of odds and a $[\text{Exp}(B) = 9.3]$ decrease in the odds of environmental illness. It appears that once a family member encountered EI event, necessary measures were most likely to be taken to prevent any other members from exposure to the toxic environment. Race had a positive (albeit) nonsignificant partial effect on the odds of EI with ($B = .383$) and $[\text{Exp}(B) = 1.467]$. The parameters of predictor variables of sex (male = 1, female = 0), level of education, income, and perception of seriousness of toxic waste problems in Baton Rouge area were in the hypothesized directions according to the Rs. The odds of EI for males was higher than for females [$B = .166$, $\text{Exp}(B) = 1.181$] and a unit increase in the level of education implies a negative ($B = -.388$) log of odds and $[\text{Exp}(B) = 1.474]$ change (or decrease) in the odds of EI. These predictor variables are statistically significant at $p < .05$ level. As expected, number of years lived in the study area was an important determinant of the odds of EI. For instance, a unit increase in years of residence meant a 1.025 increase in the odds of environmental illness and this supports hypothesis H_6 , which links duration of residence directly to higher likelihood of EI.

Even though Blacks (males) were most likely to live in polluted communities and most likely to experience EI, socioeconomic factors such as income and education were also important variables in predicting the odds of environmental illness. As hypothesized, the results in Table 5 show that the higher the level of income, the lower the probability of EI; and the higher the level of education attainment, the lower the odds of environmental illness. For instance, a unit

Table 5. Logistic Regression of Reported Environmental Illness on Demographic and Socioeconomic Variables

Predictor Variables	Parameter Estimate(s)			
	B (Exp(B)) ^a	S.E.	Wald's Statistic(s)	R
Constant	-4.020	1.98	4.13	—
Race (Black = 1, White = 0)	.383 (1.467)	.49	.61	.000
Sex (male = 1, female = 0)	.166** (1.181)	.44	.14	.000
Level of education	-.388** (1.474)**	.18	4.80	-.117
Average family income	-.154* (.857)*	.09	2.40	-.040
Age last birthday	.010 (1.010)	.02	.39	.000
Years lived in Baton Rouge	.025* (1.025)*	.02	2.33	.000
Perceived seriousness of toxic waste	-.147 (.863)	.27	.29	.000
Perceived concentration of toxic waste	-.092 (.912)	.22	.17	.000
Perception of toxic waste as a major environmental hazard	-.099 (.905)	.27	.14	.000
Family member(s) with environmental illness in the last ten years	-2.236*** (9.302)***	.43	26.40	-.343
Residence proximity to chemical plants/dump sites	.346 (1.413)	.44	.63	.000
Model's X^2 (chi-square)	43.673***			
<i>df</i>	(11)			
Overall percent correct classification	85.38%			

$n = 212$. * $p < .10$, ** $p < .05$, and *** $p < .01$ level of significance respectively.

^aExp(B) coefficients are in parentheses.

increase in level of education implies a ($B = -.388$) log of odds and [$\text{Exp}(B) = 1.474$] decrease in the odds of EI ($p < .05$). Thus, Hypotheses H_4 , H_5 , and H_6 were strongly supported by the results of the logistic model. The model's chi-square (X^2) of 43.673 with 11 degrees of freedom was significant at $p < .01$ level and an overall correct group classification of 85.38 percent was achieved (see Appendix 3 for more details). The change in the logistic coefficients upon deletion of a case from the model (or DFBETA) was applied as a diagnostic tool and the results did not show any large values to suggest influential data points (see Myers, 1990).

DISCUSSION AND CONCLUSIONS

In this study, the hypothesis that gender (male) positively predicts the odds of reported environmental illness was supported. If Blacks were most likely to reside near hazardous waste sites, it might appear their odds of exposure to xenobiotics and EI will be higher than their White counterparts. However, this assertion was not strongly supported by the present analysis. The findings support H_4 , H_5 , and H_6 and perhaps, the delineation of Baton Rouge and its periphery as the core of the cancer corridor of the South. Most of the perceived health conditions associated with actual morbidity experience can be traced directly to petrochemical industrial pollution via air, land, and underground water contamination in the area. Unfortunately, establishing direct correlations between specific health conditions and petrochemical industrial pollution is beyond the scope of this study.

Both in the discriminant and logistic models, the independent effects of race (Black) and sex (male) on hazardous waste site propinquity and environmental illness were statistically significant. While average family income, level of education, and sex were significant determinants of the odds of environmental illness, the independent effect of race did not approach any acceptable level of significance in the logistic model. It must be noted, however, that Blacks and other minority groups may be less likely to have first-hand medical information concerning threatening environmental conditions. Even though Blacks were most likely to live next door to hazardous waste sites, through the process of diffusion, the entire population of Baton Rouge SMSA may be at risk of problems associated with high level of pollution. As Collin (1992, p. 3) indicates, siting hazardous waste facilities near residential land uses may reduce the quality of life and the market values of the neighborhood and the surrounding communities.

The primary objective of the study was to assess the influence of race and other demographic and socioeconomic factors influencing residential propinquity to hazardous waste facilities and environmental illness among the Baton Rouge SMSA residents. Both in the multivariate discriminant and logistic regression models, race and gender were found to be strong and statistically significant determinants of residence proximity to hazardous waste sites and the probability of environmental illness. In the discriminant model of hazardous waste site propinquity, race and sex were more influential than socioeconomic variables such as average family income and education. These findings suggest that to be Black (or minority), male, with a low level of education, (even with good perception of toxic waste as a major health hazard) is to be predisposed to higher risks of exposure to toxic and hazardous chemical releases. Emphasis on public education about environmental hazards and possible health problems consequent upon exposure to toxic waste is needed, since the members of the hazardous facility proximity group have less education, lower average family

income, and are younger than the nonproximity group. This type of environmental health education at the community level will help the minority groups develop better environmental consciousness. It will also help the entire population to push for efforts to mitigate unacceptable levels of pollution in the environment.

Race was related to residential proximity to hazardous waste facilities, as Blacks were found to live closer to hazardous waste sites than Whites. Race and sex were also related to environmental illness but the independent effect of race is non-significant as mentioned earlier. Due to low levels of education, and the lack of exposure to medical information, most respondents residing near hazardous waste sites were at risk of environmental illness. Judging from the respondents' average family income ranging from \$33,454 to \$35,450, and their average level of education (some college), however, the scope of coverage of the RDD telephone survey conducted yields information on the working class to middle class segment of the population. Thus, under-representation of low income Blacks was possible. Based upon the limitations of this study, a stratified or cluster sample of neighborhoods at risk, practical measures of pollution and extent of exposure, and unstructured or semi-structured personal interviews are recommended for future research.

There is a critical need to look at actual illnesses by race, ethnicity, gender, geographical location, duration of residence, and extent of environmental contamination and exposures. Other than anecdotal evidence of a linkage between environmental racism, hazardous waste distribution, and specific event of environmental illness, there is a dearth of knowledge concerning various aspects of xenobiotics, environmental toxicity, and their manifestations in human physiological and psychological systems. Currently, the available statistics on the causes of death do not provide enough breakdown to allow a systematic examination of deaths due to toxic waste and other environmental hazards. Government efforts at the state, county (or parish), and community levels aimed at detecting clinical and sub-clinical effects of exposure to toxic or hazardous agents in the environment, are grossly inadequate. Findings from this research suggest the need for a policy aimed at the issue of environmental justice and the need for Blacks, Hispanics, Indians, and other ethnic minorities to be more environmentally conscious and guard against the imposition of undue environmental burden on their communities. Through environmental education and collective grass-roots efforts, mobilization of resources to combat and mitigate undue hazardous waste distribution, environmental inequity/racism, and associated health problems can be achieved.

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APPENDIX A

Table A. Discriminant Analysis Classification Results of Residential Proximity and Non-Proximity to HWS Groups

<i>Actual Group</i>	<i>N of Cases</i>	<i>Predicted Group Membership</i>	
		<i>G₁</i>	<i>G₂</i>
Group 1	68	45 (66.2%)	23 (33.8%)
Group 2	145	57 (39.3%)	88 (60.7%)

Percent of "grouped" cases correctly classified = 62.44%

n = 213.

APPENDIX B

Table B. Discriminant Analysis Classification Results of Petrochemical Industry as Health a Threat or Opportunity

<i>Actual Group</i>	<i>N of cases</i>	<i>Predicted Group Membership</i>	
		<i>G₁</i>	<i>G₂</i>
Group 1	42	29 (69.0%)	13 (31.0%)
Group 2	171	59 (34.5%)	112 (65.5%)

Percent of "grouped" cases correctly classified = 66.20%

APPENDIX C

Table C. Logistic Regression Classification Results of EI and Non-EI Groups

<i>Observed</i>	<i>Predicted</i>		<i>Correct Percent</i>
	<i>(1) EI</i>	<i>(2) Non-EI</i>	
Environmental Illness (EI) 1	19	23	45.24
Non-Environmental Illness 2	9	161	94.71
Overall correct classification			84.91
Model chi-square			43.17***

n = 212. ***p < .01 significance.

COMMUNITY CHANGE AND PERSISTENCE: THE CASE OF EL CERRITO, NEW MEXICO

By Clyde Eastman and Richard S. Krannich

ABSTRACT

El Cerrito, New Mexico, has since 1939 been the subject of nine published studies and one doctoral dissertation. This qualitative analysis synthesizes those studies, adding recently collected primary data. The population declined from 135 persons in 1940 to five elderly adults in the late 1960s. Since 1970 a turn-around has occurred. By 1992 nine households were occupied full-time and two occupied part-time. El Cerrito's location between Santa Fe and Las Vegas is a major factor in its revitalization. Both are within acceptable commuting distance for workers. At the same time, it is just isolated enough to have a special appeal to several multi-talented residents who have been instrumental in obtaining funds to improve community infrastructure. Another key factor appears to be the remarkable level of psychological identification with this community. El Cerrito's resurgence illustrates the crucial role of locally-initiated effort in development outcomes that might otherwise seem implausible.

INTRODUCTION

The village of El Cerrito, New Mexico, was selected by Olen Leonard and Charles Loomis in 1939 to be part of the USDA-sponsored Rural Life Studies series. El Cerrito must have provided an appropriate setting to study the processes of community change and persistence, being the subject of no fewer than nine published works during the ensuing half century (e.g., see Loomis, 1941, and Loomis, 1959), including a recent doctoral dissertation (Heffington, 1992).¹ The village has also been the focus of discussion in textbooks and

¹ The current residents of El Cerrito appear remarkably unaffected by the long stream of academics who passed through their village. Perhaps even more remarkable is that such types are still welcomed into the village. Older residents seem to appreciate outsiders' interest in the village history and are usually willing to talk at length about it. Everyone is familiar with Rusinow's photo essay (1942); several copies are in the village. Residents are also aware there are other publications but they are less impressed by them. Younger males occasionally feel compelled to confront a visitor with a ritual hostility during which the intruder's motives are challenged and ridiculed. Five to ten minutes of such treatment is usually deemed sufficient, after which even these males usually become talkative and friendly.

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theoretical works addressing community issues. In the benchmark work, *The Community in America*, Roland Warren (1978) draws upon the 1940 analysis of El Cerrito to illustrate his model of a *stable* community.

However, the persistence of scholarly interest was not paralleled by a sustained viability of the village, and gradually El Cerrito withered. By the late 1960s most observers would have considered El Cerrito a very likely candidate to become another New Mexico ghost town. Indeed, during that time it had disappeared from many New Mexico road maps. Even though it is back on some road maps today, it remains accessible only by two unmarked, unsurfaced roads that wend their way across piñon-juniper studded mesas toward the Pecos River canyon.

To the surprise of many observers, El Cerrito not only survived but is currently flourishing on a modest scale. Other small rural New Mexico communities have experienced substantial development, some like Ruidoso based on recreation. A number of others in the rural hinterland of the state's three growing metropolitan areas have also experienced population growth. This study traces the decline, rebirth and continuing revitalization of the village and identifies factors which were instrumental in that revitalization. While this study suffers the same limitations in generalizability that all case studies do, it provides a well documented 50 year longitudinal dimension which few studies can match. This qualitative analysis is based on a synthesis of the previous studies and on recently collected primary data. A modified version of Warren's model (1978) is used to guide the analysis of the *great change* in El Cerrito since 1940.²

The Decline

Schedules from the 1900 Census clearly identified El Cerrito and provide an early quantitative benchmark on the community. In that year, the population was 136 persons in thirty families. Eighteen heads of household listed their occupation as "stockman", four were "day laborers", two were farmers, one was a blacksmith, one a carpenter and four who were 65 or older listed no occupation (Nostrand, 1982, p. 111). Sheep were grazed widely on the surrounding mesas before the commons of the old Spanish land grants were enclosed. Olen Leonard (1970) described that process in detail and concluded that the loss of the grazing land more than anything else doomed El Cerrito's basic economy.

Field work for the initial academic study of El Cerrito was conducted in late 1939 and 1940 (Leonard & Loomis, 1941; Rusinow, 1942). The population at that time was 135 persons living in 21 families (Nostrand, 1982, p. 112). All families owned their homes and some irrigated land, but only two families owned substantial numbers of sheep or cattle at that time. Clearly, livestock raising was much more important in 1900 than in 1940. Most residents eked out

² Restudies of the other five communities in the original Rural Life Series are occurring concurrently with this analysis. A comparative analysis of the six is planned.

a bare subsistence from their irrigated land, from some dry farming on the surrounding mesas and from sporadic work outside the village. Residents clung tenaciously to their holdings and life in the village well after the economic handwriting was clear and major change was inevitable (Nostrand, 1982, p. 113).

The national economic recovery associated with World War II opened the door of opportunity for able-bodied male Cerritoans. The men were able to find work if they were willing to relocate to growing urban industrial centers. After becoming established, many moved their families out of El Cerrito to a new life in the city with large numbers of Cerritoans relocating to Pueblo, Colorado. They found jobs in steel mills, an arsenal and other places. When Loomis conducted his restudy in 1956, only four families and four old couples were in residence; of these only three or four households planned to stay in the village (1958, pp. 55,71–72). The population decline continued until the end of the 1960s when only five people in two households remained (Nostrand, 1982, p. 113). Residents at that time were pessimistic about the future of the village. However, that pessimism opened the door for another significant change which was the harbinger of a resurgence of the village over the course of the next two decades.

Rebirth

New Mexico, particularly the rural North, was discovered in the late 1960s by a population group representing a new phenomenon in America. The rebellious youth of that era who started a counter-cultural revolt against many of society's accepted norms found New Mexico's unique cultural melange and wide open spaces very appealing. For the "hippie" generation from Haight-Ashbury to the East Village and points between, northern New Mexico was definitely an "in" place to spend at least a summer or even to settle permanently. That influx concentrated around Santa Fe and Taos but also infiltrated surrounding rural environs. Whether those who found their way into El Cerrito were hard core or fringe elements of the movement, these primarily Anglo outsiders found in El Cerrito an isolated rural setting which lived up to many of their ideals. And they encountered land owners who were willing for the first time to sell village houses and land to Anglo outsiders. El Cerrito integrated; for the first time in its history Anglos bought property and took up residence in the village. This was in sharp contrast to the earlier reluctance to sell village land to outsiders noted and discussed by Leonard and Loomis (1941, pp. 7–8).

Nostrand recounts several of the earliest interactions between established residents and the newly arrived immigrants (1982, p. 113). Several itinerants came and went, but in late 1971 an Anglo couple moved into the village and remained for 20 years. They were joined a few years later by an Anglo bachelor and by other Hispanics without previous connection to the village. These people were part of a group of nine *outsiders* who bought several houses and parcels of land as "El Cerrito Tenants in Common." This tenure arrangement could be characterized as "quasi-communal." El Cerrito Tenants in Common was formed

at the time that communes were sprouting like wildflowers all over northcentral New Mexico. Although the land continued to be held in common until 1990, the owners lived and operated in separate households. Moreover, not all buyers were interested in alternative lifestyles or communal landholding. A retired Anglo couple from Albuquerque also bought two house lots and 6 or 7 acres of irrigated land. The widow currently rents the irrigated land to a resident for pasture, while the ruins of a dwelling on one lot remain undeveloped.

Coincidental with the outsiders' discovery of El Cerrito, a few former residents also returned to the village. The extended Aragon family, in particular, maintained and expanded their holdings and formed the backbone of the *acequia* (irrigation ditch) maintenance effort during those years of low ebb.

By 1980, eleven people were residing in five households in El Cerrito. The Anglo couple, resident since 1971, was very much integrated into community life. Among other activities he was elected president of the *acequia* association, and she was in charge of the community well (Nostrand, 1982, p. 115). The Anglo bachelor also quickly integrated into the community and has provided active leadership in several activities. In addition to the permanent residents, Nostrand identified fourteen non-resident families who owned houses in El Cerrito in 1980. Many of these people were returning to the village frequently to irrigate, look after their cattle, and to maintain their properties. Half of them planned to retire in El Cerrito (Nostrand, 1982, p. 115).

Continuing Revitalization

The physical appearance of El Cerrito has changed remarkably little from 1940 to 1992. One can take the cover photo on the Leonard and Loomis report (1941) to the spot where it was taken and recognize most of the structures today. A few roof lines have changed, the only two-story structure is now in ruins, and there are two or three new houses. The most extensive renovation and expansion of a single dwelling within the village was undertaken in 1992. Less ambitious and less visible work continues on several other dwellings. Clearly the housing stock is being enhanced. Renovations are slowly out-pacing deterioration and have for two decades or more. The Catholic church has been physically maintained over the years but is used only very occasionally. The institution has certainly diminished in influence in this village since the time of the first study. The village cemetery, on a hill over-looking the irrigated land, has a few recent graves. The desert landscape requires and receives little care.

Although there has been movement both in and out of the village, the population is slowly increasing. There were more households and more people in 1992 than in 1980. Nine households were in continuous residence, with two others dividing their time between El Cerrito and urban residences. In addition to the retirees, several residents commute to jobs in Las Vegas and Santa Fe, while one multi-talented man depends on various construction projects for his income. With over 30 residents and an increasingly diverse mix of children,

adolescents, working-age adults, and retirees, the community is more vibrant than at any time during the past 40 years.

Cultural changes have occurred in response to shifts in population, size and composition. While Spanish is still spoken extensively in some households, English is the language everyone can use. A substantial part of the present population had no direct ties to El Cerrito before coming there to live, yet significant elements of the traditional culture remain and are being perpetuated. Although several residents may not speak much Spanish, they have acculturated in subtle ways until today there is an easy accommodation between Anglo and Hispano in the village. Disharmonies occur, but they involve personalities or families rather than ethnic lines.

WHY EL CERRITO?

Why would this isolated, resource-poor, postage stamp sized piece of real estate come back from the very brink of extinction, when communities with seemingly better prospects continue to decay? No government program can take credit for this turn around, and no foundation or wealthy benefactor was involved in any significant way. A combination of critical factors have contributed to the outcome unfolding in the 1990s. El Cerrito is definitely not static. The community is dynamic, and this will certainly not be the last published study in the long saga of El Cerrito.

Roland Warren (1978, pp. 98–105) used El Cerrito as a case to illustrate a community that had experienced little change of the kinds he described in three other case examples. However, he confined his analysis to the material in Leonard and Loomis' (1941) original report. Subsequent work cited above documents the thoroughgoing changes in El Cerrito from the early 1940s onward. This study applies eight characteristics of Warren's paradigm to the "great change" in El Cerrito since 1940.

Division of labor certainly increased markedly in El Cerrito in the years after Leonard and Loomis conducted their research. Whereas there was little specialization except by gender in old El Cerrito, the influx of outsiders brought critical new skills into the community. In old El Cerrito, the men had livestock handling and farming skills and were able to repair the limited assortment of basic tools they used. Beyond the village, they worked as day laborers in agriculture or on the railroad. Their marginal proficiency in English limited their occupational mobility. In marked contrast to the *old timers* were the *outsiders* who began to arrive in the 1970s. In addition to having a wide array of mechanical skills that so many moderns have lost, the new arrivals brought grantsmanship skills and the ability to negotiate effectively with various government bureaucracies. That talent is lacking in many small rural communities.

It appears that the isolated location attracted a certain group of multi-talented people who were less inclined to move into more accessible communities.

Before moving to El Cerrito, several of the *outsiders* were involved in management/administrative positions in a variety of businesses and government agencies. The outsiders' critical contribution was their ability to effectively link El Cerrito into county, state and federal agencies and to obtain substantial resources for the village. By various combinations of people over a substantial period of time, money and assistance has been obtained to improve and extend the community's culinary water system, repair and improve the irrigation system, improve the roads and build a new Pecos River bridge to replace a bridge previously rendered unusable by a flood. While the money came from outside, the initiative to complete the projects came from within El Cerrito.

Two recent projects illustrate the critical role played by newer residents with skills in dealing with the State Highway Department and the Corps of Engineers. The new dam and headworks for the irrigation system and the new bridge cost approximately $\frac{3}{4}$ million dollars. The new dam and headworks required matching contributions, but the village's contributions were relatively small. Without these outside investments in infrastructure the community would have had difficulty surviving, let alone flourishing as it has. Without very effective linkages provided by its residents, it is difficult to imagine this magnitude of resources flowing into such a small, isolated community. Thus, El Cerrito provides an example of a community whose residents took their destiny into their own hands and changed the course of their history.

Interests and associations have differentiated markedly as all residents now have many direct connections with outside groups. The archaic, insular social structure that Leonard and Loomis encountered no longer exists. The outside world intrudes pervasively into the village in a variety of ways. Children go out of the village to attend school, people commute to Las Vegas and Santa Fe to work, there are telephones in most homes, and television is beamed in via satellite. Everyone in the village has lived outside in the Anglo world for an extended period. The outside associations are diverse. For example, during the summer of 1992 one resident attended the defense of a doctoral dissertation on El Cerrito in Norman, Oklahoma. In the past, people lived in El Cerrito because it was familiar and because the Anglo world required a language and customs they were not comfortable with. Now, they are experienced with and skilled in secondary group interactions that link village residents into expanded social structures.

Increasing systemic linkages to the outside world result directly from differentiation of interests and increased division of labor. Whether it be their school, their employer or a government agency with money for dams or roads, El Cerritoans are now connected to the broader society to a degree completely unknown before 1940.

El Cerrito is still too small for internal *bureaucratization or impersonalization*. The community now deals effectively with outside bureaucracies, but there is nothing bureaucratic or impersonal about relations within El Cerrito. From

the time anyone sets foot in the village everyone knows an outsider is present. Invariably someone will quickly greet the visitor and inquire about his business there. There is no anonymity in El Cerrito.

Similarly, there has been no *urbanization or suburbanization* in El Cerrito, although it will be posited that the *location* of the village vis-à-vis Santa Fe and Las Vegas is a very important factor in its revival. El Cerrito is at once isolated and accessible. This fact has several very important ramifications. Even though the village is only 1½ miles “as the crow flies” from Villanueva State Park, only birds get there that way. Travelers must negotiate six miles of semi-improved, unmarked road from the highway turn off to approach the village from the south, and even more miles of equally rough road to approach from the north. These roads become very slippery when wet. At the same time, Santa Fe is only 60 miles (about 75 minutes) away, while Las Vegas is 30 miles (30–35 minutes) away. Thus, while the roads are difficult, both urban centers are within acceptable commuting distance for workers and others with regular business to conduct.

Santa Fe has experienced a boom during the same period of El Cerrito’s revitalization. As real estate has become increasingly expensive in Santa Fe, the commute from more distant rural hinterlands becomes more attractive. At least two El Cerrito residents commute regularly to Santa Fe, and others commute to occasional construction work. The two Anglo “farmers” have found ready market outlets in Santa Fe for bedding plants and gourmet salad vegetables from their greenhouses. New Mexico Highlands University in Las Vegas provides employment and educational opportunities for other village residents. The community’s location is attractive to people without independent financial means, such as pensions, social security benefits or private wealth. Thus, while El Cerrito is in no sense a *suburb* it has a critical spacial relationship to both Santa Fe and Las Vegas. The experiences of numerous other villages surrounding these cities remain to be documented.

Values have changed markedly in El Cerrito since 1940. The old insular culture is gone, yet this is not an example of modern mainstream New Mexico society. Anglo residents respect the values of their Hispanic neighbors, who in turn understand Anglo values. There is an easy accommodation across ethnic boundaries.

Roland Warren’s discussion of *psychological identification with community* does not adequately emphasize the importance of this dimension in Hispanic culture. Even in rural Anglo farming communities one does not observe the intense affective ties to community that are so widely manifest in Hispanic culture. We are a nation of immigrants, and relatively few Anglos have the multi-generational tie to place that these Hispanics have. This strong tie to community is manifested in several ways. One is the strong affection for familiar people, relatives and friends. As is emphasized in previous studies, almost all old time Cerritoans are blood kin in some degree (e.g., Leonard & Loomis, 1941;

Nostrand, 1982). When they return to El Cerrito, they almost seem to shed the impersonalism adopted for life in the outside Anglo world. Sons of Cerritoans may attend the same high school outside without knowing one another, but during the annual ditch cleaning, greetings are accompanied by enough information to establish exactly the degree of kinship. After those introductions, they immediately refer to each other as "bro" in the easy banter that quickly develops.

Another manifestation of identification with community is the strong attachment to a geographic place, to a familiar landscape. When they pay taxes on a piece of land for years while receiving no income or tangible benefit from it, they are manifesting affection for land and place. Yet another manifestation of identification with community could be easily observed during the annual ditch cleaning.³ The father of a 13 or 14 year old son was teaching the boy what he had learned at an even younger age about how to properly shape the ditch. The boy was participating willingly in the hard, hot physical labor. They owned no irrigated land in the village, and they lived in Los Alamos where the father had worked most of his adult life. The psychological identification with El Cerrito transcends both time and space; there is definitely a community of mind which is clearly being transmitted to a new generation far removed from subsistence agriculture and isolated rural life.

Psychological identification with El Cerrito occurs in degrees. Not all former Cerritoans hold the same intensity of feelings discussed above. Some remember the village fondly but visit only infrequently and no longer own property there. They lament the sale or loss of the land and express pride in being from El Cerrito. Another group is embarrassed to have come from such a small, poor place. These people tend to answer "Las Vegas" when asked by new acquaintances where they are from (Nostrand, 1992, pp. 200–201).

There is some difference of opinion on the role of psychological identification in community development. Whether the strong attachment to El Cerrito is a *necessary* element in the revitalization can certainly be debated. It remains nonetheless a remarkable phenomenon.

Warren's *horizontal pattern* of interaction among former residents of El Cerrito living outside the community has been documented by Samora and Larson (1961) and by Nostrand (1992). Even in Pueblo, Colorado, where more families migrated, the pattern of interaction has declined over time until it is limited mostly to close relatives (Nostrand, 1992, p. 202). Cerritoans tended to disperse around the city and among several employers such that there is no "ghetto" to reinforce community. However, on important occasions, such as funerals and weddings, former neighbors and friends can also be expected to attend. If the frequency of interaction is not great among distant relatives and former neighbors, a significant bond nevertheless remains.

³ The irrigation ditch which diverts water from the Pecos River to all the irrigated land requires annual cleaning and maintenance. On Saturday, April 4, 1992, 42 males gathered for this event.

Why Now?

The most important factor in the return of out-migrants from the village is their retirement or the prospect of retirement. Retirement provides an income without the tie to place imposed by employment. A number of property owners have paid taxes on their properties for years with the idea they would or might retire and return to the village. The patriarch of the village returned to live there when he was in his seventies. This man worked and engaged in business enterprises as far away as New York during his working years. He and his wife had to wait until a son and daughter-in-law could accompany them to provide some assistance with the tasks of everyday living. That couple remained until, at about the age of 90, they were deemed by relatives too frail to continue living so far from medical services. They currently live in Albuquerque.

Cost of living was cited by another resident, who took an early retirement to move back to El Cerrito. Real estate is substantially less expensive than in Pueblo, Albuquerque, or other cities where Cerritoans found work. Thus, they can sell their urban residence, build or renovate a house in El Cerrito, and invest the difference. In addition, a garden, fruit trees and cattle can provide a significant part of a family's food requirement.

Disaffection with urban living pushes some to rural areas, although this is not everyone's choice. For those who choose an isolated village, dissatisfaction with various urban problems is often a very important factor. This was a major consideration for the Anglo residents. A number of residents prefer the quiet and solitude of the country. When asked why he had built a house a mile from the village rather than living in his house near the church, one Cerritoan replied that even El Cerrito was "too noisy."

IN CONCLUSION

The village Warren chose as his example of a stable, almost unchanging community certainly no longer qualifies for that characterization. Indeed, over the past half-century, its change has been as great as that experienced in most communities, although the pattern of change is unlike that experienced in many other places. El Cerrito's very small population and extreme isolation preclude it from manifesting all aspects of the pattern of community change outlined by Warren.

El Cerrito is no longer the isolated, insular cultural artifact that it was in 1940. It is now culturally integrated and is experiencing a steady if modest revitalization from a near ghost town of five elderly residents in the late 1960s. A key factor in this revitalization appears to be its location vis-à-vis Santa Fe and Las Vegas. El Cerrito is isolated but accessible to these markets and sources of employment. The isolation was a key to attracting the Anglos to the community. At the same time El Cerrito is just accessible enough to enable workers to commute daily to work and children to get to school. The second key factor

appears to be the mix of talents among the new residents. They provided energetic and effective leadership and in particular grantsmanship abilities crucial to the improvement of infrastructure.

A third key factor is the remarkable level of psychological identification with this community, even among young people one or two generations removed from rural life. It may also be a factor in fostering a high level of solidarity in the community. While there are numerous little disagreements among Cerritoans, they have not fallen prey to the bitter factionalism that has immobilized many New Mexico communities.

This case illustrates how a series of deliberate efforts mounted by skilled and determined people can result in substantial development even in a very unlikely setting. El Cerrito has progressed without any formal development organization of any kind, just a small core of dedicated and knowledgeable citizens. The ditch association and the water users association are legal entities which can receive and disperse funds and make contracts. Beyond these, there is no governmental formal structure—just dedicated, determined and resourceful residents. When the time and location are right, communities can develop as a result of the interactions and actions of local residents interested in jointly addressing locality-relevant needs and problems (see Wilkinson, 1991). El Cerrito provides the quintessential example of a community pulling itself up by its own boot straps. If nothing else, this case should lend encouragement to leaders of other unlikely development candidates. However, this should not be read to suggest that leadership effort alone is sufficient. In this case, location was important, isolated enough to attract a certain group of people yet close enough to urban employment, markets, and services to be a viable residential option. The strong psychological identification with this place helps explain why several residents chose El Cerrito over a more accessible rural location and several others plan to return.

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CORE-PERIPHERY RELATIONSHIPS OF RESOURCE-BASED COMMUNITIES

By Courtland L. Smith and Brent S. Steel

ABSTRACT

Core-periphery theory explains processes by which decision making in rural resource-based communities becomes dominated by urban centers. Urban cores have the advantages of centrality, synergism, and recombination. Data from Oregon communities and counties for the period 1949 to 1989 show dramatic change in the relative incomes between urban centers and rural resource-based communities at the periphery. Coping strategies for resource-based communities include forming cartels, becoming self-sufficient, promoting community sustainability, establishing a harmony of interest with urban cores, and changing community identity. Altering the structural advantages of urban cores is, however, very difficult.

INTRODUCTION

Aldo Leopold (1949, p. 188) says, "Wilderness is the raw material out of which man has hammered the artifact civilization." Population and power have been concentrating in urban cores for over five thousand years. Resource-based communities feel the weight of this urbanization. The people of rural communities see themselves as less able to control their destinies. Community leaders express frustration and powerlessness. They perceive themselves as being controlled by powers far away who neither understand nor really care about the needs of people in resource-based communities.

The problems of rural resource-based communities must be addressed as part of the overall process of urbanization that is taking place. Urban cores have the advantage of centrality, synergism, and recombination, and they tend to dominate decisions about rural, resource-based communities. Core-periphery theory is often used to discuss international relations; we feel it is an approach that also helps explain the situation of resource-based communities.

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Core–Periphery Theory

Increasingly urban power centers direct resource management decisions. The shift in voting power to *one person, one vote* reduced the political influence of rural communities. Coupled with this shift in political power is what has been labeled the “postindustrial society” (Bell, 1973; Touraine, 1971). Postindustrial societies have complex nationwide communication networks. They have a high degree of economic activity based upon an educated work force that employs scientific knowledge and technology in the work place. Citizens of the postindustrial society give greater emphasis to “higher order” needs such as ego fulfillment and self-actualization (Flanagan, 1982; Inglehart, 1977, 1991; Yankelovich, 1981). The postindustrial society has increasing population growth, employment, and affluence in urban areas and subsequent decline in rural areas (Bell, 1973; Galston, 1992; Inglehart, 1977; Tsurutani, 1977).

Developing along with the postindustrial theoretical perspective is a much more materialistic and structurally based theory: core–periphery theory, also called dependency theory. Dependency theory adopts the premise that the acquisitive nature of industrial capitalist societies exploits the resources of less developed nations to fuel their industrial economies (Hendricks, 1992). Dependency theory, especially as formulated by Galtung (1980), postulates a structural relation between a dominant core in the industrialized nation (the center) and the exploited periphery of the less developed nation. Relations between the core and periphery are imbalanced. In international relations, the power of the core over the periphery can be economic, cultural, political, military, environmental, and scientific.

Galtung also saw the industrialized nation as having a periphery of exploited workers controlled by the core. The workers of the urban periphery turn the resources from the rural periphery into products for a mass market. Thus, the core is made up of a center and a periphery. At the periphery there is a center which has a harmony of interest with the center at the core. At the center of the periphery, for example, mill managers from corporate headquarters control the production-line workers, native groups, peasants, and residents of the periphery (Figure 1).

While we associate *core* with urban and *periphery* with rural, we recognize that the situation is very complex. Many types of urban sub-communities have been identified (Bensman & Vidich, 1975). In addition to suburban rings around urban centers, there are edge communities (Garreau, 1994). Further, the urban geography in the United States, Canada, and Europe differs markedly from the urban geography in Central and South America, Africa, and many parts of Asia where there are what United Nations population authorities refer to as *primate cities* and *mega-cities*. We use *urban* in the generic sense of areas with high population concentrations and *rural* to mean those areas of low population

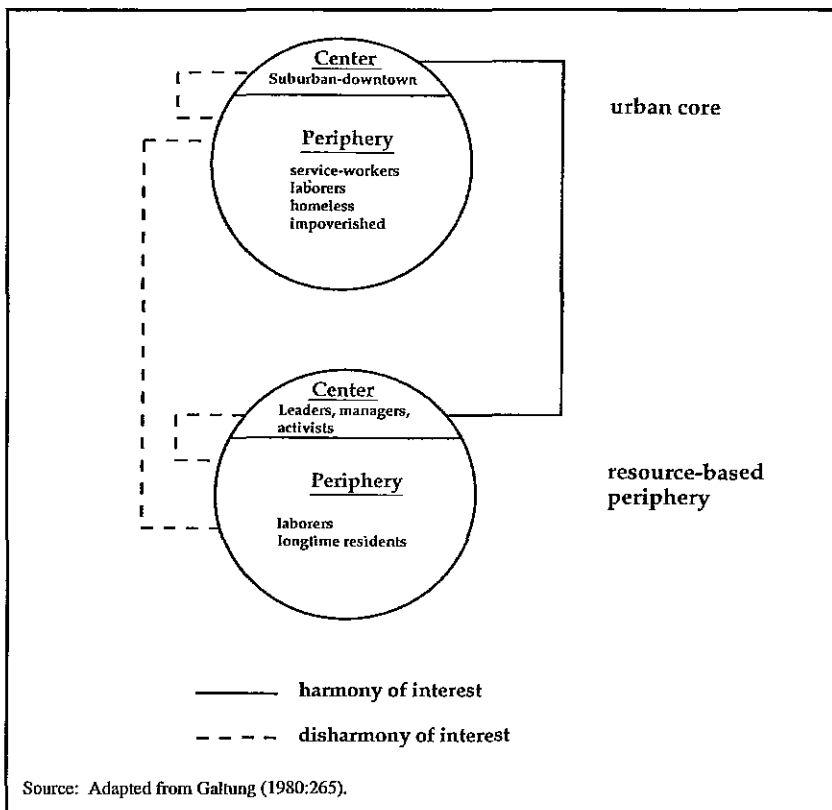


Figure 1. Urban core and resource-based periphery relationships.

density. The people in densely populated urban areas tend to exert influence over those in the less densely populated rural areas.

Galtung's formulation of the core and periphery is very dyadic. Wallerstein says, "Insofar as some states function as loci of mixed kinds of production activities (some core-like, some periphery-like) we can speak of such states as semiperipheral" (1984, p. 15). Reviewing world economic development from 1492 to 1789, Frank states, "Moreover, I agree with Wallerstein that the role and changing participation of various 'intermediate' 'mediating' 'semiperipheries' . . ." (1978, p. 256). Some rural communities might be said to have the status of *mediating semiperipheries*, but using Galtung, we see these semiperipheries as cores with respect to some communities and peripheries relative to others.

In the post cold war era, the role of dependency theory is being questioned (Goldgeier & McFaul, 1992). Core-periphery terminology has been adopted in a number of areas (Heer, 1990; Sassen, 1982), while dependency theory is seen to have failed with the Marxian underpinnings of the second world's centrally

planned economies. We see the structural relation between core and periphery nations useful for analyzing the situation of rural, resource-based communities. The dyadic nature of Galtung's theory of dependency works well to show the suburban dominated political center of urban cores who exercise control over both the periphery of the core and the resource-based periphery, too. Dependency theory suggests a fundamentally structural relationship between urban cores and resource-based communities at the periphery. In the same structural sense as in dependency theory, urban cores control the resource-based periphery. The core-periphery terminology emphasizes the dyadic nature of this structural relationship between urban and rural that is common within industrial democracies.

The geography of urban cores is interesting since the power center in the sense of dependency is the suburban ring and downtown business sector. The business district of the urban center is typically occupied by people from the suburbs and wealthy urban neighborhoods adjacent to the business center. Included in the urban periphery are urban service employees, manufacturing workers, urban blight, ghettos, and areas of high poverty near the geographic center of the core.

In a departure from dependency theory, U.S. urban cores are not composed of one dominant power center controlling the resource-based periphery. With respect to resource-based communities, the urban core has at least two competing power centers. One power center is industrial organizations who depend on resources from the periphery for their operation. The management of the wood products industry, for example, is at the center in the urban core. The other power center is environmentally-oriented and seeks to reduce exploitation of natural environments at the periphery. Each of these two dominant interests seeks to increase support for its position among those in the center and periphery of the urban core who are unaligned. Because of its size, the periphery of the urban core gives voting power to urban center interests who can influence decisions about the use of resources at the periphery. In addition to voting power, administrative, executive, legislative, and legal decisions are influenced by those from the urban center.

The objective is to look at the application of core-periphery theory to issues of resource-based communities. To do this the network of communities must be identified by looking at matter, energy, and information flows between the urban center and the rural periphery. Then, the core-periphery relation between these communities can be assessed.

For the situation we analyze the core and periphery has the following geographic dimensions. Figure 2 shows Oregon core-periphery geography. The Portland urban core includes the counties of Clackamas, Washington, Columbia, Yamhill and Multnomah. Clackamas and Washington are the main centers of urban core power. Multnomah County encompasses most of the urban periphery. Three rural peripheries are the Oregon coast, whose resource-based economy is

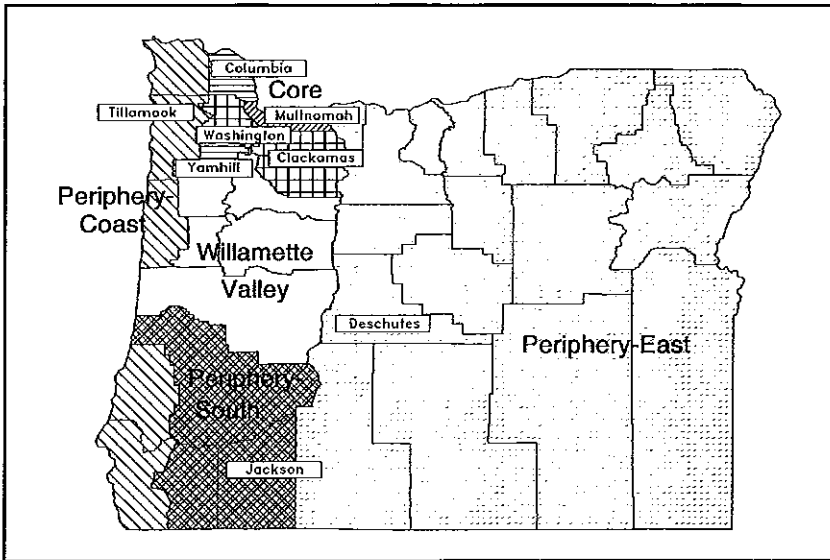


Figure 2. Oregon urban core and resource-based periphery geography.

mainly fishing, forest products, and tourism; Southern Oregon, primarily a forest and tourism-based economy; and Eastern Oregon, based on agriculture, forest products, and tourism. The Willamette Valley is not included but acts more like a periphery to the Portland urban center.

THE STRUCTURAL ADVANTAGES OF CORES

What controls do urban core communities have over resource-based communities at the periphery? Urban centers direct flows of matter, energy, and information to the core from the periphery and formulate rules that control land use at the periphery. Urban cores serve as hubs for networks of communities that dominate the flows of raw materials from resource-based communities at the periphery. The urban center gains power over the periphery through its structural advantages. Rural, resource-based communities are peripherally located, and they lack decision making power. Most decision making about environmental qualities and land use takes place well away from the lands and environments of concern.

The transaction between contemporary resource-based and urban core communities is one of resources in exchange for knowledge. Knowledge tends to concentrate at the center of the core, while resources are at the periphery. Increasingly, then, resource-based communities at the periphery become subject to the rules made in the urban center. The flow of something tangible out of the resource-based community is difficult to equate with the inflow of knowledge.

This is especially the case when resource-based community members see themselves being dominated by regulations, land use practices, and specifications dominated by the urban core. Dennis Roth (1991, p. 38) observes, "... the wilderness movement, which drew most of its strength from middle-class urbanites, repeatedly clashed with the timber industry and local timber-dependent communities over allocation of national forest resources."

The powerlessness of rural communities is shown in Table 1. A national survey of county officials' perceptions on planning issues reflects the core-periphery difference. Based on data from Steel et al. (1992b), we divided Oregon county officials according to the core-periphery designation in Figure 2. Population in periphery counties grew 5.8 percent while core counties grew 10.0 percent over the 1988-92 period. All 9 counties constituting the periphery in Table 1 lost population during this period. Oregon county officials' perceptions reflected these regional growth differences. All the core counties indicated that the primary economic indicators had improved over the period. On issues such as attracting businesses, infrastructure, unemployment, and the local economy overall, periphery county officials saw their situation as worse than core county officials. Affordable housing was the only item on which periphery county

Table 1. Oregon County Officials' Perceptions of County Economic Conditions, 1988-92^a

Question: How have conditions in the following areas changed in your county over the past five years?

	<i>Improved Percent</i>	<i>Worsened Percent</i>	<i>No Change Percent</i>
Ability to attract business			
Core	100	0	0
Periphery	0	89	11
Availability of affordable housing			
Core	100	0	0
Periphery	66	33	33
Infrastructure (roads, streets, sidewalks, sewers)			
Core	100	0	0
Periphery	0	66	33
Overall local economy			
Core	100	0	0
Periphery	0	89	11
Unemployment			
Core	100	0	0
Periphery	0	89	11

^aRandom sample of 1/3 of Oregon counties—planning and economic development officials—pulled from a national sample of 995 counties; n=12 counties, 3 core and 9 periphery. Note that the n is too small for meaningful statistical analysis.

officials saw some improvement, and they saw less improvement than did core county officials.

The influence of the center in a network of communities can be positive. Stern et al. (1992, p. 88) note that the influence of the industrial state is not always negative. The potential exists for urban knowledge exchanged for materials from the periphery, to improve the condition of both urban core and rural periphery. If an innovation increases total productivity and reduces environmental impact, then depending on how this increase is distributed, both the core and periphery could both benefit materially. In a general sense and as measured by life expectancy and per capita energy use, overall improvement for both core and periphery has occurred. The problem comes from the feeling of differential power. The resources extracted go to enhance the well-being of an urban community in which further value is added by manufacture into finished goods. Thus, while both communities may benefit, the resource-based community sees its benefit coming with the loss of decision-making power about the use of resources. Even if both urban and rural communities benefit, the resource-based community at the periphery perceives itself as less powerful.

Added to the advantage of the centrality of urban cores is the synergism that comes from bringing information to one place. This provides for the interaction of ideas, and facilitates through synergism new concepts and approaches. A third advantage of urban cores is the value added to resources by combining them into products. The three advantages of urban cores—centrality, synergism, and recombination—are structural edges that are difficult for peripheral communities to overcome. These advantages lead to the general concentration of population in urban cores and away from rural resource-based communities.

A TEST OF CORE-PERIPHERY RELATIONS

The Oregon Joint Legislative Committee on Trade and Economic Development wrote in 1990,

The flower of economic recovery is in full bloom in Portland—employment is up, inflation is down, per capita income is growing, and new businesses are sprouting up throughout the tri-county region. Yet, in much of rural Oregon, the seeds of recovery have scarcely begun to grow. . . . The findings show that what economists have dubbed the “two Oregons”—an economic division of the state into regions of haves and have nots—is not far from fact (Miller, 1990, p. 3).

This is not a problem of just the 1980s but is a process that has been going on for at least 40 years.

The power center for decision and finance in Oregon is the Portland metropolitan area. Portland has a downtown financial, business, and commercial center. Major Oregon banks have their central offices in Portland. Despite Salem being the State capitol, many regulatory agencies are in Portland. The power brokers of state politics reside in Portland. Portland is the center for art, history,

music, and sport. It has the statewide newspaper, state historical society, symphony orchestra, and National Basketball Association franchise.

A survey of interest groups (Steel et al., 1992c) shows the dominance of core groups. A survey was conducted of all interest groups who participated in the planning process in thirteen Oregon national forests. The survey obtained data about the resources and activities of these groups. The size and budget of core interest groups is much greater than groups from the periphery (Table 2). This interest group dominance affects statewide policy decisions. Core interest groups have seven times the full-time staff, nine times the volunteers, and over ten times the budget of periphery interest groups. In addition, core citizens also do more letter writing, soliciting signatures, attending meetings, and demonstrating than people in the periphery (Table 3). This higher level of political participation also furthers the political influence of core areas.

Several statewide decisions highlight the urban core influence. Urban core voters, particularly from the suburbs of Portland, passed a tax limitation measure in 1990 that was opposed by rural voters. Urban voters supported the measure at 55 percent. Rural voters opposed it at 52 percent (data from Oregon Secretary of State, *Official Abstract of Votes*). For environmental issues on statewide ballots, rural voters opposed a 1988 scenic waterway proposal by 58 percent. The proposal was supported by 63 percent in urban areas. Rural areas feel environmental regulations, land use practices, water quality standards, and pollution control requirements are forced on them by urban residents.

In general the periphery feels that government does not work for them. They do not trust elected officials, and they see officials as less honest than in other

Table 2. Core and Periphery Natural Resource Interest Group Resources in Oregon, 1992

<i>Resources</i>	<i>Willamette</i>			<i>f-test</i>
	<i>Core</i>	<i>Valley</i>	<i>Periphery</i>	
Average number of full time paid staff	14.8	1.6	2.1	6.64**
Average number of part time paid staff	4.0	1.6	0.7	2.02*
Average number of volunteers	964.6	117.1	105.0	4.90**
Average annual budget	\$2,003,679	\$305,739	\$149,710	3.37*
	n=82	n=94	n=152	

* $p \geq .05$; ** $p \geq .01$.

Source: Steel et al. (1992c). Data are from a survey of recreation, industry, and environmental interest groups that have participated in planning processes in at least one of Oregon's thirteen national forests in the early 1990s. Interest group names and addresses were provided by each national forest. Response rate for the survey was 67 percent. Groups were identified by geographical location. Those groups located in Seattle, San Francisco, and Washington D.C. were included in the Core.

Table 3. Core and Periphery Public Participation in Governmental Natural Resource Policy in Oregon, 1991

Question: People participate in various activities as means of influencing decision making on a variety of natural resource and environmental issues. Please indicate which channels of influence you have used in the past to try to affect governmental natural resource and environmental policy.

Channel of Influence	Willamette Valley			X^2
	Core	Valley	Periphery	
	<i>Percentage Saying Participated</i>			
Writing letters to newspapers	16	14	8	$X^2=16.14^{**}$
Donating money to an interest group	50	41	22	$X^2=22.48^{***}$
Writing letters to local, state or federal legislators or agency officials	25	23	15	$X^2=9.87^*$
Phoning or personally lobbying legislators or agency officials	9	9	1	$X^2=5.33$
Joining an interest group	16	12	6	$X^2=31.77^{***}$
Signing petitions	67	65	41	$X^2=17.21^{***}$
Soliciting signatures for a petition	8	6	1	$X^2=6.39^*$
Attending public meetings	7	6	1	$X^2=6.12^*$
Campaigning for a candidate with similar views	9	9	3	$X^2=4.70$
Participating in lawful demonstrations (picketing, marching, etc.)	3	3	0.4	$X^2=2.86$
	n=488	n=226	n=158	

* $p \geq .05$; ** $p \geq .01$; *** $p \geq .001$

Source: Steel et al. (1992a).

states (Table 4). A Pacific Northwest survey (Steel et al., 1992b) of public perception toward state government shows a general lack of trust of government. Periphery respondents showed significantly greater distrust of local officials than did core respondents. These data do not allow us to separate the center of the core from the periphery of the core and the center of the periphery from its periphery. These data do, however, show the predominance of core and periphery opinion, which reflects the feeling of the periphery having greater weakness.

Decision making translates into economic power. A proxy for economic power is median household income. If centrality, synergism, and recombination work to the advantage of urban centers, then the relative gap between center and peripheral communities in median household income should exist and be growing. Core-periphery theory hypothesizes that the Portland urban center

Table 4. Core and Periphery Public Alienation Toward Oregon State Government, 1993

Item	Willamette Valley			
	Core	Valley	Periphery	
	-----percent-----			
I feel that for the most part Oregon State government is looking out for peoples' best interest.				
<i>Agree</i>	40	36	22	$X^2=16.08^{**}$
<i>Disagree</i>	25	29	44	
I feel I can trust Oregon's elected officials to do the job they are elected to do.				
<i>Agree</i>	9	10	13	$X^2=16.67^{**}$
<i>Disagree</i>	41	42	61	
Oregon's elected officials are more honest than elected officials in most states.				
<i>Agree</i>	15	16	7	$X^2=10.38^*$
<i>Disagree</i>	40	42	54	
	n=413	n=185	n=141	

* $p \geq .05$; ** $p \geq .01$; *** $p \geq .001$

Source: Steel et al. (1993). Data are from a random sample mail survey conducted during October, 1993. Response rate was 68.8 percent.

should show increasing economic power over the periphery. The power in the Portland urban center is mainly in the suburban communities.

Median household income as a proxy for the power of urban centers is criticized because it is not corrected for how living costs in urban cores differ from the rural periphery. Median income could be adjusted for the cost of living, but each location has different components. For example, transportation costs in the periphery and items that have to be transported into rural areas should be more expensive. Housing costs should be higher at the core because of the relative availability of land. What about corrections for the ratios of service and non-service jobs, minority population, business cycle timing, family size, and many other factors that might be included? Further, the relative cost of living changes as core-periphery relations change through time. These and other adjustments tend to rationalize the rural-urban differences. Why should people living in rural resource-based communities have declining median incomes as a ratio of the state average? Why is their labor not valued as highly?

To enable comparison of median incomes across four decades, median income for each county and community is divided by the state average. This gives a ratio showing relative differences. Table 5 compares the ratio of county median household income to the state average for the 1949, 1959, 1969, 1979, and 1989 as collected for the decennial censuses. Ratios greater than 1.0 show

more economic power than the state as a whole; ratios less than 1.0 show less. The county organization of the table allows only general designation of the center and periphery of the core.

Table 5 organizes these data according to two suburban centers of the urban core. These are Clackamas and Washington counties. A second concentric suburban ring of Columbia and Yamhill counties is developing. The periphery of the urban core is Multnomah County. There are power centers within Multnomah County, such as the Skyline West (1.43), Maywood (1.42), and Troutdale (1.43), but they were not separated in this table.

The median income ratio data show the urban center counties surrounding Multnomah County have increased their economic power very significantly. More important, the table shows the core-periphery gap increased during the 40-year period. All three peripheries, coastal Oregon, southern Oregon, and eastern Oregon, show a declining ratio of median household income for the 40-year period.

Table 6 breaks the data down further to show selected counties and communities. The communities of Lake Oswego, West Linn, and Beaverton all fall within the Portland Standard Metropolitan Statistical Area. Ashland, Astoria, Bend, Coos Bay, Grants Pass, Klamath Falls, Medford, Newport, Nyssa, Ontario, Redmond, Seaside, and Tillamook all fit the definition of resource-based

Table 5. Median Household Income Ratio for Oregon Core and Periphery Counties

<i>Location</i> <i>County</i>	<i>Year</i>				
	<i>1949</i>	<i>1959</i>	<i>1969</i>	<i>1979</i>	<i>1989</i>
Core:					
Center-Periphery (Multnomah)	1.05	1.03	0.99	0.95	0.99
Center-Center 1 (Clackamas, Washington)	0.99	1.12	1.29	1.26	1.30
Center-Center 2 (Columbia, Yamhill)	0.89	0.85	0.98	1.05	1.06
Periphery:					
Periphery-Coast (Clatsop, Tillamook, Lincoln, Coos, Curry)	0.92	0.97	0.93	0.89	0.84
Periphery-South (Douglas, Josephine, Jackson)	0.93	0.97	0.91	0.89	0.85
Periphery-East (all 18 counties east of Cascades)	0.99	0.96	0.93	0.89	0.85

Source: U.S. Bureau of the Census.

communities (Figure 3). They are rural and depend primarily on forestry, fishing, agriculture, and tourism for their economic base. Each community is limited in the number of resources available to them. As in Table 5, these periphery communities show progressive loss of income relative to the urban center.

Some resource-based communities show striking declines. Coos Bay and Redmond are examples. They were well above the state average in 1949, when

Table 6. Median Household Income Ratio in Selected Sample of Core and Periphery Oregon Counties and Cities

<i>Location</i> <i>County/City</i>	<i>Year</i>				
	<i>1949</i>	<i>1959</i>	<i>1969</i>	<i>1979</i>	<i>1989</i>
Core					
Center-Periphery					
Multnomah County	1.05	1.03	0.99	0.95	0.99
Portland	1.04	0.97	0.89	0.87	0.94
Center-Center 1					
Clackamas County	0.98	1.09	1.24	1.25	1.30
Lake Oswego	1.30	1.56	1.72	1.70	1.89
West Linn	1.17	1.14	1.23	1.43	1.67
Washington County	1.01	1.16	1.33	1.27	1.30
Beaverton	1.17	1.29	1.36	1.21	1.25
Center-Center 2					
Columbia County	0.98	0.93	1.09	1.10	1.08
Yamhill County	0.80	0.78	0.87	1.00	1.04
Periphery					
Periphery-Coast					
Tillamook County	1.02	0.94	0.92	0.84	0.81
Tillamook	1.07	1.07	1.00	0.81	0.64
Astoria	1.12	0.92	0.90	0.90	0.89
Seaside	0.94	0.86	0.77	0.69	0.73
Newport	0.82	1.03	0.99	0.90	0.89
Coos Bay	1.25	1.10	1.13	0.93	0.79
Periphery-South					
Jackson County	0.96	0.98	0.91	0.91	0.92
Ashland	0.86	0.80	0.75	0.78	0.87
Grants Pass	0.90	0.95	0.83	0.75	0.79
Medford	1.12	1.06	0.98	0.92	0.94
Periphery-East					
Deschutes County	1.09	1.00	1.01	0.98	1.00
Bend	1.15	1.05	0.98	0.91	0.95
Redmond	1.22	0.98	0.97	0.86	0.86
Klamath Falls	1.15	1.03	0.82	0.79	0.71
Nyssa	1.04	0.88	0.78	0.73	0.60
Ontario	1.04	0.96	0.78	0.82	0.69

Source: U.S. Bureau of the Census.

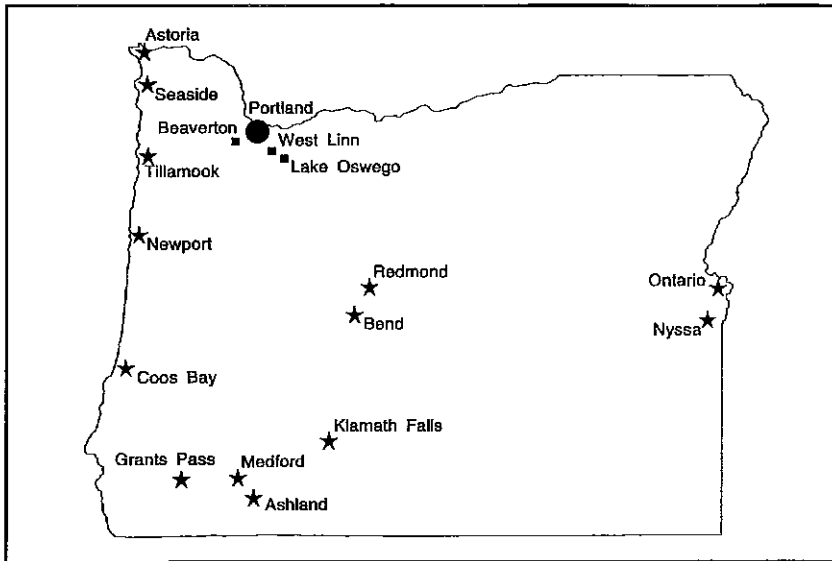


Figure 3. Oregon communities mentioned in tables and text.

the wood products industry was the mainstay of their economy. Their ratios were comparable to Lake Oswego and Beaverton at that time. As environmental issues regarding wood products increased, median household income declined. There were fewer jobs and lower relative wages (Hibbard, 1993).

For Portland and Multnomah County the pattern of median household income decline is similar but less steep than periphery communities and counties. Portland and Multnomah County have 15 percent and 20 percent of the State's population, respectively. Poverty is more prevalent in Portland. The wealthier suburban communities of Lake Oswego, West Linn, and Beaverton did increase as predicted, as did Clackamas and Washington Counties.

For 1989, evidence suggests a reversal of the long-term trend in some areas. Ashland and Bend show some improvement between 1979 and 1989 as they shift away from a resource-dependent economy to becoming regional service centers. The relative relationship between core and periphery has changed dramatically. Lake Oswego increased its ratio from 1.30 in 1949 to 1.89 in 1989. During the same period Coos Bay dropped from 1.25 to 0.79. The range of differences between urban centers and the resource-based periphery as well as the deviation from the median are increasing.

These results are similar to other studies. Comparing metropolitan and nonmetropolitan earnings for 1967–1990, Tolbert and Lyson (1992) reached similar results. Lichter and Eggebeen (1992), looking at child poverty, find it growing faster in nonmetropolitan areas. Change in family structure is one of

the major causes. Observation of rural Oregon communities finds female-headed households migrating to rural areas to obtain cheaper housing. Lichter and Eggebeen suggest general social policy changes: "Increases in the minimum wage, enforced child support by noncustodial fathers, and child tax credits may ultimately do more to ameliorate poverty among rural children" (1992, p. 169).

COPING STRATEGIES FOR RESOURCE-BASED COMMUNITIES

These data point to significant change. What coping strategies do resource-based communities have in networks with urban cores? Swinth and Alexander (1990) provide several proposals for dealing with the power differences between core and periphery. Using structural insights from dependency theory and network analysis, additional strategies can be identified. Each strategy must be tested to see if it overcomes the overall power advantages that centrality, synergism, and recombination give urban cores.

Cartels

One obvious response to the power urban cores exert over the periphery is to organize resource-based communities into cartels. Cartels are groups who share a common interest. The Organization of Petroleum Exporting Countries (OPEC), one of the best known cartels, illustrated during the 1970s how a cartel can gain power over the center. OPEC also illustrates how the addition of resource producers outside the cartel can cause a breakdown in the power exercised by a cartel. Oil from the North Sea, Russia, Mexico, Nigeria, the North Slope, and renewed exploration in the continental United States severely curtailed OPEC's power to set prices. Further, the cartel itself used oil prices as a weapon between members during the Iran-Iraq War. OPEC also illustrates Galtung's center-to-center relations where oil companies located in nations dependent on OPEC oil are intimately involved in the production of cartel oil. Future leaders of OPEC nations are educated by nations dependent on OPEC oil. These nations also furnish much of OPEC's military hardware and protection.

Oil is not the only resource for which organizing all the periphery producers is effective. To be successful, however, all the producers have to be part of the cartel. The addition of new producers breaks the advantage of the cartel in controlling all of a commodity's production.

Resource-based communities could not form an effective cartel. First, large segments of private land are in the hands of large urban center corporations. Second, policies on federal lands are also controlled by the political preferences of urban cores. While large wood products corporations, with headquarters in urban cores, have in the past controlled forest policy, they are now being challenged by environmental groups whose power base is also in the urban core.

In fact, by generalizing forest issues to urban cores where wood products are a relatively small portion of the total exchanges, environmentalists have successfully influenced the quantity of land that is available for harvest.

Regional Self-Sufficiency

Bioregionalism (Sale, 1985) has been a popular notion for dealing with resource issues. The goal of bioregionalism is to have ecosystem self-sufficiency. The people of the region develop an economy that makes them self-sufficient within their ecosystem. This self-sufficiency is easily broken down by linking the communities with markets.

Opening up regionally self-sufficient communities to world markets provides urban cores access to the resources of peripheral communities. Entrance into the world's market economy has the benefit of greatly increasing the potential consumers for products of the urban core. Residents of periphery communities like the range of goods available from urban cores. Preferences for more goods draws peripheral communities into associations with urban cores and breaks down patterns of regional self-sufficiency.

Sustainability

In both forestry and fisheries, sustainability as a management goal has been practiced so as to maintain the economic health of resource-based communities. In forestry, the National Forest Management Act of 1976 establishes resource and community sustainability as a major forest management goal. The Magnuson Fishery Conservation and Management Act of 1976 adopts the concept of optimum yield, which explicitly allows the inclusion of social, economic, and ecological factors in the management of fisheries.

The problem with forestry and fishery management is both have limits to their productivity. If loggers and fishermen show any increase in the efficiency by which they generate the products, this means, if resource use is at the maximum sustainable yield, then fewer people have access to the resource (Smith & Hanna, 1990). This means fewer jobs, and resource-based communities must decline in size.

To the extent that resource-based communities maximize the value added to a product, they can maintain community stability. This can only be done, however, by increasing the amount of value added in proportion to the productivity gains. Ultimately, this treadmill, too, has its limits. At some point, the value added reaches the product limit.

Harmonies of Interest

Peripheral communities can use in a positive way Galtung's harmony of interest between urban centers and the center of the periphery for the benefit of the periphery. Where urban center groups have a harmony of interest, peripheral

communities can share in the power to determine their own destinies. On issues such as water quality, conserving natural environments, and goals for fish and wildlife management, urban centers and resource-based communities share a harmony of interest. Urban environmental organizations that work on these issues cooperate with residents of resource-based communities.

The interests of urban center organizations, however, do not always complement those of resource-based communities. Often rural resource-based communities make a Faustian bargain with manufacturers to locate in rural areas to provide jobs. The industrialization of rural communities changes their character and many of the jobs go to in-migrating outsiders. Development also draws conflict with urban-oriented environmental groups who want to limit the use of resources adjacent to rural communities. Urban interest groups concern themselves with expanding wilderness areas, restricting mining, limiting the take of preferred species of fish and wildlife, and imposing land use regulations.

Another harmony of interest is for resource-based communities to use their resources in a way that complements urban interests. Urban cores have problems such as disposal of waste and siting of power plants. Rural resource-based communities have opportunities here. These opportunities do not change the dependency relationship, but they allow resource-based communities to market the much lower population density and more open land area. Eastern Oregon counties, for example, cited a coal-fired power plant, accepted urban waste and garbage, allowed storage and disposal of hazardous military supplies, became a tourist destination. Unfortunately, each of these harmonies of interest perpetuates the urban center power relations with the periphery.

Change Identity

Resource-based communities can also change their identity. The Southern Oregon community of Ashland became a cultural and educational center. It developed the Oregon Shakespeare Festival and won one of the State's four colleges. After declining from 1949 to 1969, Ashland's median income ratio increased during the next two decades. The coastal community of Newport used its flavor as fishing port to attract tourism, and its relationship with Oregon State University and Senator Mark Hatfield to become a coastal research center, but its median income ratio has not returned to 1959 levels (Table 6). Bend seeks to establish itself as a central Oregon service center. In business, education, retail sales, and tourism, Bend is attracting growth as a center. During the decade of the 1980s, its median income ratio improved.

The problem with this approach is that the identity of the resource-based community changes. It is no longer a community of family farmers, ranchers, loggers, fishermen, or miners. The resource-based community takes on a new identity and with this identity requires new specialties. This means a new set of occupations. Farmers, ranchers, loggers, fishermen, and miners get lost in the transition to a new identity.

CONCLUSION

Core-periphery theory helps explain the processes by which resource-based communities become dominated by urban centers. Typically, rural resource-based communities are peripherally located in a network of communities. The suburban power centers of urban core communities balance flows of matter, energy, and information to the center from the periphery. Peripherally located resource-based communities exchange one or a few commodities to obtain a diversity of finished goods and information. A major exchange is urban center formulated rules about resource use.

Both rural resource-based communities and urban cores have a center and periphery. At the center of resource-based communities are the mill managers from urban corporate headquarters, local community leaders appointed to decision-making boards and commissions located in urban centers, and activists associated with urban center environmental groups seeking local support. At the periphery of the resource-based community are the laborers and longtime residents who remain in the community.

Resource-based communities have alternatives for dealing with the control exercised by urban centers, but the structural imbalance makes these alternatives difficult to achieve. One alternative is cartels with other resource producers. However, cartels break down when core communities encourage new producers to enter the system. A second is regional self-sufficiency, but it requires foregoing products and information enticingly provided from urban centers. Experience with the third alternative, renewable resource management strategies, shows a pattern in which demands for economic growth and production efficiency result in exceeding sustainability goals. The fourth, developing a harmony of interest with politically and philosophically supportive urban cores, requires time and personal contact to formulate mutually compatible opportunities. When harmonies of interest are forged, urban cores retain their power in decision making. Developing a harmony of interest also means peripheral communities play on the subordination of their relationship with urban cores. This means becoming a waste disposal site, tourist destination, or location for some urban support service. A fifth alternative is adopting a new identity. This requires vision about economic opportunities in the community for the future and changes the community character.

The problems of rural resource-based communities are in the structural power imbalance with urban centers. Urban centers have the structural advantages of their centrality, synergism, and recombination. They also are the centers of both the industrial and environmental interests that tend to dominate rural resource-based communities.

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GAMBLING ON THE LURE OF HISTORIC PRESERVATION: COMMUNITY TRANSFORMATION IN ROCKY MOUNTAIN MINING TOWNS

By Katherine Jensen and Audie Blevins

ABSTRACT

Recently four small isolated mountain communities, similar in history and common in their efforts to stem a half century of population and economic decline, chose to undertake a **unique** community development effort to revitalize their economies: local option, limited stakes gambling. In all four, historic preservation was the rationale for the legalization of gaming and, in all four, gaming has been highly successful in creating jobs, private and public investments, and increased tourism; yet, different state approaches to regulating gaming resulted in contrasting community development efforts. In South Dakota, most gaming taxes and fees are ear-marked for preservation while in Colorado these revenues are destined primarily for the state general fund. These legislated mandates, along with different restrictions on the magnitude of gaming establishments, have resulted in different development paths. The similarities and differences among these four communities are examined.

INTRODUCTION

In the past five years, four small mining communities in the West have instituted small stakes gambling as a method of community development after a long period of decline in population and economy. Deadwood, South Dakota, was the first community to obtain local option gambling since Atlantic City opened its casinos. Three mining towns in Colorado followed within two years. In all four communities, gaming as an economic revitalization effort was initiated by private entrepreneurs and development was supported by private capital. These entrepreneurs justified local option, limited stakes gaming in terms of historic preservation, rebuilding deteriorating infrastructures, and

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stabilizing their small town economies and populations. In tracing the recent histories and comparing the enabling legislation of South Dakota and Colorado, questions arise about the dramatic immediate transformation of community as well as long term prospects for stability. Using a holistic community case study approach based on four years' field observations; more than forty in-depth personal interviews with community leaders, business people and social service providers; extensive local and state documents; as well as archival and running newspaper records, it appears that ostensible similarities in the wholesale economic shift may mask long-term differences among the communities based on legislated restrictions on gambling.

Small Town Decline and Development

Since the first U.S. Census in 1790 there has been a steady decline in proportion of the U.S. population residing in rural areas, and a continuing migration into urban areas; nevertheless, rural areas and small towns have historically been able to maintain their economic vitality. This trend changed rather dramatically after World War II and, beginning with the 1950 census of the population, the exodus from rural areas and small towns increased. Confronted with massive migration into urban areas and depopulation of the rural South, numerous government efforts of the late 1960s attempted to counter-balance the magnetic pull of cities. Realistic appraisal of the limited opportunities available in agriculture led to the passage of legislation that encouraged rural industrialization, which provided for a brief but significant rural turnaround for about 1,300 counties during the 1970s (Summers & Branch, 1984). However, the rural turnaround proved short lived.

With a declining economy in the 1980s, many small towns and rural areas lost the ability to attract migrants. To counteract the steady decline, in terms of both economy and demographics, many small towns entered into diverse economic development schemes. These included developing mainstreet projects and attracting rural manufacturing and services enterprises. Many of these programs owed their birth and evolution to what Eisinger (1988) calls state entrepreneurialism with a focus on supply-side initiatives (see Figure 1). This model assumes that through government efforts such as tax breaks, infrastructure enhancement, low interest loans, industrial bonds and other subsidies, new industry can be attracted. This can create jobs and increase property values, which in turn enhance the well-being of community residents. The ensuing increase in consumer spending creates more new jobs. Thus, governmental intervention is essential to jump-start the local economy. According to Eisinger (1988) the problem with supply-side incentives rests with the inevitable inter-governmental competition for the "same" jobs.

While many communities are in bidding competitions to attract or retain industries, other communities attempt to create new jobs by filling an existing demand or creating a demand. One such activity is the development of potential

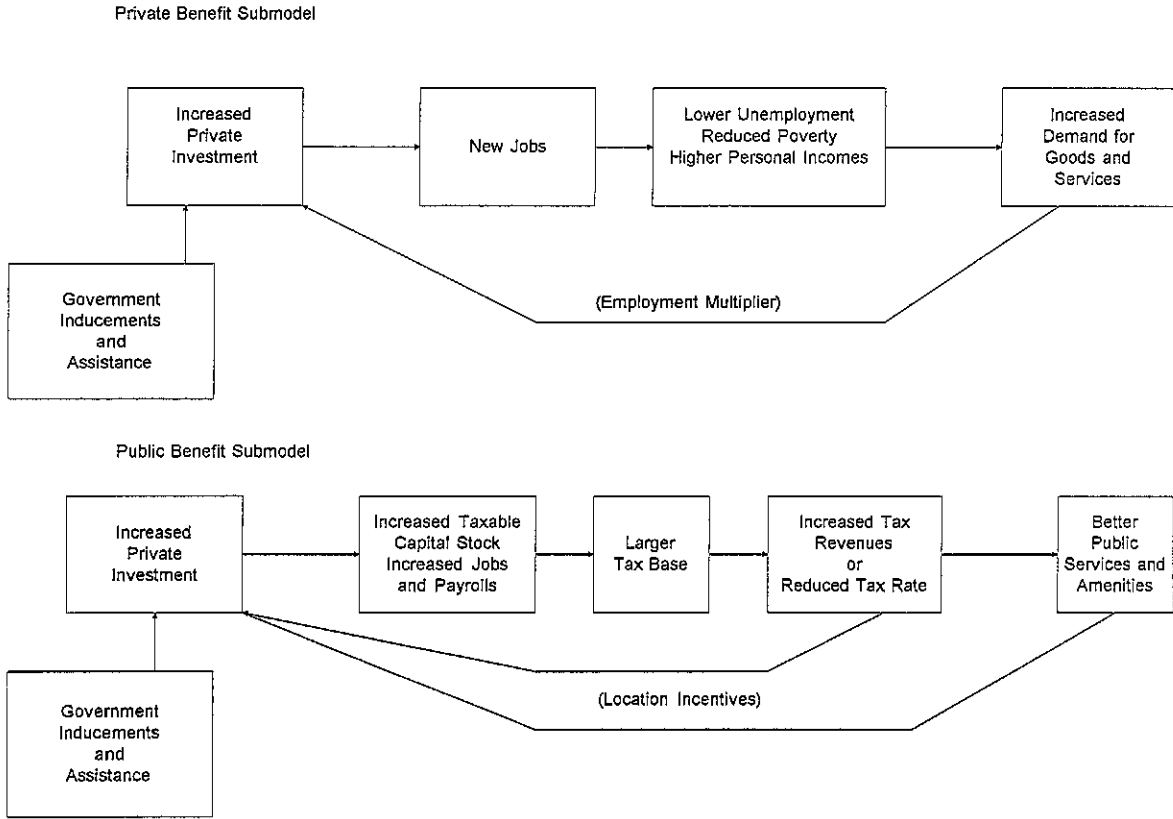


Figure 1. Eisinger's economic development models: Private benefits and public benefits.

tourist attractions. Many of these development schemes focus on local assets such as lakes, mountains, or rivers, or reconstruction of their past through the creation of local interest museums, living history exhibits or historic preservation projects. Yet, here too, communities rely on governmental entrepreneurialism to provide incentives "to underwrite the process of business planning, product development, initial production and marketing" (Eisinger, 1988). Again, government is instrumental in providing the stimulus for economic revitalization.

Gambling as Economic Development: Private Entrepreneurism

Our analysis of the initiation and evolution of gaming in four western mining towns suggests the need for two different models to explain community development. The first, a model of political initiatives and controls (see Figure 2) and second, a model of economic investment (see Figure 3). As in Figure 2, local option gaming was initiated by local residents (primarily a coalition of local business persons) via ballot petitions to amend state constitutions, eventually winning state-wide approval. Once approved, the state legislatures were charged with providing regulatory legislation to restrict gaming (to be discussed later), and also to specify how gaming would be taxed for the benefit of the state and local governments. Rather than jump-starting these local economies with diverse economic incentives, the states ensured their own financial gain from gaming. This legislation was vastly different in South Dakota from that of Colorado. These differences in turn determined how communities in each state would be transformed by gaming. Once the regulatory mechanism was in place, a glance at Figure 3 reveals that in both states, private risk-takers were instrumental in providing the capital that transformed the respective communities. The infusion of capital into high-risk ventures provided dramatic economic changes in the form of accelerated property values, increased jobs, and a large increase in revenues for governmental entities. Before leaving the conceptual model, it must be emphasized that once private venture capital began the transformation of community economies, local and state governmental agencies became active participants in encouraging additional gaming investments in the form of touting tourism, investing historical preservation funds for building restoration, and in developing and improving infrastructures such as water and sewage systems. Furthermore, it must be noted that economic development is not without costs, such as increased demand for municipal and social services and amenities. The particular dynamics of local option gambling as community development are discussed in the remainder of this study.

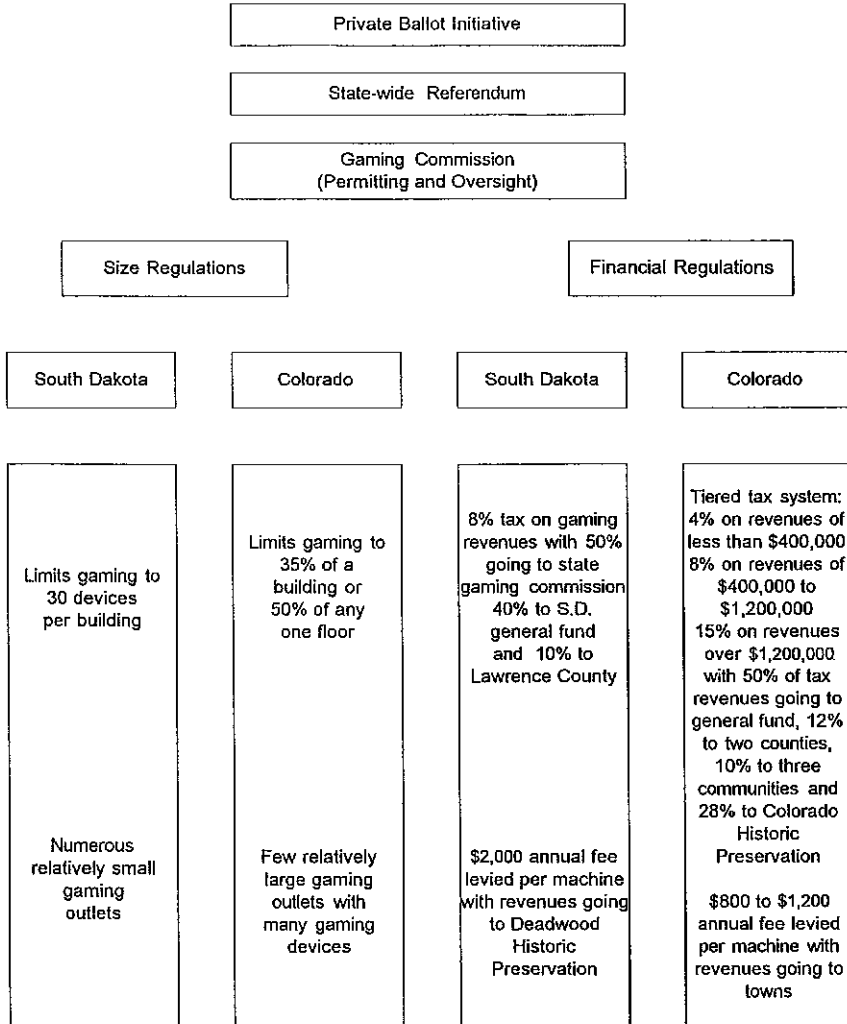


Figure 2. The politics of gaming model.

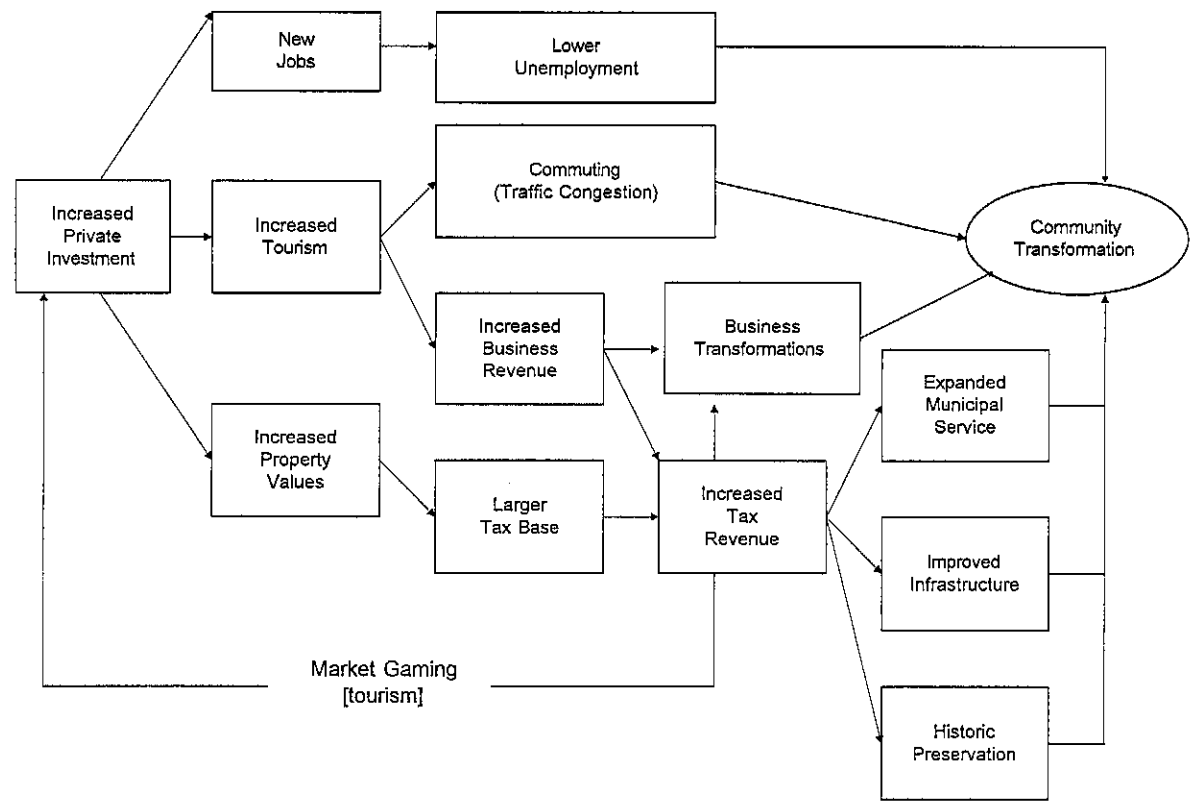


Figure 3. Gaming and community development model.

DEVELOPMENT IN FOUR WESTERN COMMUNITIES

Playing the Tourism Hand

The early history of Deadwood, South Dakota, and Central City, Black Hawk, and Cripple Creek, Colorado, is interwoven with the discovery and exploitation of precious minerals, primarily gold. As in many similar towns in the West during the second half of the 19th century, all four experienced exceedingly rapid population growth coupled with ancillary developments such as grocery stores, banks, newspapers, and churches, as well as saloons, gambling halls, dance halls and even opium dens.

These latter developments became part of the lore exploited by these mining communities in the West for half a century in turning to tourism to supplement dwindling income from mineral sources. Mining towns that would survive have known that tapping renewable resources was a necessity to bring stability to their communities and new riches where old precious metals were playing out. After World War II, Deadwood, South Dakota, and Central City, Black Hawk and Cripple Creek, Colorado, decided to attract additional tourists by undertaking an economic development project designed to re-create their historic past. Although all four towns still received revenue from local mining, their life blood since the 1940s was family tourism.

Themes of attraction took different forms. Of the communities central to this analysis, Deadwood focused most on the gold rush into the Black Hills itself with its "Days of '76" and an orchestrated aura of the wild, rough frontier atmosphere. In Colorado, Central City staked its fortunes on the more highbrow Central City Opera, restoring a nineteenth century opera house to grandeur suitable for staging complete classical productions. Cripple Creek tourists were drawn by continued mining, a melodrama, and the most famous red light district in the Rocky Mountains. In common they all had spectacular mountain scenery, an assortment of Victorian architecture, the titillation of a rough and dangerous history, and the romance of a time when people dreamed of amassing fortunes for the willingness to take a risk.

The northern Black Hills has offered, within half a dozen miles, not only Wild West atmosphere of Deadwood, with nightly Trials of Jack McCall, the killer of Wild Bill Hickok, and the cemetery where Calamity Jane was buried alongside Wild Bill, but also surface tours of the Homestake Gold Mine in Lead, three miles up the gulch. The Homestake surface tours during the summer months increased from 7,500 in 1986 to 36,000 in 1989, and 44,000 in 1992 with the addition of a mining museum. Consequently, Deadwood and Lawrence County had both longstanding experience and fairly ample facilities for visitors' eating and sleeping requirements, even apart from the resources of the rest of the Black Hills and Rapid City to the southeast. Deadwood and Lead currently offer 600 rooms in 34 motels. Yet, the seasonal cycle of tourism meant that many motels had not stayed open in the winter, at least past hunting season.

The Colorado mining/gambling towns also had previous experience with tourism, but they differed from Deadwood and each other in ways that had much to do with proximity to metropolitan areas. As early as 1932, Central City had its Opera Festival, clearly intended to draw outsiders to a mining town which had largely played out its mineral resources (DeChaine, 1966). But the opera season was a relatively short summer run. It drew a particular clientele, and numbers were limited. Central City had at least three local hotels, supplemented by a large motel in Black Hawk, and facilities in Idaho Springs, a resort town some fourteen miles away, or even to Denver and Golden, 38 miles down Clear Creek Canyon.

Cripple Creek, the youngest of the mining communities, founded in the 1890s, has continued to have a large assortment of fairly small operating mines to the present. Cripple Creek is over fifty miles up the mountain from the prosperous metropolitan area of Colorado Springs. Before the return of gambling, Cripple Creek had several hotels to accommodate automobile drivers who made their way up the winding road. Although the Imperial Hotel has offered "historic" melodramatic entertainment since after World War II, the attraction to Cripple Creek may have been a more general interest in a twentieth century mining area, a place where gold strikes, gambling, prostitution, labor strikes and adventurous characters came late, and one could see an authentic rather than a reconstructed Rocky Mountain gold town.

Family tourism produced a variety of business, from curio shops to performances and food and lodging, in Cripple Creek, Central City, and Black Hawk, as well as in Deadwood. Nevertheless, the fortunes and populations of the towns

Table 1. Population by County and Cities, 1860 to 1990

	<i>Gilpin County, Colorado</i>			<i>Teller County, Colorado</i>		<i>Lawrence County, South Dakota</i>	
	<i>Total</i>	<i>Central City</i>	<i>Black Hawk</i>	<i>Total</i>	<i>Cripple Creek</i>	<i>Total</i>	<i>Deadwood</i>
1860	—	598	—	—	—	—	—
1870	5,490	2,360	1,068	—	—	—	—
1880	6,489	2,626	1,540	—	—	13,248	3,777
1890	5,867	2,480	1,067	—	—	11,673	2,366
1900	6,690	3,114	1,200	29,002	10,147	17,897	3,498
1910	4,131	1,782	668	14,351	6,204	19,694	3,653
1920	1,364	552	374	6,696	2,325	13,029	2,403
1930	1,212	572	253	4,141	1,427	13,920	2,559
1940	1,625	706	289	6,463	2,358	19,093	4,100
1950	850	371	166	2,754	853	16,648	3,288
1960	685	250	171	2,495	614	17,075	3,045
1970	1,272	228	217	3,316	425	17,453	2,409
1980	2,441	329	232	8,034	655	18,399	2,035
1990	3,070	335	227	12,468	456	20,655	1,830

diminished as interstate highways only fifteen to forty miles from these old destinations encouraged tourists more and more to keep moving. Unfortunately, tourism revenue proved to be seasonal and insufficient in magnitude to provide enough jobs to maintain vibrant communities. The four communities experienced substantial, sustained depopulation since the 1920s for the Colorado towns and since the 1940s for Deadwood. In order to counter the population decline and cyclic economies driven by tourism, all four communities, led by Deadwood, undertook a unique community development project: that of legal, local option, limited stakes gaming intended to attract a steadier stream of visitors.

Private Efforts to Amend State Constitutions

After two and a half years of local campaigning and state-wide lobbying, the *Deadwood You Bet Committee*, an ad hoc group of hotel and bar owners, was successful in securing legislative, constitutional, and local approval for local option gambling. Although two previous initiatives failed in South Dakota, an amendment was passed 64 percent to 36 percent November 8, 1988, to allow local option, legal, limited stakes gambling in Deadwood with most of the revenue being earmarked for historic preservation and with the stipulation that 60 percent of local voters approve gambling. In Deadwood the measure passed in a special election 690 to 230 on April 11, 1989. Gaming was sold to the state and local residents on the basis of ensuring the preservation of significant historic buildings which would provide long term gains to year-round tourism. Most local residents assumed that limited stakes gaming would complement and enhance the existing community tourist economy, giving renewed vitality to a "dying community." Gaming was envisioned as simply supplementing existing tourist businesses. In fact, a study commissioned by local government predicted a gross revenues of only two million dollars during the first year of operation (Madden, 1988).

Historic Preservation via Gaming

It is not absolutely clear whether gambling was first proposed as a means of supporting community revitalization (including historic preservation) or whether historic preservation became the legitimate rationale for approving gambling, but the two became inextricably linked in the promotion of legalized, low stakes, local option gambling in both South Dakota and Colorado. What is clear is the fact that gambling was approved only when the amendment included the requirement that proceeds return directly to a Historic Preservation Commission in Deadwood.

Deadwood opened its first casinos November 1, 1989. While November 1 was opening day, the months preceding gaming proved indicative of future changes. During the summer of 1989, a land speculation boom began, buildings

were traded or bought, leases were canceled, and risk-taking operated at high pitch. Land values soared. One building appraised before the April, 1989, election at \$75,000 sold later for \$300,000 (Stubbles, 1990). Some locals became millionaires. Gaming revenues from the first day exceeded expectations by a factor of ten. With escalating property values and tremendous potential gaming revenues, many businesses either sold their enterprises or became gaming proprietors by converting their retail stores to gaming parlors. Those who resisted the gaming fervor were compelled to reconsider once property assessments reflecting fair market value were announced. For example, a "steeply sloped lot skyrocketed from a \$4,000 appraisal in 1990 to \$756,250 in 1991" (Ledbetter, 1991, p. 1). The rising property values had the unintended consequences of accelerating the conversion of retail properties to more profitable gambling enterprises.

All of downtown Deadwood is a historic preservation district; therefore, the Historic Preservation Commission controlled the external appearance of buildings, although few constraints were placed on refurbishing the building interiors, most of which were gutted to make room for the new, glitzy, noisy slot machines. Buildings were viewed as commodities to be used to maximize profits. During the first nine months of legalized, local option gaming, more than seventy buildings were converted from retail/wholesale enterprises to gaming parlors (*Rapid City Journal*, October 29, 1990). A sample of conversions includes the A&W Drive-In becoming the site of Deadwood Gulch Resort and Convention Center; Anthony's clothing store became the Gold Dust Gaming Hall; and the Coast to Coast hardware store was converted into Rotten Luck Willie's.

Almost two years after the onset of gaming in Deadwood, South Dakota, 21 casinos opened on October 1, 1991, in Cripple Creek, Black Hawk and Central City, Colorado. As in South Dakota, local, limited stakes gambling was approved by an amendment to the state constitution during the November 1990 election. The amendment was approved by a 57 percent to 43 percent vote at the state level, while the measure squeaked through in the three cities with 499 voting in favor and 461 opposed. There limited stakes gaming was sold to the voters as a revenue enhancement measure designed to support the general fund, historic preservation and the local economies of Teller and Gilpin Counties. And, as in Deadwood, land speculation preceded the onset of gaming with property values doubling and redoubling as downtown businesses converted to casinos. Teller County Assessor Reta Bowman recorded 78 property transactions between January and September, 1990, totaling \$3.2 million, almost as much as the previous five years (*Denver Post*, October 14, 1990). Similar real estate transactions occurred in Gilpin County as evidenced by six million dollars of transactions in the single month of February, 1991, and two more million in March (*Denver Post*, March 28, 1991).

Economic Provisions of Limited Stakes Gaming

Although gaming action exceeded initial expectations in all four gaming communities, and all four communities experienced wholesale conversion of retail businesses to casinos and gaming parlors, substantial differences distinguish the volume and distribution of revenue from gaming in the two states. Deadwood casinos operated under five dollar bet limits and the “gaming parlors” were limited to 30 “gaming devices” per building. Initially, local ownership (at least 50 percent) was required. Gaming was overseen by a gaming commission with power to regulate, license, and enforce gaming rules. All measures were designed to maximize local participation and to safeguard against organized crime. South Dakota levied an eight percent tax on adjusted gaming revenues. Those tax revenues were allocated to the State Gaming Commission (50 percent), the South Dakota general fund (40 percent), and Lawrence County (10 percent). The historic preservation fund received a \$2,000 annual licensing fee on each of 1,990 or so machines. The Historic Preservation Commission also received unspent monies allocated to the gaming commission. Thus, in South Dakota the lion’s share of gaming revenues not received by owners of establishments was returned to the local historic preservation fund.

While the number of gaming devices remained relatively constant, the amount of gaming action, adjusted gross revenue, and tax revenue increased dramatically each year. A pattern of substantial monthly fluctuation is relatively consistent, with gaming action peaking during the summer months and gradually declining to a low point in November and December of each gaming year. Data from Figure 4 reveal that gaming as an industry provided Deadwood proprietors with a large potential revenue, but that revenue source, like previous tourism, was influenced heavily by seasonal variations.

An examination of Table 2 reveals that for fiscal year ’90 (November 1, 1989 through June 30, 1990), a short fiscal year of eight months, total gross revenues in Deadwood were \$13.8 million (based on a gaming action total of \$145.4 million). This resulted in just over \$1.1 million revenue to the state, county and gaming commission. For fiscal year ’91, the first full year, total gross revenues were just under \$32.8 million based on about \$330 million in gaming action, and taxes of \$2.6 million were collected. Gaming action for fiscal year ’92 continued to spiral upward, totaling just under a half billion dollars that generated \$39.6 million in gross revenues and \$3.1 million in gaming tax. Again reference to Figure 4 emphasizes the general upward trend by gaming year through 1992, but tremendous seasonal variation within each year. For example, during fiscal year ’93 Deadwood gaming action varied from a low of \$22.5 million (December, 1992) to a peak of \$54.9 million (July, 1993).

Although similar to Deadwood in many respects, limited stakes gambling in Colorado’s three mountain towns varied appreciably in revenue base and tax structure. The first full year of gaming in Colorado was typified by exceedingly

Table 2. Gaming Revenues for Deadwood, South Dakota

Month	Gross Revenue in Millions 8% Tax on Revenue									
	1989/90		1990/91		1991/92		1992/93		1993/94	
	Revenue	Tax	Revenue	Tax	Revenue	Tax	Revenue	Tax	Revenue	Tax
July	—	—	3.4	.27	5.0	.39	5.2	.41	5.5	.42
August	—	—	3.6	.29	4.6	.36	4.6	.37	5.0	.40
September	—	—	3.5	.28	4.3	.34	4.7	.37	4.9	.39
October	—	—	2.9	.22	3.3	.26	3.5	.27	3.6	.28
November	1.3	.10	1.9	.15	2.4	.19	2.4	.19	2.4	.24
December	.8	.07	1.8	.14	2.1	.16	2.1	.16	2.3	.23
January	1.4	.12	1.7	.13	2.2	.17	2.5	.19	2.5	.26
February	1.5	.12	2.2	.18	2.5	.20	2.7	.21	2.7	.25
March	1.9	.15	2.6	.21	3.0	.24	3.3	.26	3.2	.34
April	1.8	.15	2.6	.21	2.9	.23	3.1	.25	3.1	.31
May	2.4	.19	3.1	.25	3.3	.26	3.5	.27	3.6	.36
June	2.7	.22	3.5	.28	4.0	.32	4.3	.34	4.3	.34
Total	13.8	1.12	32.8	2.61	39.6	3.12	41.9	3.29	43.1	3.82

Source: South Dakota Commission on Gaming, Monthly Reports, 1989-1994.

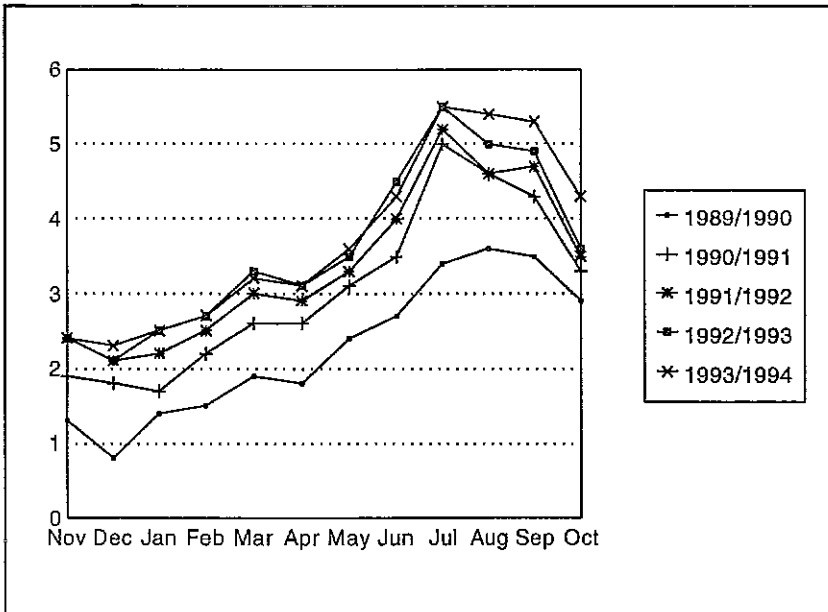


Figure 4. Gaming revenue in millions, Deadwood, South Dakota, 1989–1994.

rapid growth of the gaming industry. Gambling opened October 1, 1991, in 21 casinos containing 1,920 gaming devices. One year later, September 30, 1992, there were 72 casinos with just over 11,300 gaming devices. The amount of gaming action, adjusted gaming revenue, and gaming tax revenue continued a steady but cyclical increase. Unlike South Dakota, Colorado did not place a limit on the number of gaming devices; however, it did restrict space devoted to gaming devices to not more than 35 percent of a building's space, nor more than 50 percent of a single floor, a restriction that has led to large-scale gaming casinos.

The distribution of Colorado gaming proceeds also differed from South Dakota. The Colorado Gaming Commission initially imposed a three tiered system whereby casinos with less than \$440,000 revenue paid 4 percent tax; casinos making between \$440,000 and \$1,200,000 paid 8 percent tax; and the most profitable casinos (those making in excess of \$1,200,000) paid a 15 percent tax. That tax system was revised October 1, 1992, to a two layered tax structure with those casinos making less than one million dollars paying a 2 percent tax, while those with revenues in excess of one million dollars pay a 20 percent tax. This measure was designed to give the small "mom and pop" operations a competitive advantage over the large "corporate" casinos which have access to extensive advertising and live entertainment.

During fiscal year 1991 (October 1, 1991 through June 30, 1992) the adjusted gross revenue was \$96.5 on about one billion dollars of gaming action which produced \$10,793,151 in state gaming revenue. (See Table 3 and Figure 5) Distribution of these state gaming taxes differed from South Dakota. The Colorado general fund received 50 percent of the tax revenues (.2 percent was allocated to promote state tourism), 12 percent went to the two counties (based on the volume of gaming revenue), 10 percent went to the three communities and 28 percent was earmarked for historical preservation, of which one-fifth went back to the three communities for historical preservation. For the first budget year the state dedicated a portion of its gaming tax revenue (4.7 percent of total state gaming taxes) to the counties for impact mitigation.

In addition to the distributed gaming revenues, each of the respective communities had an annual licensing fee per gaming device, with Central City charging \$1,000, Black Hawk charging \$800 and Cripple Creek charging \$1,200 for the fiscal year 1991. The annual licensing fees produced more revenue for

**Table 3: Combined Gaming Revenues in Millions for Three Colorado Towns:
Black Hawk, Central City and Cripple Creek, 1991-1993**

<i>Date</i>	<i>Adjusted Gross Revenue (millions of dollars)</i>	<i>Total State Taxes (dollars)</i>
October, 1991	8.4	495,753
November, 1991	6.7	618,832
December, 1991	8.1	858,345
January, 1992	8.9	991,524
February, 1992	10.9	1,267,616
March, 1992	11.7	1,341,081
April, 1992	12.3	1,560,000
May, 1992	13.9	1,760,000
June, 1992	15.6	1,900,000
TOTAL FY 91	96.5	10,793,151
July, 1992	19.3	2,210,365
August, 1992	20.5	2,358,342
September, 1992	19.5	2,365,326
October, 1992	19.0	591,335
November, 1992	14.3	1,424,147
December, 1992	14.2	1,747,610
January, 1993	17.4	2,411,199
February, 1993	17.0	2,647,521
March, 1993	20.1	3,257,496
April, 1993	20.1	3,421,850
May, 1993	23.1	3,972,061
June, 1993	21.9	3,715,621
TOTAL FY 92	226.4	30,122,873
July, 1993	26.5	4,609,972
August, 1993	25.6	4,593,358
September, 1993	24.9	4,659,897

Source: Colorado Gaming Commission, Monthly Reports, 1991-1993.

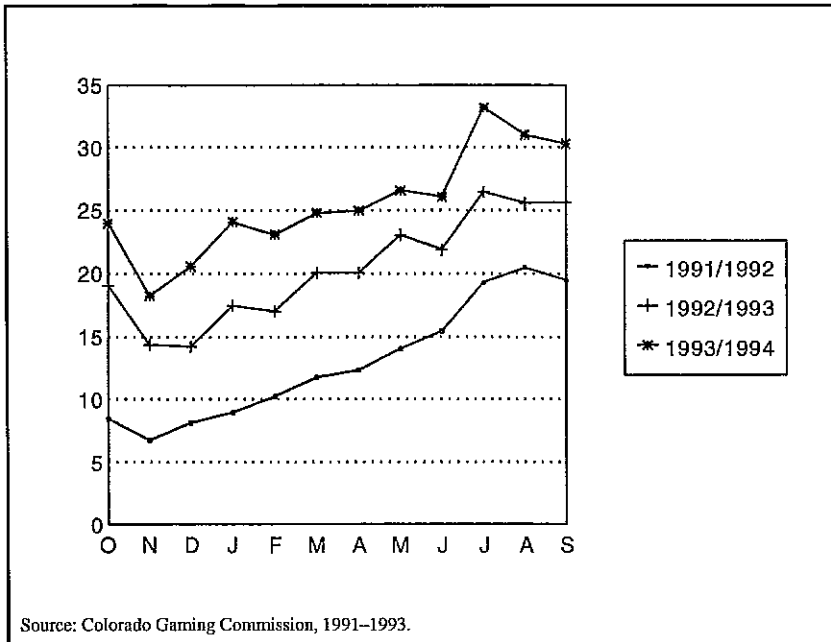


Figure 5. Gaming revenue for Black Hawk, Central City & Cripple Creek, Colorado.

Adjusted Gaming Profits, Millions, 1991-1993

the respective communities than their proportion of state gaming taxes. Thus, in Colorado the distribution of gaming revenue directly to city government allows local communities to address impacts generated by gaming without having to make a justification to a historic preservation committee.

Employment in the Gaming Industry

Initial employment changes were dramatic. Local option, limited stakes gaming in Deadwood, South Dakota (population 1,830) generated approximately 1,800 new gaming jobs, albeit many of them part-time and unbenefitted, (Madden, 1991). Generally, wages for these jobs were low, with most paying between \$5.00 and \$6.00 per hour. Given the cyclical nature of gaming in Deadwood, employment demands were greatest in the summer months and decreased substantially from November through January. Unfortunately, limited employment opportunities outside of gaming in Deadwood resulted in labor turnover during the slack gaming months.

Apparently the Colorado communities as well have begun to experience cyclical shifts in gaming revenues. Although there was some decline in employment in the winter of 1992-1993, employment in the gaming industry had

created approximately 1,500 jobs in Cripple Creek (a town of only 600 population in April, 1990) and 3,250 jobs in Black Hawk and Central City (with populations of about 250 and 300 in 1990). The unemployment rate was half of that of the rest of Colorado (about 2.7 percent in September, 1991) and hourly wages are between \$7.00 and \$9.50. Although about 300 jobs have been created for local residents, most employees commuted from surrounding Denver and Jefferson Counties or from Colorado Springs.

Employment in casino/gaming parlors has increased dramatically for all four communities, but the replacement of retail enterprises by the gambling industry has eliminated employment in these sectors. For example, presently, Black Hawk and Central City have no grocery stores, pharmacies, gas stations, hotels, mini-markets, or clothing stores, and most services are absent. All four communities have become captives of the gaming industry and are dependent on the vicissitudes of that industry.

COMMUNITY TRANSFORMATION

Historic Preservation

All four of the gambling towns are designated National Historic Landmarks, and historic preservation efforts have had noticeable effects on the main streets of all four towns. With \$4 million in gaming device fees the first year and \$8.8 million in revenues made available to historic preservation after the first year of gambling in Deadwood, the resources are significant. And, having now been in the gambling business for four years, even residents who are ambivalent about gambling will say that the town looks immeasurably better. The Deadwood Historic Preservation Commission has become much more powerful than the city government in determining the direction and appearance of the town.

Changes are visible in the facades of the downtown buildings converted from retail business to casinos. As an example of the trend which Murtagh calls "facadism—the postmodern design idiom" (Murtagh, 1988), old porches, awnings, false fronts, and plank sidewalks have been torn down. The usual brick sandblasting and trim painting has returned a turn-of-the-century look to several blocks. But historicity has taken precedence over uniformity, so several buildings from the 1930s have been restored to their art deco appearance. Because Deadwood's water and sewer lines were old and inadequate (wooden mains failed to provide enough pressure to fight fires at the lower end of town), some revenues were used during the second year to rebuild this infrastructural feature. Once the street was torn up, the city decided that the restoration of brick surfacing, at a cost of \$4.1 million for the main street, would add to the attraction to pedestrians. Three hundred thousand dollars was used to add Victorian style lampposts on Main Street. The Lawrence County Courthouse was also refurbished, stabilized with a new foundation, and extended with a new annex and plaza with an additional \$4.8 million. The city has restored an old depot to

become a visitor center between the courthouse and main street and a recreation center was gutted and reconstructed at a cost of \$1.2 million.

One of the few efforts to improve housing in a town increasingly filled with commuting workers was restoration of the historic Gillmore Hotel. The large wood frame structure in French Second Empire style was built in 1892 with notched and pegged style rather than being nailed together. A fairly run-down apartment house in 1991, when a plan to refurbish it for use as a luxury hotel was turned down by Deadwood voters, the owner then submitted a plan to restore the Gillmore for use as “affordable housing” by combining tax credits arranged through the South Dakota Housing Authority and low interest loans from the Deadwood Historic Preservation Commission. Fourteen one and two bedroom apartments rented, based on occupants’ median income, for \$320 to \$400 per month. Other efforts to encourage private home owners to apply for preservation monies to refurbish their homes were more often regarded with suspicion about subsequent control over private property.

Also greeted with less than universal enthusiasm by business owners were the Historic Preservation Committee’s sign ordinances, which regulated the size and shape of nameplates, calculated “total signage,” and prohibited most use of neon. Mark Wolfe, Historic Preservation Director, was adamant that Deadwood not look like Las Vegas (Wolfe, October, 1991). It doesn’t, at least from the street, and he has been willing to do battle with the Costners over the historically appropriate shape of the awnings on the Midnight Star.

There are, however, very real limitations to historic preservation in the presence of low stakes gambling, which is defined most prominently and profitably by slot machines. The gaming devices, while intended to provide exciting variations on the business of dropping in coins and pulling a handle, are all essentially metal and plastic, with bright flashing lights, loud but short musical jingles and colorful moving parts. There was nothing particularly historic about the slot machines in Deadwood, except for one business which advertised historic slot machines housed in a “museum” in the back of the building.

Even with the best of historic intentions and a liberal interpretation of the idea of “adaptive reuse,” the most owners and historic preservation officers were able to agree on or accomplish in Deadwood interiors were the retention of a few original tin ceilings, gigantic chandelier reproductions, some magnificent wooden bars, and colorful Victorian carpeting. Otherwise, the uniformity of business enterprises—gambling, food, and drink—provided only minor variations in decor depending on the character celebrated: Calamity Jane, Wild Bill and Seth Bullock; or the dream of winnings: Lucky Draw, Midnight Star and Golddiggers.

More controversial are the stands the Historic Preservation Commission has taken with a few business sites which proved unsuitable for gambling. These are now valued too highly for their old retail purpose, but are within the National

Historic District and prohibited from being demolished. Last May the owner of one of the three auto dealerships which went out of business with the advent of gambling asked for permission to demolish two twenty-by-twenty stucco buildings formerly used as an office and garage on the lot used to display cars. While not contesting the new \$190,000 assessment on the 125 foot-wide lot or the \$9,000 taxes, businessman Pat Roberts said that he couldn't find a use for the land while the buildings were standing. Historic Preservation officer Mark Wolfe responded that under current regulations "economic hardship" was not a sufficient justification for demolishing a building judged important to the architectural fabric of a historic community such as Deadwood. Deadwood's oldest filling station, Eagle Oil Company, opened in 1927 in the two structures with a white picket fence against a wooded hillside. The buildings represent the last of their kind in Deadwood, and are presently being protected (*Lawrence County Centennial*, May 23, 1992). The Commission gave preliminary approval to Roberts' seeking a pawn shop operation and ordered literature outlining creative uses of old filling stations.

This case and continuing litigation over unapproved destruction of property demonstrate the difficulty of providing tourist amenities other than gambling when property values escalate and historic preservation limits changes of physical structure. Moreover, they reflect the difficulty of the preservationist case in the face of "the independent attitude of the Westerner, and the region's strong tradition of property rights," in the words of William T. Frazier, Director of the Western Regional Office of the National Trust (Delahanty, 1985, p. vii).

Still, if Deadwood gambling ironically makes possible, yet possibly destroys, the preservation of historic buildings, the South Dakota effort was relatively successful compared to the changes in the Colorado gaming towns. In August 1992, the National Parks Service downgraded Deadwood from Priority One level (of serious damage or eminently threatened with damage) to Priority Two (communities exhibiting the potential for damage or have threats to the landmarks' integrity). At the same time it placed Central City, Black Hawk and Cripple Creek on its list of most endangered historic landmarks because of the gutting and demolition of historic buildings and the "incompatible new construction" in those towns with the advent of casino gambling (*Denver Post*, August 11, 1992). While funds were made available in Central City, Black Hawk, and Cripple Creek (5.6 percent of all state gaming tax revenues), there are less stringent mandates on how to use it. Facades in the business areas of Central City have been restored, but only one bar, without gambling, has attempted real interior historic preservation. In Black Hawk, most of the space is occupied by new construction, some of it massive, as allowed by the wider canyon along Clear Creek as opposed to the two narrow streets and steep side hills of Central City. New buildings with lower ceilings, balconies, and densely spaced gaming machinery are a better investment than an old Victorian store front. While the Deadwood Historic Preservation Commission balked at approv-

ing a plan for a six-story hotel, Central City and Black Hawk now have two Bullwhackers casinos, with 1,350 slot machines and 800 employees, one of them in a gigantic new structure.

Changes in Tourism

Although these towns developed their image as family tourist destinations, there are now few things for children to do in town, and not many places for them to be. Most television news stories have shown them in front of Goldberg's in Deadwood. The last "downtown" grocery store maintains its soda fountain and features one sign welcoming children and another saying that parents must keep their children under control, but it has installed poker tables and slot machines where the groceries used to be. An old-fashioned portrait studio is about the only other attraction suitable for visiting children.

Deadwood's only remaining supermarket features slot machines in the front of the store, and social service personnel worry that children of both local residents and visitors hang out there while their parents play the slots (Hawkins, October, 1991). In fact, local police and child protection personnel receive frequent calls about children of gambling patrons left in cars in the middle of the night, even in winter, and about children left unsupervised while parents work in what has become a 24 hour business day (Crotty, May, 1992).

Children were not apparent at all in Central City. Because the highway into town was so narrow and slow, arrival by shuttle bus from Denver became the encouraged mode of transportation. Private cars were required to park in lots carved out of the top of the mountain behind town and ride shuttle buses down the hill. And there were very few places to stay in town. Consequently patrons tended to come for three or four hours to gamble and return to Denver. The only places children were allowed in Central City were the candy store or the rock and tee-shirt shop. A gold mine tour at the top of the gulch had 50 percent less business in 1992 and the proprietor, Mayor Dick Allen (November, 1992) turned instead to charging parking fees for downtown gamblers. He reported, however, that the city had set aside \$50,000 for a playground above town to help attract families back to Central City.

While there is nothing inherently dysfunctional or destructive about towns relying on adults for its revenue, clearly adult-centered tourism changed these communities. All had a larger number of visitors than in the past, including a four-fold increase in Central City/Black Hawk and Cripple Creek (from less than a million to more than 4.5 million in 1991-1992). In the summer, young adults and single people abounded. In the fall, older people on bus tours predominated. Deadwood recently negotiated a contract with one company for 800 bus tours. Central City may eventually attract visitors all year round, if it successfully markets bus rides from the ski resorts and the Denver Stock Show, but each person who comes to Central City spends less than half (\$19 as compared to \$42) what a Deadwood tourist does because they do not stay overnight. Dead-

wood visitations and revenues have so far dropped off in a cyclical pattern each of the four winters it has had gambling, just as they did in previous years. Thus the year round tourist attraction still proves elusive. And the Colorado gambling towns (at 10,000 feet) are bleak, cold, and empty in the winter months. Nowhere has gambling so far changed the seasonal nature of income and employment which has always limited the towns' prosperity.

FINDINGS: GAMING, COMMUNITY DEVELOPMENT, AND ENTREPRENEURS

As noted above, private entrepreneurs initiated the political process that made local option, limited stakes gaming possible as well as provided the capital needed to start the gaming enterprises. Gaming investors are examples of what Eisinger referred to as high risk venturers who attempt to capitalize on a pent up demand. Other than providing regulatory and oversight functions, government was not initially involved in the gaming industry.

However, what began as a community revitalization effort jump-started by private capital has become a community development effort driven by high-risk capital supported by minimal state and extensive local government projects that funnel gaming revenue back into the communities (particularly in Deadwood). All evidence suggests that limited stakes, local option gambling has exceeded all expectations in attracting gamers, gaming action, gross gaming revenue and taxes for state and local government. Gambling revenues provided the funds to rebuild deteriorating city infra-structures such as water and sewage systems, city streets, curbs and gutters, a new courthouse in Deadwood, and a proposed new county courthouse/city hall for Gilpin County/Central City. In addition, historic preservation funds coupled with private investments in gaming parlors have as of 1992 generated over \$40 million and \$100 million in new and restoration construction in Deadwood and Colorado respectively. Gaming has created about 4,700 new jobs in the three Colorado towns and 1,800 in Deadwood. Given the relatively small population bases of these towns, many of the workers come from surrounding communities. In Colorado, workers are primarily drawn from the Denver metropolitan area and from Colorado Springs, while in Deadwood, workers commute from the surrounding small towns of Sturgis, Lead, and Spearfish. Thus, gambling has provided spill-over economic benefits to surrounding areas.

As in many community development schemes, local option gambling has its costs. Yet, unlike many development schemes where developments attract substantial in-migration, gaming has resulted in the conversion of retail businesses to gaming casinos and halls, thereby limiting the local consumer's options and in many cases requiring a minimum drive of thirty minutes to buy daily necessities. Other problems cited by locals involve traffic congestion, lack of parking, and loss of a sense of community: the lack of a common meeting place

for coffee and conversation. Individuals with property in the core of the respective cities have seen their property values skyrocket along with their property taxes. Those willing to sell have garnered large profits, in many cases 1,000 percent or more over pre-gaming property values. However, those desiring to remain in present locations and not willing to convert their homes or businesses to gaming have been faced with a similar ten fold increase in their tax assessments.

With a 400 percent increase in tourism, the small mountain communities have also been confronted with additional social problems, including increased crime rates, particularly check fraud; increased demands on the court system, with felonies increasing between 33 percent and 600 percent (Bloomberg, 1992); and increased demands on local law enforcement (Opitz, 1992). There are more reported cases of neglected children (since gaming operates 24 hours a day in Deadwood, with few facilities for child care); increased local concern for their youth since gaming is an adult centered activity which has driven out teenage recreation (i.e. the A&W is gone along with other "hang-outs"); and increased social pathologies such as alcoholism, gambling addiction and vandalism (Hawkins & Crotty, 1992).

While gambling has been a longstanding, sometimes legal, sometimes illegal, phenomenon in these old mining/tourist towns, the new form of gambling has turned them into single industry, single product places. Even the gentrification of historic preservation takes an odd twist, for downtown businesses are more profitable and more attractive on the surface, but housing has so far been mostly unaffected. Workers in these towns are increasingly commuters. And accompanying them daily are the influx of tourists who stay an average of three hours in Central City and Black Hawk or two days in Deadwood. Gambling has dramatically changed the communities not only for people who live and work there, but also for tourists.

Many questions remain about the future of these towns as more and more small towns attempt to get on the gambling bandwagon and people might be able to gamble in places which are more accessible. Questions remain as well about how long people will be fascinated by slot machines in which the house and the state are the big winners. Questions remain about what the towns will have gained by way of historic preservation and investment in infrastructure if this tourist hand plays out.

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INTEGRATING THEORY AND PRACTICE: LEADERSHIP AND COMMUNITY DEVELOPMENT IN THE DAKOTAS

By Janet Kelly Moen

ABSTRACT

A model to enhance community and economic development, referred to as the Dakota Model, is presented as a mechanism to encourage empowering, collaborative network development. This model was applied through a leadership training program, sponsored by the W.K. Kellogg Foundation. The program, Dakota Leadership Education and Development (LEADers), was implemented in North and South Dakota from 1989 through 1991 by six-member teams from thirty-two rural communities. The teams received training, conducted community assessments, and planned and executed a community development project. This process is described, giving particular emphasis to the projects. Evidence is provided to support the efficacy of the model. Implications are given for the use of the Dakota Model to enhance grassroots participation in multiple settings.

INTRODUCTION

Recent issues of the *Journal of the Community Development Society* have contained articles discussing the importance of the formulation of a model for community development efforts (Cawley, 1989; Coe, 1990; Jones & Silva, 1991). These models provide interesting conceptualizations drawn from the practical work of the researchers who designed them. A brief discussion of these models introduces critical concepts which practitioners must address in developing current practices, and highlights implicit criteria for the development of such models.

Cawley (1989) made two important contributions to the development of model-building in his work with three separate community projects in Montreal. First, he called for inductive or field-based, grounded theory. Second, based on participant interviews, he moved away from the more static, linear models of the past, and formulated a dynamic model, characterized by repetitive cycles. In this process participants learn of the complexity and inter-relatedness of issues, and, "as they continue to meet and solve various problems, they learn more

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about their concerns, their community, and often, themselves" (Cawley, 1989, p. 109).

Coe (1990) also used a field-based approach to analyze the implementation of a public-private partnership for downtown improvement in Denver, Colorado. She advocated the open focus model comprised of three core elements: a communication network based on mutual goals and interests, leadership which encourages project participants to take active roles, and collaboration in the development and refinement of a shared community vision.

Jones and Silva (1991) advocated an integrated practice model for development. This involves problem solving (action), community building (ownership), and systems interaction (direction). This model takes the process a step further by encouraging the integration of local participants with change agents from different systems beyond the locality. Thus it is one of the most comprehensive of the recent models.

The first two models are compelling and have a certain degree of utility, but there is an underlying assumption of a closed environment, in which the community itself is the basic source of social change. Similar models, especially as illustrated by the example described by Cawley (1989, pp. 101-103) are basically problem-solving approaches, variants on the business-oriented trend toward "strategic planning." This can be a very task-oriented, short-term, instrumental process.

The more recent models, particularly those presented by Coe and by Jones and Silva, stress the participatory, people-oriented dimension which is so consistent with the stated Community Development Society goal of "promoting citizen participation as essential to effective community development." This was expressed in the elements of the open focus model which stressed the communication network and widespread leadership, and in the integrated practice model through the community building, or ownership, and systems interaction components.

These models may be seen as heuristic devices which can be applied to any number of community development processes, and utilized to design new processes. They fall short, however, in the conceptualization of a structural application of how and why people should organize themselves in communities for development and growth, both in a community sense and in an individual sense. It is the purpose of this paper to demonstrate an application of a comprehensive model of a viable community organizational structure which can be used to facilitate integrated and holistic community development. This conceptualization, referred to as the Dakota Model, is based on a practical combination of sociological concepts, drawing on the social psychology of empowerment, structural sociology, and political sociology, particularly through implications of community power, internal colonialism, and leadership development.

Methodology

The Dakota Model has been developed in a demonstration project which can be described as a form of applied sociology. While it does not meet the exact criteria for action research (Elden & Chisholm, 1993), it bears much similarity to cases of action research. The programmatic application had a distinct purpose based on value choices about the need for development, a contextual focus, an emphasis on sense-making, some degree of participation in the process, and limited knowledge diffusion.

The Dakota Model was employed in a leadership and economic development program implemented in thirty-two small rural communities in North and South Dakota between 1989 and 1991. The Leadership Education and Development Program (LEADers), sponsored by the W. K. Kellogg Foundation, was carried out by collaborators throughout the two states. The effort was coordinated through the Center for Rural Health at the University of North Dakota, with Jack Geller and Robert Boyd (Outreach Division) as co-principal investigators. The Center hired a Project Director, Education Director (the author), and Field Representative as the main staff of the Program. Other collaborators included the Cooperative Extension Services of North and South Dakota State Universities, the South Dakota Governor's Office, the North Dakota Economic Development and Finance Commission, the North Dakota Regional Planning Councils and South Dakota Planning Districts, and several utilities, including Montana Dakota, Basin Electric and East River Power Cooperative.

This paper presents the development of the Dakota Model and the sociological ideas which are the structure of the model. The implementation of the model in the Dakota LEADers Program is then described. The development projects accomplished by the program participants are presented, categorized, and analyzed as an example of the utility of the model. Implications are also provided for application in other community settings for the enactment of comprehensive community development.

THE DAKOTA MODEL

The Dakota Model (see Figure 1), which served as the organizing principle of Dakota LEADers, was designed specifically to meet the distinct resource mobilization needs of rural communities. These needs have been cited by a number of rural development authors (cf. Warren, 1978; Luloff & Swanson, 1990; O'Brien et al., 1991; Flora et al., 1992), using a variety of terms, but particularly as an expression of the need to enhance both **horizontal and vertical community linkages**. This issue can be best summarized as 1) developing the capacity of community members to work together toward the achievement of shared goals, and, 2) gaining access to resource networks outside the community (Tipton, 1992).

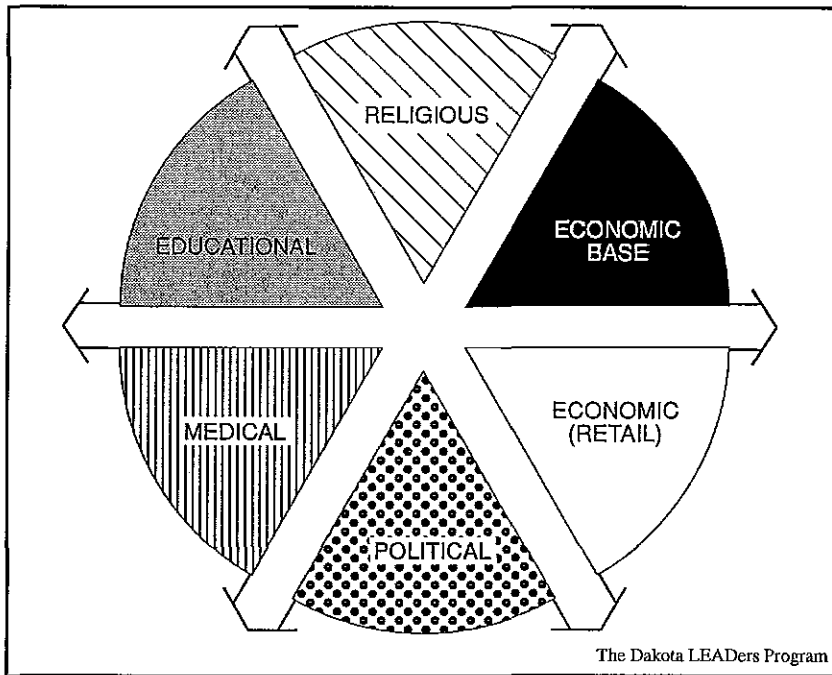


Figure 1. The Dakota Model for empowering community leadership: local partnerships, external collaboration.

The theoretical underpinnings of the model come from structural sociology, which has found widespread recognition in the form of network analysis (cf. Marsden & Lin, 1982; Burt, Minor & Associates, 1983). The work of Granovetter (1973) in particular, has served to popularize the concept of "the strength of weak ties" or the utility of extended networks and linkages. Much of this important work has dealt with the existence and form of networks, but less has been said about the creation or content of the network ties themselves.

The Dakota Model drew more specifically on work by Eberts and Kelly (1985) and their formulation of a typology of leadership roles based on a survey of mayors in communities throughout the northeastern United States. They posited four types of mayors, based on the degree of local and extra-local linkages which they forged. Leaders found to be most effective, typed as activists, were those who built networks on both the local and trans-local levels.

Some support for the efficacy of activist leadership has recently been documented by O'Brien et al. (1991) in a study of Missouri communities. Searching for the link between leadership and community success, they found that in more viable communities, leaders had these types of multi-level networks. O'Brien et al. suggested that future research should devote more attention to the processes of the network formation, development, and nurturance.

This orientation to leadership as a role set of local and trans-local linkages became the core of the design for the Dakota LEADers Program. In the Dakota Model, the coalition-building mechanism to strengthen these local and non-local networks is institutionalized into the leadership development structure. Community leadership teams composed of men and women from critical sectors are established to form the basis of the creation of a set of comprehensive community linkages. Not only will this allow people from various sectors to work together toward a commonly identified goal, but will enable them to start a process of gaining insight and understanding about how other people (who are more deeply involved in other sectors) view the issues they select to confront. This is especially important for people who may be active in sectors which do not traditionally overlap a great deal or which are not usually active in community development efforts (for example, the religious or education sectors).

In order to work with the relatively small rural communities in North and South Dakota, six critical sectors were identified. It is important to note that these sectors should vary, based on consideration of the general demographics of different regions of the country, or for use in other organizational settings. The sectoral categories used for this particular program included: *economic base*, defined as primary industries exporting goods or services (agriculture, ranching, energy extraction, and tourism); *economic*, used to refer to “main street” activities such as retail and wholesale trade, finance, and other business and professional service enterprises; *political*, comprised of people representing or working in local general purpose municipal or county units of government; *educational*, which in this case was limited to primary and secondary school personnel and included youth as a sub-category; *religious*, people affiliated with church organizations (which in this area was approximately 75 percent of the population, and included most senior citizens); and *medical*, which was broadly defined as people who were delivering health care services.

The second mechanism of the design is formulated to establish and strengthen non-local coalitions or networks. Each of the team members was asked to define and activate relationships within their own sector on various levels—regional, state, national, and international (illustrated by the arrows in the model). Of course, they might develop or utilize ties in other sectors as well, but were asked to focus on the linkages relevant to their own occupational or avocational interest. This helps community residents define an active role for themselves, encouraging them to overcome the passive roles implied for so many members of the small town in mass society.

The underlying rationale for this second component of the model stems from an understanding of “internal colonialism,” a by-product of world-systems theory. On the largest scale, the system is configured to draw resources from the periphery, or less developed regions. Resources are transferred into the core, in a redistribution system which leads to ever increasing inequality among both people and places (Wallerstein, 1979). On the national level, this internal

colonialism is manifested in rural regions on a smaller, internal scale. This occurs in several ways.

First, there are capital drains which take many forms: the transfer of local savings through local banks into larger investment markets, the transfer of capital produced from local sources as people take their life savings to distant retirement localities, and the passage of inheritances to children who have left local communities. Second, a more important resource, young people in their productive prime, who have benefited from the local land-based tax supported system of education, leave smaller and more isolated communities in search of further education, jobs, or other opportunities. Third, many communities in the periphery are based on resource extraction, and one or another of their raw materials may be purchased at low cost and transported to distant locations where they are turned into expensive goods; these goods may in fact then be imported back into the local area where they are purchased at even greater cost to local residents. Finally, there are any number of economic "leakages" which occur as people shop or utilize services located in larger regional centers.

Local residents need to recognize that these same mechanisms which operate so efficiently to remove resources from their communities, can be activated to **bring resources back into the community**. In other words, the road runs both ways. Of course, other networks must be activated as well, but locals can learn to establish trans-local linkages which can be tapped to bring a variety of new resources into their communities. The leaders of the locality can learn to ask for greatly increased return on their investments instead of acting as facilitators for the drains into the larger metropolitan centers of their region. By placing an emphasis on the development of locally beneficial trans-local networks, the model creates a kind of mutual-gain consciousness raising.

The array of these resources may take the form of new ideas, exchanges, services, grants, or other human, financial, or intellectual capital which might be targeted for use in the local community. For example, a teacher can cultivate association memberships in both the state teachers' organization and in the National Education Association, which can be used to import new ideas about school organization, curriculum or special programs, to bring in consultants, or even to promote a teacher exchange program. A person representing the medical sector, a hospital administrator perhaps, can access educational programs for staff and community members or can contact a state or national office for assistance with physician recruitment. As a specific example, the University of North Dakota School of Medicine, through the Center for Rural Health, provides many services to people in communities throughout the state: distance educational programming, physician recruitment, leadership training, assistance with local assessments, and data analysis.

Under the ideal system of the Dakota Model, the members representing the various sectors have the combined potential for activating the widest possible set of resource linkages. Many of these "resources" may fall outside the

traditional notions of economic development resources, but can provide rich and varied potential for community development. Moreover, by focusing on their roles as part of a core of network ties, and working together on commonly defined goals, the leadership team can begin to see the community in a holistic perspective, and to develop a consciousness of the location of their community in global social space.

In addition to the principal theme of collaboration through a systematic set of network building activities, a second, interrelated theme is fundamental to this model. This is the often misunderstood concept of empowerment. (A comprehensive treatment of the concept has been provided by Torre, 1986.) The applied empowerment work of Roberts and Thorsheim (1987) was adapted for use with the Dakota Model, to help each leadership team focus on the specific behaviors which would maximize both their team interactions and their ability to involve the public in meaningful ways.

Roberts and Thorsheim have written about the importance of the idea of mutuality or "walking with" in their work with community groups. This is central to the creation of workable coalitions of people from diverse sectors who come together to address community issues. Traditionally in community development, and particularly in economic development, people from the governmental sector and from the business sector (often mainstreet retail owners) have been the primary actors (Israel & Beaulieu, 1990). If the base of participation is to be broadened, then people from other sectors have to feel ownership in the process, and to become empowered. If they are to encourage participation by yet other residents, this empowerment process must circulate in an ever-widening spiral.

Empowerment is facilitated in two ways in the Dakota Model. First, the formation of the leadership teams themselves serves to heighten mutual interests and create a forum for interaction among team members. These coalitions provide an arena where people with differing perspectives and agendas are encouraged to work together toward their immediate goal, setting up a longer-term process as they learn the rationale for the viewpoints of other team members and build trust within the team. In other words, a practical mechanism is created which fosters mutual understanding and empowering behavior.

Second, empowerment is the basic philosophy and/or ideology of the model. As such, empowering behavior can be taught directly to participants through simulations and role playing. Micro-empowering processes are identified and legitimated as meaningful and purposeful modes of interaction. For example, Roberts and Thorsheim suggest several key behaviors which foster empowerment: naming and knowing others, caring about them, providing reciprocal support, and asking for help (Roberts & Thorsheim, 1987).

This process is essentially a prescriptive approach to age-old issues of social stratification. It involves the encouragement of patterned interactive behavior which is egalitarian, and which is fostered to make a reality of the term citizen

participation. It is an active, rather than a passive, approach to the notion of community; community residents learn to create strategic, mutually beneficial relationships, not only with each other but also to actively seek such relations beyond the local area.

THE DAKOTA LEADERS PROGRAM

The Dakota Model was implemented for the Dakota LEADers Program. The goals of the program were to develop an effective leadership education program geared to rural communities, implement an innovative leadership model employing teams of community leaders, implement an economic development project in each of the communities, and initiate sustainable community development activities. Nearly 200 participants were selected to form six-member teams from sixteen communities in each of the Dakotas in the fall of 1989. They were selected by a sponsoring agency in each of the communities themselves, thus ensuring local rather than external control of the entrance process, although the community selection process was competitive.

These people met for two consecutive long weekends in Bismarck and Grand Forks, North Dakota, and in Pierre, South Dakota, for initial training and goal setting. Sessions were held on empowering leadership, communications, community organizing, and conflict resolution; team-building activities were built into the instructional format. Major state office holders were available to speak with the groups, and a number of regional and state-wide resource people were brought in to explain their services and to begin the development of sets of extra-local ties by the participants.

The LEADers then returned to their communities to conduct or revise a community assessment, depending on where they were in the development spectrum. In South Dakota, they worked directly with the state sponsored Guide to Opportunities for Local Development Program (GOLD), and in North Dakota they were encouraged to work with and use the services of the Regional Development Councils. The development of these projects served two functions: the obvious one of community and/or economic development, and the more subtle function of providing a practical public activity through which the newly developed leadership and community-building skills could be applied.

Over the course of the program, three day-long cluster seminars were held for participants who were in geographic proximity to each other (ie. within a three-hour driving distance). The topics were planned to coincide with the issues which they would be facing as they worked through the stages of the project. Focus group interviews were held at the end of each of these sessions to determine the topic for the next cluster seminar, and to identify other information which the team members needed.

Strategic planning, volunteer recruitment, and leadership revisited were topics presented at these clusters, and blocks of time were devoted to exchanges

among participants about their problems as they worked through their projects. They were encouraged to help each other, and in several cases, a LEADER from one community was invited to another LEADER community to assist with a particular development issue.

These cluster seminars were supplemented by five telephone teleconferences designed to provide technical information and assistance, as determined through the focus group interviews. Topics included entrepreneurship, volunteer recruitment and retention, marketing, fundraising, and grantwriting. Through the use of speaker phones, up to one hundred people participated in any one of these noon hour "brown bag" sessions, sometimes including other people from the community who were interested in the topic, but were not team members. While these sessions were evaluated lowest of all the program components, they were extremely cost-effective, and consisted of a format which made it possible to use resource persons from virtually any location. A major effort was made to select people who lived in the two state region, or at least in the upper-Midwest, so that they would have locally relevant information, and more importantly, that these resource people might form links in the developing trans-local networks.

The participants assembled in Rapid City, South Dakota, for a *Celebration* to mark the end of the project in September, 1991. The team presentations were the core of the program, and the members were armed with slides, brochures, video-tapes, architectural drawings, sample products, news clippings, and other displays of the process and results of their community projects. It is those projects which are the culmination and tangible testimony of this practical application of the Dakota Model through the Dakota LEADers program.

The Development Projects

Once the Dakota LEADers received their initial training, they set out to assess their communities and formulate plans and strategies for their development projects. There were slight variations by state; in South Dakota, the existing parameters of the GOLD program supported any type of public or private activity and therefore encouraged a broader orientation to development. In North Dakota, the state had just experienced a major public self-examination, called *Vision 2000*, which revealed nearly universal agreement that job creation was the number one priority, particularly in the smaller communities. Therefore the North Dakota teams were encouraged by the staff to concentrate on job-producing, economically-oriented development. People in both states were acutely aware of depopulation problems, particularly as publicized in the "buffalo commons" discussions stimulated by Rutgers geographers Frank and Deborah Popper (Matthews, 1992).

Community assessments were completed or updated according to a *Guide to Economic Development* prepared by the LEADers staff. This included a fairly standard approach to development through capacity building, business retention and expansion, new business creation, and recruitment. Teams were asked to

hold a community meeting or to do some type of survey to gain maximum input to the kind of development project which they should pursue. Since the teams were responsible for the outcomes of the projects, they made the final selection from the ideas put forth by the larger community.

They then submitted a proposal which included a project description, budget, and source of community matching funds to secure funding of up to \$7,500 for their projects. Several of the projects did not meet the participatory criteria specified by the staff, and were modified. In several other cases, the teams were able to demonstrate such strong community support that the projects were funded. (In one case, the staff reluctantly funded the project, and immediately upon completion, an enthusiastic citizen wrote out a check for \$5,000 to the group for further development at the site.)

A wide variety of development projects were sponsored by the LEADers teams in their respective communities (Table 1). These projects, and the teams who initiated them are described in further detail in a monograph entitled "Grassroots: Development in the Dakotas" (Center for Rural Health, 1992). They did show some variation by state.

The projects were categorized by type (Table 2). Many of the teams did several projects. As noted, there was a greater emphasis in South Dakota on overall community development, hence the larger number of public facility projects in that state. In North Dakota, the business expansion, development, or recruitment categories accounted for nearly two thirds of the projects.

Finally, three-fourths of the teams leveraged matching funds in excess of the amount they were required to raise locally (Table 3). Collectively, these thirty-two communities were provided with about \$234,000 from the Kellogg Foundation, and they raised or allocated nearly \$754,500 toward their development projects.

Several of the communities are still in the process of developing plans (a hog farrowing co-op, for example) which will mean that their teams are ultimately responsible for very large-scale projects. While the individual dollar figures may not be an exact representation of efforts made, they suggest the overall level of project activity.

These tables reflect only one quantitative element of team success: they were able to work together to convince other people to invest more than was required simply to obtain the match, an indicator of their ability to leverage the financial resources to get something done in the community. In fact, this measure was not included in the original evaluation design, because it was not expected that leveraging activity would occur in a systematic way, or that it would occur in very many of the communities. There are other standard attitudinal measures which have been used in the program evaluation, but the financial leveraging done by the teams turned out to be one of the most dramatic and visible indicators of team effort.

Table 1. Dakota LEADers Communities and Projects

<i>Community</i>	<i>Project Description</i>
Armour, SD	Clinic development; added pre-school to existing day care.
Ashley, ND	Promotion (alumni mailing, video, brochure); business retention (auto body shop).
Beulah, ND	Tourism (info center with fish cleaning & restrooms).
Bottineau, ND	Ski slope grooming equipment (local non-profit center).
Bowdle, SD	Opened wellness center.
Cavalier, ND	Chamber of Commerce; brochure.
Chamberlain, SD	Scenic walkway construction connecting park/riverfront.
Crosby, ND	Business development (hog farrowing co-op, dried flowers); voice mail project and promotional video; fish farming project; alternative crop plots.
Garrison, ND	P-T staff for development corporation; alumni mailing; loan fund to assist three businesses.
Gettysburg, SD	Tourist information center.
Grafton, ND	RV campground development.
Gregory, SD	Building purchase (leased to two businesses); move historical building into town.
Highmore, SD	Improved recreational facilities; capacity building workshop for community.
Hill City, SD	Mini-mall developed for eight businesses.
Larimore, ND	Business development (wood crafts); business expansion (laundry/dry cleaning); brochure (2nd marketing plan).
Lead, SD	Upgraded recreational facility (ball complex).
Linton, ND	Opened day care (for expanding labor force); brochure.
Marion, SD	Purchased and remodeled main street building.
Milbank, SD	Worker training for newly relocated company.
New Rockford, ND	Business retention (greenhouse/nursery).
New Town, ND	Electronics training.
Philip, SD	Loan to golf course for care rental shelter.
Platte, SD	Remodeled buildings for municipal offices and development corporation.
Presho, SD	Tourist attraction (flag pole).
Richland County, ND	Business expansion (garment industry); restoration of historic site; remodeled commercial building.
Scotland, SD	Small business loan (auto body shop).
Scranton, ND	Entrepreneurship program; IVN system for school district; small business loan.
Trail County, ND	Study feasibility for pinto bean processing.
Turtle Mountain, ND	Loan to data entry firm.
Vermillion, SD	Business incubator.
Wessington Springs, SD	Airport master plan; brochure.
Wishek, ND	Business expansion (farm equip. mfg., auto body); business development (pottery).

Table 2. Dakota LEADers Projects by Type

<i>Community</i>	<i>Public Facility</i>	<i>Capacity Building</i>	<i>Business Expansion</i>	<i>New Business</i>	<i>Local Recruitment</i>
North Dakota					
Ashley		x	x		
Beulah	x			*	
Bottineau	x				
Cavalier		x			
Crosby		x		x	
Garrison		x	x		
Grafton	x				*
Larimore			x	x	
Linton				x	
New Rockford			x		
New Town		x			
Richland County	x	x	x		*
Scranton		x	x		
Trail County				x	*
Turtle Mountain Band			x		
Wishek			x	x	
Subtotal/Category	4	7	8	6	3
South Dakota					
Armour	x				
Bowdle	x				
Chamberlain	x				
Gettysburg	x				
Gregory	x		x		
Hill City	x		x		
Hyde County		x			
Lead	x				
Marion	x				
Milbank		x			*
Philip				x	
Platte	x				
Presho	x				
Scotland			x		
Vermillion		x			
Wessington Springs	x				
Subtotal/Category	11	3	3	1	1

*Project recently completed by the team/community without LEADers funding.

Table 3. Dakota LEADers Project Funding

<i>North Dakota Community</i>	<i>Amount</i>	<i>Matching Funds</i>	<i>South Dakota Community</i>	<i>Amount</i>	<i>Matching Funds</i>
Ashley	\$6,128.75	\$7,500.00	Armour	\$7,500.00	\$7,500.00
Beulah	7,500.00	31,171.00	Bowdle	7,500.00	37,500.00
Bottineau	7,500.00	25,500.00	Chamberlain	7,500.00	11,000.00
Cavalier	7,500.00	11,800.00	Gettysburg	7,500.00	16,750.00
Crosby	7,500.00	7,500.00	Gregory	7,500.00	44,000.00
Garrison	7,409.00	23,818.00	Highmore	7,500.00	14,900.00
Grafton	7,500.00	59,400.00	Hill City	7,500.00	106,000.00
Larimore	7,500.00	10,200.00	Lead	7,500.00	27,096.00
Linton	7,500.00	41,500.00	Marion	7,500.00	7,500.00
New Town	7,500.00	31,261.00	Milbank	7,500.00	12,620.00
New Rockford	7,500.00	37,500.00	Philip	7,500.00	9,000.00
Richland County	7,500.00	12,000.00	Platte	7,500.00	7,789.00
Scranton	3,000.00	3,000.00	Presho	7,500.00	7,500.00
Traill County	7,500.00	24,500.00	Scotland	7,500.00	35,000.00
Turtle Mountain Band	7,500.00	19,158.00	Vermillion	7,500.00	7,500.00
Wishek	7,500.00	24,506.00	Wessington Springs	7,500.00	32,500.00
Totals	\$114,037.75	\$370,314.00		\$120,000.00	\$384,155.00

This measure reinforced the fact that people are ready, willing, and able to engage in dynamic grassroots economic development, if they are given the right set of opportunities. The collaborative approach fostered by the model enabled the LEADers to access financial resources from local sources. Moreover, they developed knowledge and capacity to find new trans-local sources.

The dynamics of these processes can be illustrated through two cases. The first case, from North Dakota, provides insight into the development of the collaborative process by the members of the teams, highlighting the model. An interviewer from the Kellogg Rural America Cluster Evaluation, from Michigan State University, accompanied the LEADers staff to one of the communities in the eastern part of the state, where a focus group interview was arranged. The LEADers team told how their community was poised to act, and that the timing was right for their effort. Moreover, one noted that:

We have true representation from all of the six sectors. When we initially got together it was interesting to see the overlap of issues and problems in each sector. Because of the interaction of members of the group, we had success.

A second person said,

It has been an interesting project because we worked with so many different groups in the community. No one else in town would do this project.

Still another added,

For myself, with the networks that have been established, I wouldn't hesitate to call any one of these people (for another project). We can still be facilitators. I'd certainly be willing to get together to do something.

A second case demonstrates the strategic use of trans-local linkages to procure resources for comprehensive development. In Bowdle, South Dakota, the LEADers initiated a project to develop a community wellness center to provide healthy recreational alternatives. One of the team members donated space in his office building as a temporary site, and the LEADers funds were used for start-up costs. The community subsequently obtained designation as one of three Elder Care Communities in South Dakota. A \$20,000 grant was obtained from the National Eldercare Campaign, matched with another \$10,000 in local funds.

The team hired an Eldercare/Wellness Center coordinator for the site, which now provides services to 120 members (in a community of fewer than 600 residents). Meanwhile, building on the impetus of the original project, an application has been made for a Community Development Block Grant to assist with a \$2 million permanent home for the wellness center between the local hospital and nursing home. The new facility would provide physical therapy and other support services for the hospital, in addition to serving the original

wellness center functions. One of the LEADers responsible for this dynamic project commented, "We were motivated, we just needed to know what to do."

Overall, the people who worked with the Dakota LEADers Program and collaborated through the Dakota Model were excited about the potential applications of this type of leadership for community development. A team member summed it up:

We've been able to come back to the local development corporation and change their minds about how to look at development. Projects just weren't getting off the ground and we did this; it provided momentum. It got people excited. I think it's going to be a snowball effect, getting bigger and bigger.

IMPLICATIONS

The Dakota Model provides an ideal pattern in which communities can organize themselves for development activities to involve all sectors of the community in the process. The experience of the Dakota LEADers program demonstrated the ability of teams formed in this manner to accomplish a wide variety of projects and to leverage financial and human resources in excess of the requirements of the program itself. Building on the success of these development projects and using the knowledge gained from the applied experience of the LEADers program, people in these communities are in a position to continue comprehensive community development.

The Dakota Model has potential for wide application in leadership training for community development. The ideas presented here fit into trends in community development model building. There are a number of advantages of the use of this particular conceptual model. First, the simple target-like image of a complex system of linkages can be readily grasped by citizens. This helps them to understand the coalition building potential both within and beyond the confines of the community. By using the model and the simple exercises to identify specific people and organizations as targets for productive linkages, it creates a consciousness of the larger world as the locus of existing and potential linkages which can bring resources into, as opposed to draining resources out of the community, while helping to personalize interactions with the larger society.

Second, rather than focusing only on specific instrumental, task-oriented, problem-solving episodes, the model focuses on the relational aspects inherent in social life. Within this relational matrix, actors from within and beyond the community come together to work on various problems as they arise over time. The problem solving occurs as a part of a broader humanistic social complex.

Third, the model meets democratic criteria for inclusiveness and participation through the use of empowerment. Empowerment is fostered both explicitly and implicitly, within the team structure. It is explicitly taught, as a way for the team to involve larger numbers of citizens in the community building process. By

modeling empowering processes themselves, the LEADers were in a position to begin to transform the traditional community power structure.

Fourth, empirical support for the model has been demonstrated by the efforts of nearly 200 volunteers in small communities in two states. These six-member teams were able to mobilize community support to plan and complete a variety of community and economic development projects. Plans have been proposed to use telecommunications (an interactive video network) to substantially reduce costs of the delivery of this type of program.

Finally, the model has potential applications beyond the boundaries of community development. The image of the web of networks can be abstracted for other organizational processes. The empowerment process is applicable to virtually any social setting. The basic framework of the Dakota Model, with its complementary social processes, can be employed in a variety of settings to enable citizens to create a viable sense of community in any social organization.

The past several decades have seen an enormous growth in the use of leadership training programs to enhance community potential. For example, the National Association of Community Leadership has grown to over 400 member organizations, mostly in larger municipalities. Many states are sponsoring such programs to reach out to the smaller communities which cannot support such a program on their own, but can work with clusters of other small communities. This is an area of tremendous potential for the use of this model to upgrade the activities in leadership development programs.

Finally, if we return to the literature cited in the introduction, the Dakota Model as employed in the LEADers Program fits and expands upon the criteria of current concern in community development models. It has the dynamic potential and problem-solving components suggested by Cawley. It adds a systematic component to the participatory, collaborative network advocated by Coe. Finally it gives specific direction to the integrated practice model advanced by Jones and Silva.

This model can be employed by community development practitioners with relative ease. It can be readily adapted to any type of community, and integrated into existing leadership development efforts. Those efforts can then be focused on active, participatory projects which give local people a real sense of how to take charge of their own community destiny.

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A PRACTICAL APPROACH TO SHIFT-SHARE ANALYSIS

By Scott Loveridge

ABSTRACT

Shift-share analysis, a technique for analyzing a region's economic growth patterns, is explained, and basic uses of the technique are reviewed. Potential pitfalls and means of avoiding them are discussed. A modified technique, actual-expected-differential shift-share, is proposed as more appropriate than the classic method for sector-level analysis aimed at local economic development groups. Potential uses of the revised technique are briefly overviewed, including strategic planning, business retention and expansion programs, and industrial attraction initiatives.

INTRODUCTION

Shift-share analysis is a method for examining patterns in regional growth. The method has been well-known to regional economists for over twenty-five years, but remains underutilized by economic development practitioners despite insights it can provide for industrial attraction, business retention and expansion, and strategic planning. The principal barrier to wider adoption of the technique has probably been the difficulty of explaining shift-share results to lay audiences. This problem is compounded by the academic debate surrounding shift-share; competing models promulgated by regional economists did not facilitate selection of an appropriate analytical tool. The purpose of this article is to set forth guidelines to aid practitioners in developing and interpreting shift-share analysis. The rest of this article is laid out as follows. First, the basics of shift-share are explained. Second, potential pitfalls in shift-share and means of avoiding them are discussed. Third, methods for modifying shift-share to make it more accessible to local economic development groups are presented. A concluding section includes recommendations for incorporating shift-share into basic economic development strategies.

Classic Shift-Share Analysis

The shift-share method was formulated in the mid-1940s, but remained unrecognized even in academic circles until the 1960s, when Dunn (1960) published a formal presentation of the technique. This "classic" formulation of

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shift-share decomposes local economic growth into three effects: the national growth effect, the industry mix effect, and the competitive effect. Shift-share is most typically used to analyze change in income or employment, and the sum of these three effects is equal to the change in income or employment over the period of the analysis.

The **national growth effect**¹ is a measure of how much of local growth is attributable to larger national factors such as the business cycle, exchange and interest rates, population growth, and trade and industrial policy. The **industry mix effect**² captures that portion of local growth associated with a region's particular degree of specialization in sources of income or employment. For example, regions with a heavy concentration on service in the early 1980s might be expected to have grown more quickly in the 1980s than regions based on extractive industries. Finally, the **competitive effect**³ provides an indication of the extent to which local forces contributed to economic growth in the region. Examples of factors which might be expected to contribute to the competitive effect include local investment in education, agglomeration economies, access to transport, economic development policies, and labor availability.

The classic shift-share model is computed as follows.⁴

$$NE_{ij} = E_{ij}^t * g_{00} \tag{1}$$

$$IM_{ij} = E_{ij}^t *(g_{io} - g_{00}) \tag{2}$$

$$CE_{ij} = E_{ij}^t *(g_{ij} - g_{io}) \tag{3}$$

Where:

NE_{ij} = National Growth Effect, sector i, region j;

IM_{ij} = Industry Mix Effect, sector i, region j;

CE_{ij} = Competitive Effect, sector i, region j;

E_{ij}^t = Income or employment, sector i, region j, base year;

E_{ij}^{t+1} = Income or employment, sector i, region j, final year;

g_{00} = national growth rate (average across all sectors);

g_{io} = national growth rate, sector i; and

g_{ij} = regional growth rate, sector i.

So

$$\Delta E_{ij} = E_{ij}^{t+1} - E_{ij}^t = E_{ij}^t * g_{00} + E_{ij}^t *(g_{io} - g_{00}) + E_{ij}^t *(g_{ij} - g_{io}) \tag{4}$$

¹ The national growth effect has also been called the regional share and the proportional share.

² The industry mix effect is variously called compositional mix, structural component, proportionality shift, and the proportionality effect.

³ The competitive effect is also known as the regional shift, differential shift, regional proportion, regional effect, and competitive proportion.

⁴ For an example of how to adapt shift-share analysis to a spreadsheet, see Hoppes (1991).

Hypothetical data are used to illustrate the points made in this text. No single region is likely to show all the characteristics discussed here, and the illustrations need to be kept to a few sectors to be concise.⁵ Data and classic shift-share computations for a hypothetical county are presented in Tables 1 and 2. Once the basic computations are complete, most analysts compute the national growth, industry mix, and competitive effects for the region. This is accomplished by summing the sector-level effects for the entire region as shown in the last row of Table 2.

It is the effects as computed in the "total" row of Table 2 that have received the most attention from analysts in evaluating economic development policy and developing regional forecasts. However, as noted by Hoppes (1991), the sector-by-sector effects within a region have potential for assisting local policy makers. We return to this point below.

Table 1. Basic Data for Classic Shift-Share Analysis, Hypothetical County

<i>Sector</i>	<i>Income</i> <i>'91</i>	<i>Income</i> <i>'92</i>	<i>Local</i> <i>Sector</i> <i>Growth</i> (E_{ij})	<i>National</i> <i>Sector</i> <i>Growth</i> (E_{io})	<i>Overall</i> <i>National</i> <i>Growth</i> (E_{oo})
Agriculture	50	55	.10	-.05	.03
Mining	200	180	-.10	-.05	.03
Construction	100	200	1.00	.10	.03
Manufacturing	300	150	-.50	.10	.03
Trade	100	100	0	-.05	.03
Government	150	150	0	-.11	.03
Total	900	835	-	-	.03

Table 2. Classic Shift-Share Components, Hypothetical County

<i>Sector</i>	<i>National Growth Effect</i> (<i>NE</i>)	<i>Industry Mix Effect</i> (<i>IM</i>)	<i>Competitive Effect</i> (<i>CE</i>)
Agriculture	50*(.03)=1.5	50*(-.05-.03)=-4	50*(.10+.05)=7.5
Mining	200*(.03)=6	200*(-.05-.03)=16	200*(-.10+.05)=-10
Construction	100*(.03)=3	100*(.10-.03)=7	100*(1.0-.10)=90
Manufacturing	300*(.03)=9	300*(.10-.03)=21	300*(-.50-.10)=-180
Trade	100*(.03)=3	100*(-.05-.03)=-8	100*(0+.05)=5
Government	150*(.03)=4.5	150*(-.11-.03)=-21	150*(0+.11)=16.5
Total	27	-21	-71

⁵ For an extended example of shift-share analysis using U.S. data, see Dunn (1980), Vols. 1 and 2.

Data Sources

County Business Patterns (CBP) and the Bureau of Economic Analysis, Regional Economic Information System (REIS) both provide data used in shift-share analyses, and these data can be obtained for various levels of Standard Industrial Classification (SIC) code and governmental administrative unit (i.e., state, county) aggregation. The CBP data provide more detail than do the REIS data, but are limited in that they focus on private sector employees. The REIS data set is broader, including government and self-employed individuals. Another drawback of the CBP data is that they reflect first quarter rather than full year employment. Thus the CBP data do not take into account the seasonality experienced by many industries. The REIS data cover the full year. For a more complete discussion of these data sources, see Treyz (1993, pp. 37–42).

GUIDELINES FOR SHIFT-SHARE

While the technique outlined above may seem quite simple, some serious errors are easy to commit. The following paragraphs delineate common mistakes in shift-share analysis and summarize selected aspects of the academic debate around shift-share, with recommendations for practitioners.

Level of Aggregation

The first choice for shift-share analysts relates to the level of aggregation desired for the analysis. For example the hypothetical data in Table 1 are at the one-digit SIC code level. Data for most counties are available in more detail than the one-digit level. For our hypothetical county, the mining sector could be broken into two-digit SIC data as shown in Table 3.

Similarly, SIC code 13, Oil & Gas Extraction, can be broken down into the three-digit level of disaggregation as in Table 4. This story could go for a long time, but ultimately one runs into the problem of non-disclosed data. Privacy laws protect firms from having data about their operations disclosed in public sources when the number of firms within a geographic area is small. Thus in Table 4 we see two sectors with “n/d” (non-disclosed).

The size of the smallest administrative unit to be used in the analysis is largely a function of the analyst’s needs, but the choice of level of industrial disaggregation has been a matter of debate. Most analysts’ gut reactions when faced with

Table 3. Mining Sector at Two-Digit Level, Hypothetical County

	<i>Income '91</i>	<i>Income '92</i>
Mining	200	180
10 Metal Mining	0	0
12 Coal Mining	100	80
13 Oil & Gas Extraction	100	100
14 Non-metallic minerals, except fuels	0	0

Table 4. Oil and Gas Extraction Sector at Three-Digit Level, Hypothetical County

Sector	Income '91	Income '92
13 Oil & Gas Extraction	100	100
131 Crude Petroleum & Natural Gas	50	75
132 Natural Gas Liquids	n/d	n/d
138 Oil & Gas Field Services	n/d	n/d

the choice of level of aggregation would be to use the most disaggregated data available. Two issues arise with this approach.

The first problem with disaggregated data is non-disclosures. As the level of detail rises, the proportion of cells suppressed to protect firms' privacy also rises. If the analyst is interested only in the sector-by-sector analyses suggested by Hoppes, this may not be a big problem as long as the suppressed sectors are not deemed critical by the analyst. If, however, the analyst desires regional totals of the three shift-share effects, non-disclosures can be problematic. One way of dealing with non-disclosures is to determine the difference between reported total income or employment and the sum of sector-level income and employment, and allocate that difference to the non-disclosed cells. If we were estimating 1991 non-disclosed data from Table 4, this would mean taking the total for SIC 13 (100), subtracting the totals of the reported sectors (50), and allocating that difference (50) to each of the non-disclosed sectors in an *ad hoc* fashion (such as 25 and 25).

A slightly more sophisticated method for estimating non-disclosures involves inserting estimates from other sources into the suppressed cells, and using the RAS technique (see Miller & Blair, 1985) to adjust these rough estimates from other sources so that they are congruent with reported totals of the basic data source. In our hypothetical Table 4 example, one might perhaps have evidence from a survey, knowledge of the area, or another data set that the 1990 income in SICs 132 and 138 was 25 and 20 respectively. Comparing the total of these two values (45) with the total of the non-disclosed cells ($100 - 50 = 50$) yields an adjustment factor of $50/45 = 1.11$. Multiplying the estimates by the adjustment factor yields totals that match the reported total for SIC 13 in the county. A similar procedure can be done using the statewide totals for SICs 132 and 138 so that cell values for each county are congruent with the state totals. One can iterate between the two control totals (across SICs for the county and within a SIC for the state) until both the county and SIC adjustment factors approach 1.00. Data sets with non-disclosures estimated via some variation on the RAS method can be purchased from commercial providers.⁶

⁶ The IMPLAN group (Stillwater, Minnesota, 612-439-4421) has estimates for the REIS data set, and the Claritis Corporation (Ithaca, New York, 800-876-6732) provides County Business Patterns estimates.

A third way of handling non-disclosures is to modify the aggregation scheme. In the example from Table 4, this would mean lumping SICs 132 and 138 into one sector with income of 50 in 1991. A disadvantage of this method is that it must be used consistently across political units included in the study. If the analysis covers a large number of political units, this method becomes similar to simply choosing a higher level of aggregation.

Selection of Reference

A second aggregation issue is that of appropriate reference sectors and economies. In most cases, the appropriate reference economy is the national economy. Sihag and McDonough (1989) suggested including international growth in shift-share analyses, and this has some merit, but in practice such data is difficult to assemble and put in a standardized format. At the other extreme, analysts should avoid using a state or region as the reference economy.⁷ The following example illustrates why this is the case. Suppose a county dominates a particular sector within the state or region. The growth rate of the sector in the reference economy would therefore be nearly identical to that of the local economy, resulting in a competitive effect close to zero, despite the fact that the local economy is dominant in that sector, and therefore very competitive. Both probability and degree of this happening increase when a subnational economy is used for the reference. For example, assume our hypothetical county in Table 4 were the only county in the state with income from activities in SIC 131, Crude Petroleum and Natural Gas. The growth rate for this sector at the local level, g_{ij} is equal to $(75 - 50) / 50$, or 0.5. But growth at the state level, g_{io} would also be equal to 0.5. Then the competitive effect would be $50 * (0.5 - 0.5) = 0$.

Another argument for the using the national economy as for the reference is that U.S. markets for most goods and many services (eg. hotels, advertising, data processing, motion pictures, selected health services, private colleges and universities) are national or international in scope. Similarly, those goods and services that are subnational in scope are probably not well modeled using state data as the reference economy, as these income earning activities tend to focus on substate markets (e.g., grocery stores). If the analyst has particular interest in the retail sector, pull factors (see Deller et al., 1991) may be more useful than shift-share analysis.

The problem of the disappearing competitive effect is also theoretically possible with increasing disaggregation by sector (Houston, 1967). As noted by Fothergill and Gudgin (1979), most techniques of regional analysis produce different results at different levels of aggregation. However, shift-share is more often criticized on this account than are other methods, so it is worth exploring

⁷ One exception to this rule might be when the goal is to understand how counties or other small geopolitical units participate in state development.

the issue in detail. Say for example that disaggregation were carried out to the extent that each firm, with its unique mix of products represented an entire sector. Then we would have a situation similar to the state reference economy outlined above. The national growth rate of the sector would be equal to the local growth rate of the sector, so the two growth rates would cancel in computing CE. Fortunately, this is true only in the limit. In practice, one cannot predict *a priori* the direction or magnitude of changes in the three effects as the analysis moves from one level of classification to the next. The classification schemes used for existing secondary data sources are broad enough that local firms are unlikely to dominate national sectors. It is therefore preferable to use the most disaggregated data set available in analyzing the local economy. Broader classifications have the advantage of fewer or no non-disclosures, but they also involve comparing very dissimilar sectors with one another. It is unreasonable, for example, to expect tobacco manufacturers to grow at the same rate as rubber and plastics manufacturers, yet this is what analysts imply when they employ an eleven code classification system in shift-share analysis. Greater levels of disaggregation involve comparing local sectors with national competitors that they most closely resemble. While any classification scheme groups dissimilar firms, a more disaggregated shift-share analysis reduces this problem.

Weighting

In shift-share analysis, the E_{ij} are referred to as weights. The use of the base year as weights has created much debate in the academic community. In the 1960s and 1970s, most analysts made shift-share computations over five or ten year intervals, and the fact that employment or income patterns change, sometimes dramatically, over such time periods meant that the weights could bias results considerably.⁸ Advances in computational efficiency engendered by the micro-computer led Barff and Knight (1988) to suggest a simple means of avoiding these weighting biases: simply compute shift-share components for every year under consideration, and then sum the yearly components across time for the total effect over the desired interval. They also suggested that one could plot the regional effects over time and referred to their contribution as "dynamic" shift-share. An example of dynamic shift-share for a single (hypothetical) sector is shown in Table 6 using data presented in Table 5.

Contrast results on the "total" line of Table 6 with what one would obtain by using the traditional "static" method of 1987 weights and the cumulative growth rates reported in the last line of Table 5: $NE = 100 * (.16) = 16$; $IM = 100 * (.43 - .16) = 27$; $CE = 100 * (.84 - .43) = 41$. By failing to take into consideration the shifting industrial base of the region, the "static" method in this example

⁸ For more details on this debate, see Ashby (1970); Dunn (1960), Fothergill and Gudgin (1979); Fuchs (1959); Herzog and Olsen (1977); and Stülwell (1970).

Table 5. Annual Data for a Single Sector, Hypothetical County

<i>Year</i>	<i>Income</i>	<i>Local Sector Growth (g_{ij})</i>	<i>National Sector Growth (g_{io})</i>	<i>Overall National Growth (g_{oo})</i>
1987	100			
1988	110	.10	.07	.03
1989	121	.10	.09	.03
1990	139	.15	.07	.03
1991	160	.15	.07	.03
1992	184	.15	.07	.03
Cum.		.84	.43	.16

Table 6. Dynamic Shift-Share for a Single Sector, Hypothetical County

<i>Year</i>	<i>National Growth Effect (NE)</i>	<i>Industry Mix Effect (IM)</i>	<i>Competitive Effect (CE)</i>
1987-88	100*(.03)=3.00	100*(.07-.03)=4.00	100*(.10-.07)= 3.00
1988-89	110*(.03)=3.30	110*(.09-.03)=6.60	110*(.10-.09)= 1.10
1989-90	121*(.03)=3.63	121*(.07-.03)=4.84	121*(.15-.07)= 9.68
1990-91	139*(.03)=4.17	139*(.07-.03)=5.56	139*(.15-.07)=11.12
1991-92	160*(.03)=4.80	160*(.07-.03)=6.40	160*(.15-.07)=12.80
Total	18.9	27.4	37.7

underestimates the national growth and industry mix effects, and overestimates the competitive effect. The dynamic shift-share approach, while demanding more data and slightly more computational effort than classic shift-share, clearly has merit.

Some of the early uses of shift-share involved using the competitive effect to forecast local growth patterns. These efforts were criticized because the competitive effect was often found to lack stability.⁹ With Barff and Knight's dynamic method, a trend line of the regional competitive effect might be established, or time series analysis could be employed as a means of predicting the competitive effect in future periods based on the behavior of the competitive effect over the period of analysis.

⁹ For discussions of techniques and limitations of shift-share in regional projections, see Brown (1969); Floyd and Sirmans (1973); Hellman (1976); Herzog and Olsen (1977); James and Hughes (1973); Kuehn (1971); Kurre and Weller (1989); Miller (1974); Paraskevopoulos (1971); Williamson (1980); and Zimmerman (1975).

While Barff and Knight neatly solved the issue of appropriate weights,¹⁰ economic development practitioners may want to ask themselves whether they want to weight at all. Weighting provides a convenient way of summing sector level components into regional measures that provide insights into the performance of the local economy as a whole. If, however, the economic developer desires a sector-by-sector analysis as suggested by Hoppes, then simple differences in growth rates may be more informative than weighted growth rate differences in certain instances. Economic developers might, for example, use unweighted growth rates to identify small sectors with better than average growth rates in their service areas.

THE ACTUAL-EXPECTED-DIFFERENTIAL SHIFT-SHARE MODEL

The actual-expected-differential (AED) shift-share model goes back to shift-share's roots. The technique derived its name from the fact that it calculated a region's *share* of growth (expected growth) and the *shift* of local growth away from that share. Expected growth is how much the sector could have been expected to grow based on national trends. Actual growth is the amount by which the sector grew. Differential growth is the difference between actual and expected growth. The three components of the AED shift-share model are defined as follows.

$$\begin{aligned} AG_{ij} &= E_{ij}^{t+1} - E_{ij}^t \\ EG_{ij} &= E_{ij}^t * g_{io} \\ DG_{ij} &= E_{ij}^t * (g_{ij} - g_{io}) \end{aligned} \quad (9)$$

Where:

AG_{ij} = Actual Growth

EG_{ij} = Expected Growth

DG_{ij} = Differential Growth

E_{ij}^t = Income or employment, sector i, region j, base year

E_{ij}^{t+1} = Income or employment, sector i, region j, final year

g_{io} = National growth rate of sector i

g_{ij} = Local growth rate of sector i

So the accounting identity analogous to Equations 4 and 8 would be:

$$E_{ij}^{t+1} - E_{ij}^t = E_{ij}^t * g_{io} + E_{ij}^t * (g_{ij} - g_{io}) \quad (10)$$

¹⁰Another issue having to do with weighting in shift-share analysis has been the use of "homothetic" weights to remove the influence of local economic structure from the competitive effect proposed by Esteban-Marquillas (1972). Arcelus (1984) extended the concept of homothetic weights to the national growth and industry mix effects. The subject of homothetic weights is not presented in detail here because it has recently been shown that these weighting schemes are quite problematic (Loveridge & Selting, 1993).

Note that the “Expected Growth” in this formulation is simply the sum of the National Growth and Industry Mix effects. The “Differential Growth” effect is exactly the same as the Competitive Effect in the classic model. An example of an AED shift-share computation using data from Table 1 is presented in Table 7.

The principal advantage of the AED formulation for analysis of local economies is that local economic development policy makers are usually interested in sector by sector analysis. The AED formulation avoids the problems associated with developing economic interpretations of the national growth and industry mix effects in local sector-level analyses and policy formulation. The sector by sector computations of classical shift-share have long been characterized as a “meaningless step to the generation of summary line components” (Dunn, 1980, p. 189). Consider the national growth effect. When one considers a single local sector, this is the amount that sector would have grown if it had grown at the same rate as the *average* national sector. Clearly this is of little practical value to local policy makers. The usefulness of the sectoral industry mix effect is even murkier—this is the amount the local sector would have grown if it had the same advantage over the average national sector as did the sector nationally. Houston (1967) noted the difficulty of developing economic interpretations of the various effects in the classic model. The economic interpretation of the AED components are much more straightforward and useful in sector by sector analysis than are those of the classic method.

A fortuitous byproduct of the revised method is that a better correspondence between the names of the three components in AED shift-share analysis and their intuitive meaning facilitates exposition of the results, meaning that they will be more likely to be used in guiding local economic development actions. With AED shift-share analysis, one can reduce the information being presented to decision-makers and citizens to the actual and expected components in bar charts (sum of annual components) or graphs of growth patterns over time. Plotting just the actual and expected components provides a visual picture of the differential component, as this is the distance between the two lines (or bars) on

Table 7. AED Shift-Share Model, Hypothetical County

<i>Sector</i>	<i>Actual Growth</i>	<i>Expected Growth</i>	<i>Differential Growth</i>
Agriculture	(55–50)=5	50*(-.05)=-2.5	5+2.5=7.5
Mining	(180–200)=-20	200*(-.05)=-10	-20+10=-10
Construction	(200–100)=100	100*(.10)=10	100–10=90
Manufacturing	(150–300)=-150	300*(.10)=30	-150–30=-180
Trade	(100–100)=0	100*(-.05)=-5	0+5=5
Government	(150–150)=0	150*(-.11)=-16.5	0+16.5=16.5
Total	835–900=-65	6	-71

the plot. Reducing graphics to two lines (or two bars for sums over time) makes the analysis clearer and more quickly interpreted by harried community leaders. As an example, data from Table 6 are used to plot classical shift-share in Figure 1 and AED shift-share in Figure 2. Figure 2 makes it immediately obvious that the sector under consideration is performing much better than its national competitors; it would require much more explanation to get those unfamiliar with shift-share to the same conclusion using Figure 1.

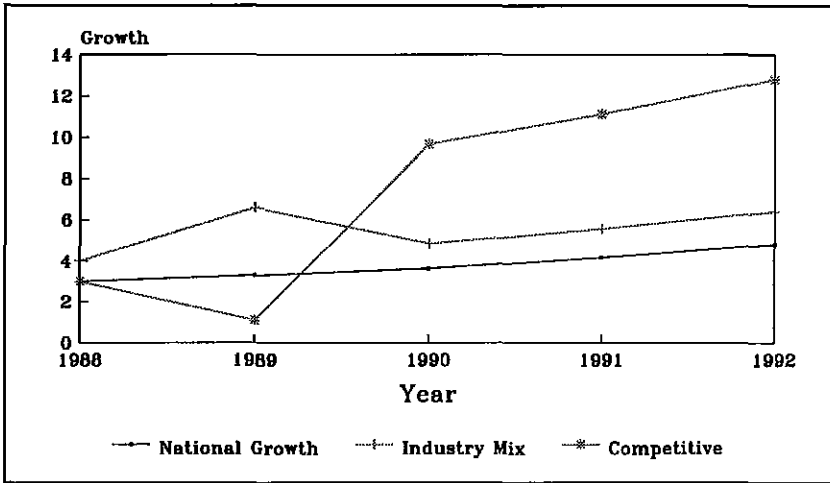


Figure 1. Dynamic shift-share: Classic, hypothetical county & sector.

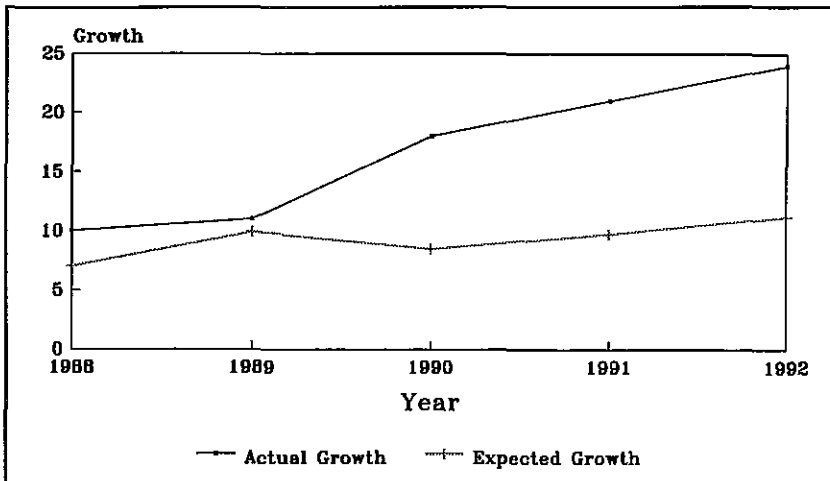


Figure 2. Dynamic shift-share: AED, hypothetical county & sector.

Uses of AED Shift-Share Analysis

It should be underscored here that AED shift-share analysis is recommended primarily for use by local economic development practitioners in analyzing the performance of individual sectors. This article should not be interpreted as suggesting that AED shift-share analysis supplant classic shift-share in cases where analysts are seeking to compare one region with another by means of shift-share components summed for the various regions included in the analysis.

AED shift-share analysis could be used by local economic development professionals in strategic planning, business retention and expansion efforts, and industrial targeting. Each of these is discussed in turn.

Strategic Planning. The increasing complexity of social, environmental, and economic interactions means that community groups need to base economic development efforts on “what will be” rather than current situations. Strategic planning is a process to involve people in such efforts. Bryson lists eight steps as critical for a successful strategic planning effort by public and non-profit organizations. Two of these, steps four and five, are: “Assess the external environment: opportunities and threats,” and “Assess the internal environment: strengths and weaknesses” (1988, p. 48). The utility of classic shift-share in the environmental scanning steps of strategic planning is well documented (Luke et al., 1989, p. 41). The AED formulation is perhaps better suited to this purpose because the expected and differential components correspond more nearly to the way the Bryson proposes to carry out environmental scanning than does the classic model. Expected growth helps economic development groups assess the external environment. If expected growth of a sector important to the local economy has been negative or stagnant in real terms, then that poses a threat to economic development. For example, in Table 7, mining is an important sector whose national growth is negative. This is a threat to the local economy. Conversely, high expected growth represents an external opportunity (e.g., manufacturing and construction in Table 7). Differential growth provides an analogous assessment of the internal (local) environment.

Business Retention and Expansion. Business Retention and Expansion programs were popularized in the eighties. Economic developers became aware of research results showing that growth of existing businesses is an important source of new employment,¹¹ and better global communications and transportation systems put increased competitive pressure on America’s traditional manufacturing firms. Two distinct types of business retention and expansion (BRE) programs are in use by economic development practitioners.¹² The first

¹¹Perhaps the most well-known of these is Birch (1987). Birch has since qualified research results popularized in the early eighties, and the view that the importance of different size categories of firms varies by time and place is gaining more recognition. See White and Osterman (1991).

¹²For more complete information on business retention and expansion programs, see Morse (1990); Loveridge and Smith (1992a); Loveridge, Smith, and Morse (1991); Loveridge and Smith (1992b); and Smith, Morse, and Lobao (1992).

type involves visiting firms on a regular basis to uncover any problems they may be having, and working to help them access resources to overcome those problems. The second type of BRE program also includes individual visits to firms and problem-solving for specific businesses, but collects the information in a more systematic fashion (via questionnaires) and then uses the data to develop a community-wide assessment of the local business climate. This community-wide assessment is then used to formulate an action plan to improve overall business conditions in the community.

The simplified shift-share technique described above has a place in both types of BRE program. BRE programs are limited in that it isn't usually feasible to visit every business in the community. Thus the organizers must make decisions as to which establishments to visit. By comparing actual and expected growth patterns, people involved in organizing a BRE program can better target their efforts. Focusing attention on those sectors diverging substantially from expected patterns is likely to have the biggest payoff in terms of the community's ability to uncover and alleviate constraints faced by local businesses. For example, given the information in Table 7, the local BRE program coordinator might focus on manufacturing rather than construction, because local manufacturing firms grew less than their national counterparts over the period of analysis, indicating that there may be more trouble in that sector than in other local sectors.

Industrial Recruitment. AED shift-share analysis might be used to identify prospects for industrial recruitment by targeting sectors whose production processes are complementary to those local sectors displaying aggressive growth. For example, one might decide to study the potential profitability of new local suppliers of construction materials and equipment based on the information in Table 7.

CONCLUSIONS

Shift-share analysis has a future in helping local economic development groups make appropriate decisions on where to put their limited resources to the best use. The guidelines for shift-share analysis discussed in this article will help such groups better interpret and use shift-share. Shift-share should not be the only tool economic developers use in assessing the local economy. Shift-share does not explain the underlying factors giving rise to positive or negative growth in the region (Richardson, 1978). What it can do is highlight relative strengths and weaknesses in the local economy. Shift-share should be used in conjunction with other analytical tools and, most importantly, *dialogue* with business owners, government officials, and other citizens in determining the focus of economic development efforts.

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APPROACHES OF EXTENSION SPECIALISTS TO TEACHING COMMUNITY AND ECONOMIC DEVELOPMENT

By Julie Leones

ABSTRACT

A survey of community resource and economic development extension specialists was conducted to reveal where specialists get information and ideas and how they disseminate this information through educational programs and various media. Results indicated that the *Journal of the Community Development Society* was the most commonly cited source of information and ideas. Almost 40 percent of all specialists published or contributed to newsletters. The most common topics for educational programs included business assistance and entrepreneurship, fiscal policy, budgeting and government services, strategic planning and leadership development. Recommendations included establishing more student intern programs, making extension community development educational materials more available through electronic media and recognition of the *Community Development Society* as a principal outlet for professional communication between specialists.

INTRODUCTION

High quality information for decision making and training and education for community leaders, public officials, and economic development professionals are important for most communities, especially rural communities (Miller, 1993). Community Resource and Economic Development (CRED) extension specialists represent an important part of the human capital that has been invested in advancing and disseminating knowledge of community and economic development and in developing new paradigms of community development. Because of the nature of the Cooperative Extension system, however, with its strong emphasis on working with local communities and developing locally appropriate educational material, there has been little comprehensive information available in the past on the educational programs of CRED extension specialists.

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CRED specialists are part of the United States Department of Agriculture's Cooperative Extension System. Cooperative Extension is a unique local, state and federal partnership to assist communities develop, particularly in rural areas. The overall mission of Cooperative Extension is to "help people improve their lives through an educational process that uses scientific knowledge focused on issues and needs" (USDA Cooperative Extension, 1994). Cooperative Extension personnel include both county based agents and university campus or center based specialists in the areas of agriculture and natural resources, youth development (particularly 4-H), family and consumer resources, and in community resources and economic development.

Results presented here are based on a national survey of CRED campus or center based extension specialists who deal with economic issues. Extension agents in this area were not included. The survey was conducted during the summer and fall of 1993. The purpose of the survey was to identify the types of educational programs offered by topics, media of instruction, and target audiences. A second important set of objectives was to learn more about sources of information that specialists rely on, their educational philosophy, the interactions they see between extension, teaching and research activities, and more detail about their approach to educational programming. One hypothesis of the study was that distinct differences would exist between specialists from different regions and at different stages in their extension careers.

SURVEY OF EXTENSION SPECIALISTS

Although there were a significant number of CRED extension specialists who addressed related social science issues, such as demographic and sociological issues, an estimated 40 percent of the CRED specialists worked on economic issues. The exact number of CRED specialists was not available because some specialists worked in other programs as well or had only a small amount of their appointment in extension. However, at the time of the survey, approximately 172 people could be identified as allocating some of their time to being a CRED specialist. The survey was limited to specialists who worked in economic development because of the difficulty of compiling a complete list of all CRED specialists. The existence of two databases on economists allowed for cross checking and a more complete list of all specialists. A related study of courses offered in rural or regional development through agricultural and resource economics departments in universities throughout the United States was conducted in 1992 (Weber & Hughes, 1993).

The survey was sent to 80 people identified as CRED state extension specialists who worked on economic issues. The population was identified using a database developed by the National Extension Service and from the American Agricultural Economics Association's Community Economics Network data-

base. Sixty-four specialists returned questionnaires, creating a response rate of 80 percent. The survey was conducted by mail. Two mailings were used.

Extension Specialist Characteristics

Most of the economics specialists in CREB held doctoral degrees in agricultural and resource economics. A few had master's degrees in economics and a few had degrees in other related social science fields. While the group averaged 12 years experience as extension specialists, 30 percent of these had less than five years of experience. Thirty six percent of the specialists had more than 16 years of experience. About 60 percent of the 64 specialists worked full time in community and economic development, while the remaining 40 percent split their time between CREB and other programs.

In addition to their extension responsibilities, some specialists had specific research and teaching responsibilities. In some states, the entire faculty within the College of Agriculture devoted a percentage of their time to extension. In other states, extension faculty had 100 percent extension appointments, but had varying levels of responsibility for doing applied research as part of that extension appointment. In yet other states, faculty with no official extension appointment had active educational outreach programs. On average, the CREB specialists had 70 percent extension appointments.

While joint research, extension and teaching responsibilities can create conflicts in the use of faculty time, it also has beneficial effects. Over one third of CREB extension specialists taught on campus. Half of those with teaching responsibilities indicated that their extension programs provided real life examples to use in illustrating concepts and theories they were teaching in the classroom and that classroom teaching kept them current in economic theory and helped them to incorporate new ideas and concepts into their extension programs. Another large group indicated that they used extension examples in the classroom, but saw less benefit flowing the other direction.¹

Some faculty with extension and teaching responsibilities combined these activities by assigning groups of advanced students to work on real life problems faced by local communities (Johnson, 1993). The end result has been a valuable internship experience for students and much appreciated technical assistance for smaller communities. In Arizona, a CREB specialist in architecture had advanced architecture students working with communities to help plan specific infrastructure projects as part of their studio experience (Poster, 1992). In both cases, communities were asked to provide some financial support, but much less

¹ As one indication of what is taught in rural development courses offered through agricultural economics departments, Weber and Hughes (1993) determined that the two most commonly used texts were *Community Economics* (Shaffer, 1989) and *Input/Output Analysis: Foundations and Extension* (Miller & Blair, 1985).

than would be required had they hired a consultant. Opportunities for such programs may exist or might be developed in other states.

Seventy two percent of the CRED specialists had some research responsibilities. Among specialists with research appointments, one fourth indicated that their research program was an important basis of their extension efforts and that their extension efforts provided an important source of ideas for their research. Another one fourth reported that the interaction was in one direction, with research programs serving as an important basis of their extension efforts.

The majority of CRED extension specialists viewed their role as an educator in community and rural development as providing perspective on issues and events and disseminating research based knowledge. About two thirds of the specialists also indicated that they taught specific skills, motivated people to learn and encouraged people to take action or change their behavior. The only role that less than a quarter of the specialists felt was appropriate or descriptive of what they do was to help directly change laws and organizations.

Specialist Use of Periodical Publications

Almost 80 percent of all extension specialists indicated that periodic publications were useful sources of ideas and information for their extension programs. Table 1 provides a list of the most commonly cited publications found useful to extension specialists. Over 66 publications were listed. Topping that list by a wide margin is the *Journal of the Community Development Society*. The other top ranking publications were *Rural Development Perspectives*, various Rural Development Center publications, the University of Wisconsin's *Community Economics* newsletter and the *Economic Development Review*. None of the academic journals of the American or regional agricultural economics associations were included among the top ranked periodicals. Within agricultural and resource economics, professionals working on community and domestic economic development issues were a minority. Typically these journals have published few articles relating to community and rural development whereas journals such as this one, regional science journals and the other frequently mentioned journals on the list tended to focus primarily on development issues. Other educators and practitioners in community and rural development may also find the periodicals in Table 1 useful sources of ideas and information.²

CRED extension specialists frequently publish their own state newsletters. Almost 40 percent of the specialists indicated that they published or contributed to a state newsletter that focused on development issues. Table 2 provides a list of newsletters indicated by the respondents. Respondents from the southern states and those in mid-career with 7 to 16 years of experience were slightly

² A list of the addresses and phone numbers of the publications listed in Table 1 is available from the author on request.

Table 1. Periodicals Frequently Used by CRED Extension Specialists

<i>Publication</i>	<i>Times Listed</i>
<i>Journal of the Community Development Society</i>	13
<i>Rural Development Perspectives</i> (USDA ERS)	9
Rural Development Center Publications	9
<i>Community Economics</i> (U of Wisconsin)	7
<i>Economic Development Review</i>	6
<i>Capsules</i> (Southern Rural Development Center)	4
<i>Economic Development Quarterly</i>	4
<i>Small Town</i>	4
<i>Governing</i>	3
<i>Government Finance Review</i>	3
<i>Growth and Change</i>	3
Other states' extension materials	3
<i>Perspectives</i> (Oregon State University)	3
<i>Rural Conditions and Trends</i> (USDA ERS)	3
<i>Western Wire</i> (Western Rural Development Center)	3
Advisory Commission on Intergovernmental Relations reports	2
<i>Business Week</i>	2
<i>Inc.</i>	2
North Central Rural Development Center publications	2
Other extension newsletters	2
<i>Proceedings of the National Public Policy Education Conference</i>	2
Resources for the Future publications	2
<i>The Wall Street Journal</i>	2

Table 2. Extension Newsletters Respondents Contribute to or Publish

<i>Title</i>	<i>Institution</i>	<i>Issues Per Year</i>
<i>ACTion</i>	Auburn	4
<i>Blueprints for Economic Development</i>	Oklahoma State	4
<i>Community Development Comments</i>	U. of Arkansas	4
<i>Center for Economic and Community Development</i>	Pennsylvania State	3
<i>Community Development Issues</i>	U. of Arizona	4
<i>Community Economics</i>	U. of Wisconsin	12
<i>Creating Economic Opportunities</i>	Kansas State	4
<i>Creating Quality</i>	U. of Missouri	12
<i>Economic Development in Action</i>	Texas A&M	6
<i>ILINA' CHOK (Life from the Roots)</i>	U. of Guam	4
<i>Issues in Community and Economic Development</i>	Clemson	2-4
<i>Perspectives</i>	Oregon State	2-3
<i>Resource Development</i>	U. of Tennessee	4
<i>Rural Economic Development Brief</i>	New Mexico State	NA
<i>Southern Ohio Economic and Business Review</i>	Pike Town Research and Extension Center	4
<i>The Maine Business Research Report</i>	U. of Maine	2
<i>The State of Rural Indiana</i>	Purdue University	4

more likely to publish newsletters (over 50 percent in both categories published newsletters). Community and economic development educators and practitioners not already receiving one of these state newsletters may find them useful.

In addition to newsletters, CRED extension specialists regularly produced a wide array of written educational materials, videotapes, and computer programs. More than half of the respondents indicated that they used their own written or other educational materials rather than those developed by others at least 75 percent of the time. Almost a quarter indicated that they used their own materials almost all of the time. Again, this reflects the differences in local need for community and rural development educational materials. It also reflects the fact that specialists often engaged in applied research that was used as a basis for their extension programs and was often conducted in a specific community. In other cases, specialists were involved in a process that included the input of local residents. This input needs to be incorporated in resulting written reports and educational materials.

Extension Educational Program Characteristics

CRED extension specialists were engaged in providing education on a broad array of topics. Almost forty topics were mentioned as topics of current extension programs. These were consolidated into a list of 14 topic areas and are presented in Table 3. The five most commonly mentioned were: small business assistance and entrepreneurship; fiscal policy, budgeting and government services; strategic planning; leadership development; and economic and fiscal impact assessment. A large number of programs were being conducted in areas that overlap with programs in other extension areas such as agriculture and natural resources. Several commonly cited examples were land use and federal land issues and solid waste management. Notably absent from this list were programs in industrial recruitment.

Programs varied in whether they were developed and offered to communities statewide or whether they were developed with a specific community in mind. Another way to classify programs is between those that dealt with specific issues (solid waste management, land use, federal land management, international trade, military conversion); those that enhanced the development of specific sectors of the economy (retail trade, tourism, rural manufacturing); those that applied specific economic tools (fiscal and economic impact assessment, economic trend analysis, economic outlook); and those that helped build local capacity and leadership (leadership development, strategic planning, goal setting, public policy education, entrepreneurship and small business training, business retention and expansion). Only a small percentage of programs dealt with state level issues; most focused on smaller regions within a state.

Yet another way to categorize programs is between programs largely based on taking participants through a process and others more focused on providing information on an issue. Usually there are elements of both process-based and

Table 3. Major Topics in Community and Rural Development Extension Programs

<i>Topic</i>	<i>All Programs</i>	<i>Special Program</i>
Business assistance and entrepreneurship	18	5
Fiscal policy, budgeting and government services	17	6
Strategic planning, development planning	17	7
Leadership development	15	5
Economic and fiscal impact assessment	12	4
Public policy education	11	2
Tourism development	10	2
General community development assistance	10	3
Retail trade development	9	3
Business retention and expansion	9	2
Economic outlook, regional and state policy, ED tools and techniques	6	3
Miscellaneous:		
Community development corporations, employment generation alternatives, cooperatives, using personal computers in local government	4	3
Programs overlapping with other extension area programs:		
Land use/federal land issues (6), solid waste management (5), water quality (2), trade, international development, youth and development, school to work linkages, resource issues, sustainable development (1 each)	18	8

information-based education in every program, but one element often dominates. In a crude break out of process-based programs, strategic planning, leadership development, public policy education, tourism development, general community development assistance and business retention and expansion were included. Several of these included intensive information gathering and analysis as part of the process, however, they were focused on taking participants through the process rather than delivering research based information. Under both the most common programs and special programs categories, about half were process-driven programs and half information-driven programs.³

A future study might probe deeper into the amount of time and effort that extension specialists spend on what they consider to be process- versus information-driven educational activities. As will be discussed later in the paper, the mix of process- and information-driven activity undertaken by specialists appeared to vary at different points in their career.

³ While some specialists were both interested in and skilled at process- and information-based programs, most specialists tended to prefer one or the other. In program implementation, pairing process oriented and information oriented specialists (or agents) is a possible strategy.

The media used to deliver educational programs were as diverse as the programs themselves. Generally, several different media were used. Most programs included interacting with small groups through workshops, seminars, meetings or field trips. The second most commonly cited medium was written material, not including written mass media. Third on the list were methods that involved shorter verbal presentations such as lectures, speeches and testimony. Finally, some specialists were tapping mass media and electronic media, primarily newspapers, magazines and videos, although a few had also used radio, television, satellite down links, and computer programs. A much less frequently mentioned mode of delivery was one-on-one interaction through phone calls, letters, interviews and consultations.

Mass media are promising for future delivery of at least some educational materials, especially through local publications, such as business periodicals interested in community and economic development issues. Without greater reliance on mass media, the educational impacts of CRED extension programs may remain limited to small audiences. In addition to mass media, use of the existing "information highway," the Internet, offers opportunities for making educational materials more readily and widely accessible. The national extension office already has a server that might be utilized for making educational materials available nationwide. Extension specialists and agents also may have an important role in helping community leaders and citizens learn to effectively access and use the Internet.

The targeted audiences for many programs included public officials, the general public, community and economic development leaders and business owners. Two thirds of the extension programs targeted at least two distinct audiences. By nature, some programs may need to be limited to small, if influential, audiences. Mass media may not be effective avenues for working with audiences of key decision makers. However, the general public was the most frequently mentioned target audience aside from public officials. Mass media are an effective channel for reaching the general public.

Characteristics of Effective Programs

Specialists were asked to identify one special program that was particularly effective and satisfying to them professionally. Strategic planning and fiscal policy, budgeting and government services were the most frequently mentioned topics (Table 3). Programs that overlapped with other extension program areas were also frequently listed. Most of these programs were started through a request from community leaders, government agencies or other groups. The next most common way was through needs assessments and concerns expressed by groups or individuals.

There has been some debate in cooperative extension concerning how much time should be spent responding to immediate needs through requests by others (being reactive) and how much in developing programs based on research,

observations and needs assessment (being proactive). While there are no clear guidelines on balancing proactive and reactive programming, more programs that specialists felt were effective were the result of responding to requests than through specialist's initiative (Decker & Anderson, 1989). In an adult learning environment, people must be interested in learning, or as extension faculty say, you must provide information at a "teachable moment." On the other hand, research and study by extension specialists may make them aware of events and changes in policy which will soon affect communities before those events become a concern of community leaders. An underlying issue in the debate over balancing being reactive and proactive is that an individual who primarily provides programming on a reactive basis, may be seen as being helpful, but not as providing leadership. Cooperative Extension administrators in some states are very concerned about the image of extension faculty in the state as helpers but not leaders. Although it is not possible from this survey to identify how much time specialists spent dealing with immediate issues and problems and how much of their work was focused on long term, future oriented issues, this is another underlying difference between reactive versus proactive programming.

Other extension faculty were frequently involved in these educational programs along with government personnel and other university or research faculty. However, perhaps a sixth of these programs were conducted solely by the extension specialist. Generally, county extension agents were involved to a moderate to high degree in the program, indicating a fairly high level of cooperation between extension specialists and agents in most states.

The extension specialists generally received satisfaction from the response and participation of people involved in the program, from providing improved information for decision making, from observing the impacts of the program such as jobs created, expansion of the tax base, creation of new organizations, and from the learning process and mutual learning that occurred.

About one third of the respondents evaluated their program fully or in part by using a written survey soon after the program. Another third tracked participants' accomplishments or evaluated the program based on participants' mastery of specific skills. About 28 percent relied on informal feedback to evaluate their program, including letters and comments from participants.

Evaluations seemed to be occurring at two levels. On one level, specialists wished to evaluate how effectively they have delivered information to their audience, or how effective the educational process had been for participants. On the other level, specialists were attempting to evaluate the value of their programs in furthering community development. Both types of evaluation are important and are interrelated. From the survey responses, it seems clear that many extension specialists would benefit from giving more thought to how they evaluate their educational programs and to using more formal evaluation methods of both the quality of presentations and action taken by participants after attending.

Some of the most revealing parts of the survey were the comments that many of the specialists made when asked about their thoughts on effective extension education in rural and community development. Many viewpoints were represented. Some argued for educational efforts tailored to specific communities; others argued for educational programs that can be offered to large numbers of communities. Some emphasized the importance of research based knowledge in programming, others emphasized the need for strong community participation and input in programming. These differences in viewpoint are important in the discussion of how to reach broader audiences more effectively. Realistically, most extension specialists found themselves involved in a wide range of different educational activities, some prepackaged and some geared to a particular community; some largely based on research, others that involved high levels of community input and yet others that combined both.

Differences Based on Experience and Region

With a small population such as this one, it is difficult to identify significant patterns among subgroups. However, the approach of extension specialists did seem to differ based on their years of experience and the region in which they worked.⁴

Some of the most striking differences between specialists based on level of experience are presented in Table 4. The more experienced the specialist, the less likely they were to be starting a program based on an agent's request and the more likely they were to be responding to a request from other groups. Mid-career and less experienced specialists tended to target community and economic development leaders and businesses as the audience for their programs more than did more experienced specialists. More experienced and mid-career specialists were more likely to use mass or electronic media than less experienced specialists. Finally, major differences existed between the mix of process- and information-based programming by specialists depending on level of experience. About three quarters of the programs listed by less experienced specialists were information-driven, while two thirds of the programs listed by mid-career specialists were process-driven programs. The most experienced specialists listed half of each.

Regional differences in programming also existed and are presented in Table 5. Eastern specialists were more likely to start programs based on their own research and to target public officials as an audience. Eastern specialists used

⁴ Specialists were divided into three experience groups: less than 7 years of experience or "less experienced;" 7 to 16 years of experience or "mid-career;" and over 17 years of experience or "most experienced." Specialists were likewise divided into three regions: East, South and West. East includes the Census regions of New England, Middle Atlantic, East North Central, and West North Central. South includes the Census regions of East South Central, South Atlantic and West South Central. West includes the Census regions of Pacific and Mountain.

Table 4. Selected Differences in Responses by Level of Experience in Percent of Respondents

<i>Characteristic</i>	<i>Percent</i>		
	<i>Less Experienced N=18</i>	<i>Mid-career N=19</i>	<i>Most Experienced N=16</i>
Write newsletter	38	53	28
Identified useful periodicals	67	89	83
Started program on request of agent	78	53	31
Started program on request of others	28	95	94
Targeted community or development leaders	44	42	6
Process driven program	24	65	50
Information driven program	76	35	50
Involved other extension faculty	50	32	31
Involved state agency people	17	11	25
Agents very involved in program	44	21	25
Satisfaction due to participation	28	5	44
Satisfaction due to learning process	11	32	6

Table 5. Selected Differences in Response by Region by Percent of Respondents

<i>Characteristic</i>	<i>Percent</i>		
	<i>East N=22</i>	<i>South N=21</i>	<i>West N=11</i>
Write a newsletter	36	45	33
Motivating to change behavior is a role	80	70	58
Motivating to learn is a role	80	80	58
Started program on request from others	32	48	36
Started program based on needs assessment	18	19	45
Started program based on own research	32	10	18
Targeted public officials	55	26	36
Used workshops and seminars	77	39	73
Used mass media or electronic media	32	11	64
Involved other extension faculty	32	32	45
Involved other university faculty	14	20	27
Involved state agency people	9	16	27
Involved local community people	18	4	0
Agent not involved in program	14	0	27
Agent very involved in program	27	38	18
Satisfaction from improved information	27	15	9
Satisfaction from impacts	14	12	27
Evaluated through informal means	14	30	45
Evaluated formally after presentation	45	30	9

workshops and seminars extensively. They were more likely to involve local community people and less likely to involve state agency or university faculty in program planning and implementation than were specialists from the other regions. They also tended to derive more satisfaction from providing improved information for decision making and were more likely to evaluate programs formally than specialists in other regions.

Southern specialists were the most likely to write a newsletter and to start programs based on requests from others. They were the least likely to use mass or electronic media and were the most likely to have county agents very involved in implementing programs as compared to specialists from the other regions.

Western specialists were more likely to start programs based on needs assessment. Like Eastern specialists, they relied heavily on workshops and seminars. They were the most likely to use mass or electronic media and most likely to involve other extension and university faculty and state agency personnel in programs. They were more likely not to have county agent involvement in their programs and relied much more on informal rather than formal evaluations of programs. A relatively higher percentage of Western specialists derived satisfaction from their programs based on community impacts.

CONCLUSIONS

Extension specialists represent an important resource for communities interested in using research based educational programs to improve development prospects in their area. This paper provides a snapshot of the types of educational programs offered and the approaches to teaching used by community resource and economic development extension specialists in the United States. It is not a comprehensive assessment of all Cooperative Extension resources and programs that support community development. A large number of CRED extension specialists do not have a background in economics. Programs exist for youth, for families and for natural resource industries that also support community development such as youth leadership and entrepreneurship, family and community leadership home-based business, agricultural and agribusiness management, and forestry and wood processing.

However, this study has revealed much about extension education programs in community and rural development by identifying important sources of ideas and information used, existing extension newsletters, and characteristics of existing educational programs. Opportunities exist for tapping the synergy between teaching and extension, particularly in establishing student intern programs and class projects based on real community problems, to benefit both students and communities. The Community Development Society, the four rural development centers and the USDA Economic Research Service provide important forums for exchanging ideas and information for many CRED extension specialists through their periodicals.

An area for future work would be in improving the accessibility of existing extension materials both for extension specialists and agents and for the people they serve. Work is needed both to catalog and develop bibliographic databases and to make the existing materials available through electronic transfer. Such an effort might be conducted through the national office, perhaps with the Rural Information Center, which already prepares related bibliographies, or through specialized centers or the rural development centers.

Given budget and personnel constraints faced in most states, there is also a need to constantly seek new ways of providing educational outreach so that extension is serving more people with the same or fewer resources. One stumbling block to this may be the intensive nature of the community development process. Extension specialists may find themselves in a position of training the trainers more often than working directly with communities and of working more on state and regional development issues and less on county and small community issues in the future, particularly since many more organizations and agencies are interested in providing community development assistance than even ten years ago.

Finally, CRED specialists need one widely accepted channel for the exchange of ideas and information through journal articles and conference presentations. Given the popularity of the Community Development Society's journal among extension specialists, the Society would be an excellent choice for such a professional meeting ground.

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BOOK REVIEWS

Andreas, Carol. *Meatpackers and Beef Barons: Company Town in a Global Economy*. (Niwot, Colorado: University of Colorado Press, 1994, 225 pp.), cloth, \$29.95.

Over the last 30 years or so, the meat industry in the United States has seen major structural change. Shipping of whole beef carcasses has given way to factory-packaged boxed beef. Smaller meat producers were forced out of business, and a few large companies now dominate the industry.

Meatpackers and Beef Barons is a case study of the meatpacking industry in Greeley, Colorado. It chronicles the development of Montfort, Inc., from family feedlot to local meatpacker to ConAgra subsidiary, and it discusses the effects of structural change in the meat industry on workers and on the economic, political, and social fabric of the community. The author argues that the concentration of power among a few large corporations along with collusion between business and government has hurt society; lesser-quality meat and abuse of human and natural resources are some of the consequences. The solution is for those who live in meatpacking communities to lead the way in repudiating a social system that encourages "naked pursuit of profit," replacing it with a "grassroots democracy"—common control over the processes of production.

Source material comes largely from interviews with current and former meatpacking workers in Greeley supplemented by library research. Indeed, the strength of this work lies in its documenting the experiences of meatpacking workers. Ms. Andreas has done an excellent job of giving voice to a segment of American society whose story is seldom heard because of economic, legal, language, and cultural barriers. Whether or not one agrees with the author's outlook for change (and she states up front that she makes no claim to neutrality), *Meatpackers and Beef Barons* makes an important contribution by pointing out some of the negative effects of economic growth on workers and communities.

The text is extensively endnoted. A couple of changes would make the endnotes more useful. First, readers who like to refer to the endnotes as they go along will find it unnecessarily tedious: The numbering system starts over with each chapter, and the page headings lack cues to help the reader find the endnotes for a particular chapter without much leafing back and forth. Future editions would benefit by either renumbering the endnotes continuously from beginning to end or by adding chapter numbers to the top of each page of text and endnotes. Second, some reference citations could be more specific. For example, on page 27 Ms. Andreas states:

"In the past decade, Weld County has consistently had lower wages than the rest of the state (and has had among the lowest wage rate in the nation). Food manufacturing employees in the county make nearly 22 percent less than the state average. They have less purchasing power today than they did two decades ago. At the same time,

the county has consistently produced more agricultural wealth than any other county in the state . . .”

The reference note for these statements simply says, “Sources for these statistics are the Colorado Department of Labor and Employment and the U.S. Department of Commerce, Bureau of the Census.”

Meatpackers and Beef Barons will appeal not only to people interested in the meatpacking industry but also to people interested in labor-management relations, corporate-government relations, and the effects single, large employers have on communities.

E. DAVID FIFER

University of Nebraska at Omaha

Dodson, Dorian. *How to Recruit Great Board Members: A Guide for NonProfit Agencies*. (Santa Fe, New Mexico: Adolfo Street Publications, 1993, 130 pp.), \$14.95, paper.

Nonprofit organizations are becoming more and more popular. Thus, the establishment of the boards of directors which are required by law to govern them is also on the rise. This book is written for those who work within these organizations (and others like them) to share the tips of the trade so to speak.

Good board members are essential to a successful and productive organization. And once these persons are identified, more than one group commonly approaches them to also serve. So how do you locate these great people? How do you keep them once you get them? When do you know new people are needed on your board? All these questions are answered within the 130 page text.

This publication is divided into eight sections to address each of the following:

- Defining your nonprofit’s mission
- Determining your strengths and weaknesses in recruitment
- Identifying who you are looking for (skills, experiences, knowledge-base)
- Locating potential members
- Motivating people to board commitment
- Working with members already in place
- Keeping good board members
- Involving good people in other ways

The publication ends with a section providing examples of recruitment documents and explanations to begin the process, including letter of introduction, recruitment brochures/flyer, news release and public service announcement.

In summary, the back cover of the text shares these thoughts: “If you are responsible for board recruitment for your nonprofit, you already know how

hard it is to get qualified and dedicated people to sit on your board. This book will show you how to do it . . . by providing detailed information and proven techniques that will help you locate and persuade top notch candidates to sit on your board of directors.”

The most rewarding benefit of reading this book is the correlations that can be made when working with any membership recruitment plan. Early in the text, the concept of community is brought out. The author compares similarities and differences of community size in the locating, selecting, motivating and keeping of board members. The fact that most tips can apply to any community is of great interest to me as I work primarily with rural communities.

The author shares tips he, as well as others, has learned about working with boards and member recruitment. The actual life situations shared to illustrate the importance of handling the process appropriately and the writing style makes it a fast read.

I recommend this publication for the tips alone, however the sample recruitment documents and “user-friendly” index create a good reference text for anyone who works within groups or organizations.

GAYLA L. RANDEL
Kansas State University

Gastil, John. *Democracy in Small Groups*. (Philadelphia: New Society Publishers, 1993, 224 pp.), paper, \$14.95.

This book focuses on participation, decision making, and communication within the context of small group organizations. Within its short format, the author details when democratic processes are appropriate using a decision tree diagram. Next, he defines the essential dimensions of the process. Also, he provides one extensive case study. And, he surveys different institutional rules to govern democratic organizations.

In chapter two, Gastil outlines his dimensions of small group democracy. They are as follows (page 16, Table 2.1)

1. Group power
 - A. Group sovereignty
 - B. Equality distribution of ultimate authority
2. Inclusiveness
3. Commitment to the democratic process
4. Relationships
 - A. Acknowledgment of individuality
 - B. Affirmation of competence
 - C. Recognition of mutuality
 - D. Congeniality

5. Deliberation

A. Speaking rights and responsibilities

1. Agenda settings
2. Reformulation
3. Information
4. Articulation
5. Persuasion
6. Voting
7. Dissent

B. Listening rights and responsibilities

1. Comprehension
2. Consideration

Chapter two elaborates on each of these points.

The book is divided into sections. Section I is focused on “Understanding Small Group Democracy” and section II is focused on “Practicing Small Group Democracy.” Finally, an appendix includes small group exercises.

Gastil concludes that democracy is an ideal model to which many groups may aspire but it is a very difficult goal to reach. In fact, there are some situations that require undemocratic procedures.

Community developers must, not should, understand the democratic process of group decision making. For this reason I recommend this book to all who need to revisit this topic. I am pleased with the new insights gained. Much of the core information is found on pages one to thirty-three. The book has only 150 pages of text and tables.

In conclusion, a startling point is made on page 111 of the book. American youth are provided few opportunities to be members of democratic groups. The family, the church, the school and even Scout programs are run by adults using the command and control approach to decision making. Only 4-H is a possible place. If we as a nation do not practice democracy in these institutions with the youth as full members, we are not forming future democratic leaders.

DAVID L. DARLING
Kansas State University

LETTER TO THE EDITORS

July 19, 1994

Dear Mr. Blair:

Congratulations on the special edition of the 25th Anniversary *Journal of the Community Development Society*. I have just finished reading it cover to cover. When I first heard the theme, "What We Have Learned," I thought it an excellent idea. Your final product is ample proof that it was.

Of course no review, especially an uninvited one, would be complete without a few comments.

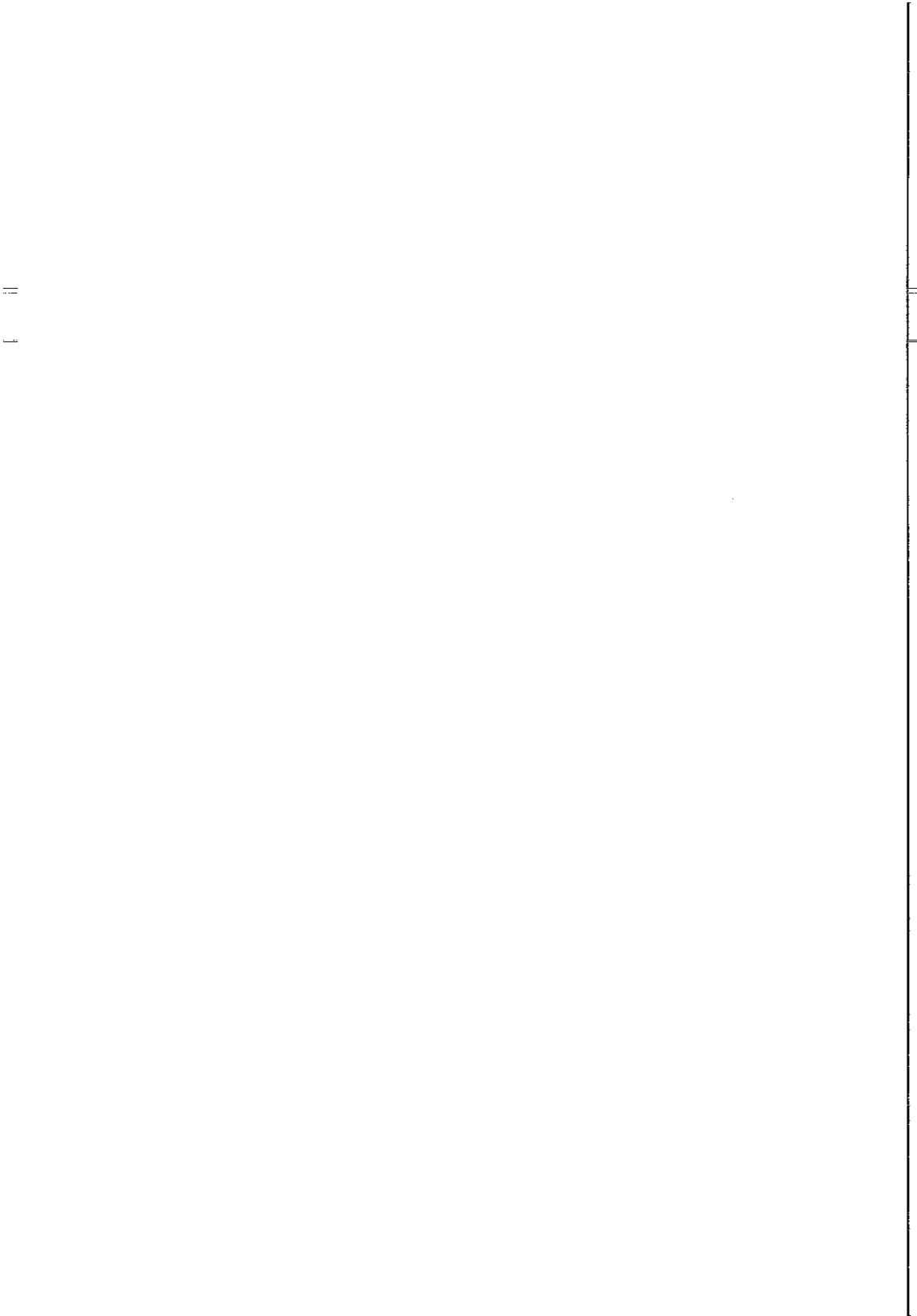
- I am very impressed by the special effort made by the authors of three of the articles to stick with the theme. The articles by Vernon Ryan, Mark Tucker and Ted Napier, and John Daley and Ellen Netting provided some insight into our theoretical and practice progress over the past quarter century. The others are for the most part interesting and useful, but hardly assessments of what we have learned in recent years. Some of the content is little more than an example of the application of "old stuff." Too bad.
- I wish you and Jerry might have written a final chapter which provided some sort of summary of what we have learned. You could have noted what the articles included and what they did not. You are both capable of doing an excellent job on such a piece. You might still want to do this for an upcoming issue of the *Journal*.
- I believe there are a few things which we have learned about community development over the last 25 years which do not appear (at least with any prominence) in this issue.
 1. Community development is an ongoing process. It is not accomplished with a single strategic planning event or single activity.
 2. Community leaders, especially those in rural areas, are in constant need of external technical assistance if they are to make any significant gains when addressing problems in their communities. The active effort of a large number of local citizens is vital, but without external technical assistance, is apt to lead to frustrating failure. In short, leadership training and community development process skills are not enough; continuing access to technical content is critical.
 3. If government or private sector community development programs are to be successful, they must be available over a long period of time. Several years are required to make any major long lasting change in

almost any community. Furthermore change is continuous. Solve one concern today and you have another tomorrow. Why then do we “professional community developers” initiate or agree to participate in short term, one time only community development programs? I for one am fed-up with so called pilot programs. They are, for the most part, little more than palliatives aimed at placating the peoples’ cries for assistance. When was the last time you saw a successful pilot program turned into a fully funded effort? Most of yesterday’s best community development programs couldn’t pass Congress or receive funding from Foundations today.

I am positive with a little effort you and Jerry could list a number of other things we have learned in the past 25 years which are not included in this publication. I am well aware that as editors, you had to live with the manuscripts you received. Nonetheless, I would plead with you one more time that an attempt be made to summarize the things community developers have learned over the past 25 years. I repeat, I really enjoyed reading the entire publication. It is rare that I have the necessary patience to read all of any professional journal. This one held my attention. Congratulations once again.

Sincerely,

Glen C. Pulver





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Submit four printed copies of the manuscript on 8½" by 11" bond in near-letter quality type. Double space *all* material, including indented passages, footnotes, and references, with ragged right margins and no hyphenation. Three copies of each paper without author identification will be submitted to referees for review.

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