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The effects of economic recession on community

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THE EFFECTS OF ECONOMIC RECESSION ON COMMUNITY

by
Linda K. Roe

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of the requirements for the degree of

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The thesis of Linda K. Roe for the degree of Master of Arts in Sociology is approved.

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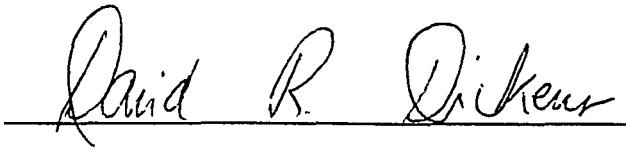

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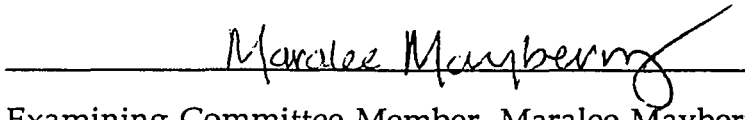

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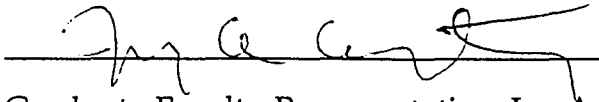

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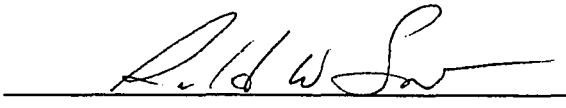

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ABSTRACT

This research project was designed to examine the effects changes in economic conditions--notably, changes which occurred during the recession of the early 1980s--have had on patterns of social interaction in rural, specifically mining-dependent communities. The study was conducted in two communities located in Northeastern Minnesota during the spring of 1990. Data were gathered via a mailed questionnaire, which was developed to assess patterns of social interaction before, during, and after the recession. The analysis showed both communities experienced an increase in orientation toward extracommunity systems over the three periods. Age was specified as a condition which affected changes in perception of problems within the community, behavioral attachment and psychological ties to the community. Examination of the qualitative data revealed that mining-dependent communities are undergoing a transition in patterns of social interaction--from being very traditional and *Gemeinschaft*-like, to realizing the need for purposive, rational strategies to redevelop community structures.

INTRODUCTION

The continuing plight of America's rural population is the target of considerable public and private attention. For example, programs broadcast on Minnesota's public television during July and August of 1987 focused on rural communities that were substantially affected by the recession of the early 1980s, and have faced continued difficulties trying to recover (Minnesota Issues 1987a 1987b). It is particularly difficult for small towns on Minnesota's Iron Range, located in Northeastern Minnesota, whose livelihood has been dependent upon mining for the past century. At midcentury, Minnesota supplied 26 percent of the iron ore world wide. By 1988, that figure had dropped to only four percent (Munnich 1991). The high grade natural ores that were once economical to extract from this region have been depleted. During the 1970s, the mining of taconite, a lower-grade ore found in abundance on Minnesota's Mesabi Range, replaced the mining of the high grade natural ore. New technologies in the industry have made it possible for the lower-grade taconite to be reduced to a pellet form which contains over 60 percent iron (Lipp 1987). In 1980, a thriving taconite industry accounted for 46 percent of the wages paid in St. Louis County, excluding Duluth (Arrowhead Regional Development Commission 1987: 27). The recession of the early 1980s, however, levied a heavy toll on the iron ore industry across North America (Marcus and Kirsis 1989). The consumption of iron ore at United States steel plants fell from a high of 115,014 gross tons in 1979 to 55,233 in 1982, the lowest level in half a century (Lipp 1987: 248). Steel company losses for 1982 exceeded $3.5 billion (Reid 1984: 5). Between 1982 and 1988, two of the eight major taconite operations on Minnesota's Iron Range closed, five decreased capacity up to 41 percent, and only one survived the

effects of the recession unscathed (Marcus and Kirsis 1988: 18). Minnesota Department of Jobs and Training reported unemployment rates across Northeastern Minnesota rose from 5.6 percent in 1978 to a high of 18 percent in 1983 (cited in Schmickle 1984). It is estimated that at least 10,000 Iron Range jobs were permanently eliminated during the period of the recession (Reid 1984), and as of 1989, over 21,000 people have left the area (Egerstrom 1989).

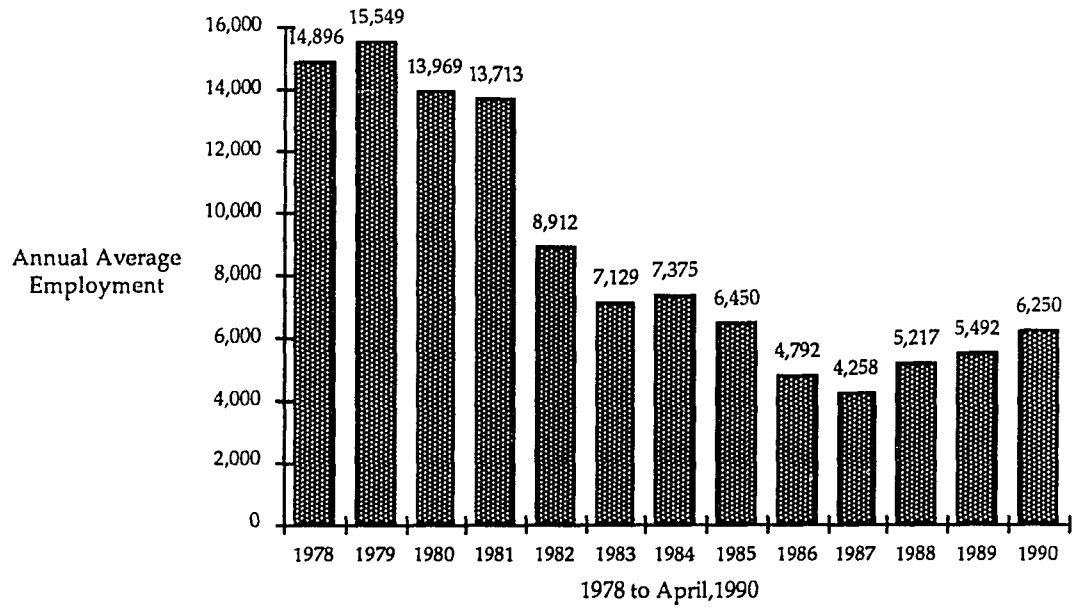
Figure 1 illustrates the mining employment trends for the Arrowhead Region from 1978 to 1990. Total mining employment reached a peak in 1979, then declined steeply during the period of the recession (1982 - 1983). As shown, in 1990 mining provided only 42 percent of the employment it had provided in 1979.

Frank Forsythe, Executive Vice President of Cleveland-Cliffs Inc., the world's largest producer of iron ore pellets, accounted for significant changes in the ore industry during the period of the recession as follows:

> The steel industry, iron ore's only legitimate customer, was growing and hitting record production levels early in the 1970s in North America. Shortages during the mid-70s had steel-makers and raw material suppliers alike wondering how they would ever meet the demand. But then a number of conditions, including two oil crises, raging inflation, record interest rates, and the high value of the dollar, combined to intensify the problems already existing in the steel industry. Instead of expansion, mills and mines were closed and thousands of employees were out of work (Forsythe 1987: 4).

Bluestone (1981) lays the blame for the crisis on capital disinvestment, noting "people are being forced in ever larger numbers to abandon their communities, seeking not so much greener pastures elsewhere, as ones that are not as economically parched as those they were forced to leave. In the course of this process, they are forfeiting something quite precious--their sense of security and their desire for community" (Bluestone 1981: 40).

Figure 1
ANNUAL AVERAGE MINING EMPLOYMENT
FOR THE ARROWHEAD REGION
(1978 TO APRIL, 1990)[1]



[1] Source: Minnesota Department of Jobs and Training - St. Paul, Minnesota

Although a recent upturn in the taconite and steel industry has led to an increased demand for skilled workers on Minnesota's Iron range and some stabilization in out-migration, the future economic vitality of this region is questionable. State and regional programs have been developed to attempt to find long-term solutions; however, the obstacles are extensive. Problems include overall high unemployment, limited availability of development capital, lack of local development capacity, business and industry dislocations, low per capita personal income, and changing regional demographics (Arrowhead Regional Development Commission 1987: 13).

The dilemma facing Minnesota's Range towns is similar to that of many small towns across the nation, where the way of life and community viability have been threatened by changes in the economy. While some people have been fortunate enough to remain employed, or have been called back to their old jobs, others have either been forced into early retirement, encouraged to train for new jobs, or have relocated. It is a scene that parallels, in many ways, Simon and Gagnon's (1967) portrayal of the decline and fall of three coal mining towns following WW II when increased mechanization, the use of cheaper and more efficient fuels, and competition brought about an end to decades of prosperity. With almost haunting accuracy, Simon and Gagnon predicted nearly a quarter of a century ago, the continual demise of small towns resulting from prevailing economic conditions.

> The land and the economy of the United States will not support as many small towns as they did before. It is very difficult not to see the future as a long-drawn-out struggle for community survival, lasting for a half a century, in which some battles may be won but after the war will be lost. A future in which most such towns will become isolated or decayed, in which the local amenities must deteriorate, and in which there will be left only the aged, the inept, the very young--and the local power elite (Simon and Gagnon 1967: 51).

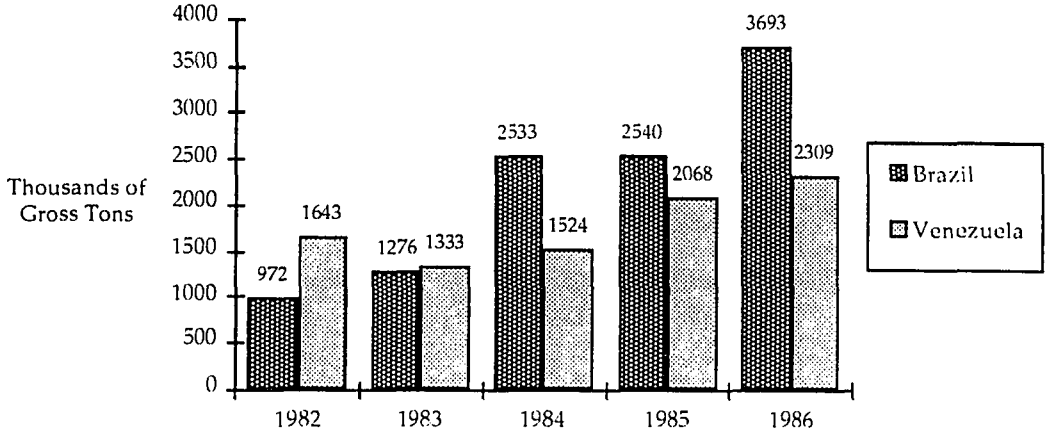
Today, the competition that undermines community life in small towns no longer originates strictly within the boundaries of the national economy. Rather, there has been an rapid shift to a state in which global economic conditions affect communities. For example, iron mining, which has served as the base of Northeastern Minnesota's rural economy for nearly a century, relies on the consumption of iron ore by the U.S. steel industry. The steel industry depends on automotive manufacturing, which in turn is sensitive to the value of the dollar against major foreign currencies. One of the principle factors effecting the health of U.S. steel industry is pressure from foreign iron ore producers. Rev. William Hogan, professor of economics at Fordham University, explains the problem as follows: "As far as the third world countries are concerned, they are facing labor employment costs of $3 and hour, as opposed to $21 or $22 in the U.S., $13 or $14 in Japan and about the same, maybe a little bit more or less, in Europe. So in terms of costs, we are competitive with the industrialized world when freight that they have to pay to ship the steel to the U.S. is added, but we are not cost competitive with the third world" (Hogan 1986: 5). Figure 2 illustrates the increase of imports from the Brazil and Venezuela during the early to mid-1980s (Lipp 1987: 244).

Blakely writes, "the world economy has changed in several fundamental ways, and this change has had a dramatic impact on individuals, communities, and nation-states" (Blakely 1989: 308). Moreover, to anyone who sees the changes as cyclical, Drucker asserts, "the world economy is not 'changing'; it has *already changed*--in its foundations and in its structure--and in all probability the change is irreversible" (Drucker 1986: 768).

Figure 2

IRON ORE IMPORTED INTO THE UNITED STATES

FROM BRAZIL AND VENEZUELA: 1982 - 1986



Changes in socioeconomic conditions has brought about a revival of interest among community development professionals. Policy makers are faced with the challenge of modifying outdated concepts from the industrial era into programs designed to meet contemporary realities. Blakely (1989) writes,

> A new intellectual construct for community development is in the process of being formed to guide practice in a completely new environment. Theory for these changed circumstances provides a useful and recognizable framework or operational principle from which the profession articulates its way of interacting with the changing world.... The problem that community development must address is that both the conventions and the setting have shifted, requiring the formulation of theories to match the new reality (Blakely 1989: 308-309).

Thus, there is a need to reexamine the established concepts that have characterized earlier community development paradigms in light of current social and economic conditions. Traditional perspectives of place and social

interaction, for example, have come into question as community members seek economic, political, and other relationships on a worldwide basis (Blakely 1989).

The goal of this research project is to examine the effect changes in economic conditions--notably, changes which occurred during the recession of the early 1980s--have had on patterns of social interaction in rural, specifically mining-dependent communities. Chapter One of the text provides a review of the literature, including an overview of the concept of community in sociological research, a discussion of community development theory, and the key issues confronting development professionals. Research questions derived from theoretical assumptions or expectations in the literature are stated at the end of Chapter One. Chapter Two details the research which was conducted in two communities in Northeastern Minnesota during the spring of 1990. The first section describes the development of the survey questionnaire. The second section documents the actual sampling procedures and data collection process. And the third section deals specifically with the operationalization and reliability of the study variables. Chapter Three explains the statistical techniques used for analyses of the data; then gives a presentation, summary and discussion of the research findings; and finally, qualitative survey data is used to support the research findings. Chapter Four provides an interpretation of paternalism and changing patterns of interaction in mining-dependent communities.

Chapter One

AN OVERVIEW OF THE PRACTICAL AND THEORETICAL ISSUES CONFRONTING RURAL COMMUNITY DEVELOPMENT PROFESSIONALS

The Concept of Community

One of the most fundamental concepts in sociological analysis has been the phenomenon broadly defined as "community". The origin of community studies is generally attributed to the publication of Ferdinand Tonnies book, *Gemeinschaft und Gesellschaft* (Lyon 1987). Tonnies distinguished Gemeinschaft (community) from Gesellschaft (association or society), stating it represents ". . . all intimate [and] private life...home life with its immeasurable influence upon the human soul . . . the lasting and genuine form of living together,"opposed to "public life [which is] the world itself...transitory and superficial...a mechanical aggregate and artifact" (Tonnies, [1887] 1957: 33-35).

Since the turn of the century, well over one hundred definitions of the concept "community" have been published. In an analysis of ninety-four definitions Hillery (1955) found they had but one element in common, they all included people as an essential feature. Areas in which most agreed, included social interaction, common ties, and geographic area. Comparing Hillery's analysis to definitions published since 1950, Willis (1977) established the only factor which had changed significantly in usage was social interaction. Social interaction was reported as an element in 83 percent of definitions since 1950, opposed to 97 percent in the earlier study. Common

ties increased from 66 percent to 77 percent. Overall, Willis found that social scientists had not changed substantially in how they define community, recognizing the principal theoretical components to be geographic area, social interaction, and common ties. Most recently, Christenson, Fendley and Robinson (1989) have reviewed the literature, including the above mentioned studies, and suggest the following definition of community: "People that live within a geographically bounded area who are involved in social interaction and have one or more psychological ties with each other and with the place in which they live"(Robinson 1989: 6-9).

As legion as the definitions of community are, so too are the studies of community. Lewis points to one of the more notable categories of community studies as that which emerged when investigators "subjected a specific territorial social aggregate to a mixture of ethnographic, ethnological, and sociological study" (Lewis 1974: 10). Included here are the familiar works of the Lynds (1929), Warner and Lunt (1941), Vidich and Bensman (1958), Lantz (1958) and others. Given the lack of conceptual clarity regarding community, it would be a futile undertaking to pursue a general review of comparability of studies. The contexts in which community is viewed are numerous, and each has consequences for operationalization and measurement. It is reasonable to assume that the study of community--institutions having people with shared aspirations and identities--will continue as a focus of interest for sociologists, and as Blakely (1989) attests, such studies are fundamental to community development.

Theories of Community Development

Before examining specific issues related to community development, it is important to have a general idea of what the goals of community development are. Christenson, Fendley and Robinson (1989) recently defined them as follows:

> The primary goal of community development is to help people improve their social and economic situations. . . . Community development is concerned with public policies, government actions, economic activities, institution building, and other types of actions that not only affect people but can be affected by people. It primarily is concerned with people as stimulators of social action processes. It focuses on the humanistic elements involved in change and how such change contributes to social and economic well-being (Christenson, Fendley and Robinson 1989: 3).

Proposed theories of community development differ between professionals who emphasize development *in* the community, aimed at continuing improvement of community services and quality of life, and those who argue in favor of development *of* the community, where community services, facilities, or improvements are contributed by an outside agency or organization (Littrell and Hobbs 1989: 49-50). Blakely (1989) writes,

> We are faced today with profound and deep divisions in professional practice regarding the emphasis and even the rationale for the development professions because of this new and deepening separation in basic views of community as a place and development as a process. There are those who continue to view community as a social interaction form. The emerging dominant view is that of community as an economic system designed to meet the individual and collective needs of residents. . . . As current community development theorists (Pulver 1979; Cary 1970; Blakely 1979; Castells 1983) indicate, the reality of an advanced industrial society alters the base of community so dramatically that the area of development has shifted from development *of* the community to development *in* the community (Summers 1986) (Blakely 1989: 314).

By contrast, Wilkinson (1989) argues,

> Both perspectives are important from the standpoint of trying to understand how communities change and develop (Wilkinson 1986), and the two types of development can influence one another (Summers 1986). Still they are different, and the future prospects for one are not necessarily the same as for the other....having selected selected the process of community development as the central object, precedence is given to development *of* the community rather than to development *in* the community, although the later cannot be ignored is assessing the future for community development. The concept development *of* the community takes precedence because it relates explicitly to the process of community development, while development *in* the community views the locality only as a setting. Community development is the process wherein community develops in a local population. (Wilkinson 1989: 338).

Given that both sides of this argument make credible points, it is apparent that an effective plan for rural community development must take into account the limits of a strictly local or grassroots approach and at the same time realize that social and economic conditions in the community are not going to improve without the purposive efforts of local citizens. As Moxley and Hannah write, "External linkages are important in a minority of projects, but most are dependent on local initiative. Even when an outside agency introduces an idea, the community must have the capacity to mobilize in response, thus introducing the possible crucial influence of community solidarity or 'activeness'"(Moxley and Hannah 1986: 22). Putting Blakely's argument in some perspective, Warren states "for not only do external forces pose problems for local communities; they also constitute its very life blood. Without them there is isolation, stagnation, eventual death. The problem, therefore, becomes one not of thinking of external impacts as uniformly bad, for they are not, but rather one of seeking to gain an optimal measure of influence or control so that their harmful effects may be avoided or minimized, their advantageous effects maximized" (Warren 1975).

Community development must also reckon with conditions that may block or facilitate that process. Wilkinson emphasizes that "the extent to which community is present or developed in a local population can influence the level of achievement of goals by that population" (Wilkinson 1986: 3). "In practical terms," he writes, "the emphasis in policy should be on assuring that people can meet their needs together and can participate actively and collectively in solving their common problems. People need jobs and services, for example, and the meeting of these and other such needs should be the overriding objective of a community development policy" (Wilkinson 1989: 351).

Issues Confronting Development Professionals

Wilkinson (1989) stresses that in assessing the future for community development, social and economic trends, patterns of inequality and other potential impediments to community interaction must be taken into consideration. One of the barriers to community interaction that has been debated for decades and continues to confront development professionals is the effect of local population size.

The theoretical base for most studies relating to community size originate from the writings of Ferdinand Tonnies, Emile Durkheim, Louis Wirth, and Georg Simmel. For Tonnies ([1887] 1957), societal change is brought about by increased urbanization and industrialization. With broadened interaction patterns Tonnies predicted social bonds would become more associational (*Gesellschaft)* in nature, meaning deliberately created to serve some purpose. Communal bonds would lessen (*Gemeinschaft*) leading to decreased cohesion and decreased common bonds between people.

Similar to Tonnies' typologies, *Gemeinschaft* and *Gesellschaft*, Durkheim ([1893] 1933) suggested that with increased population, increased interaction and most importantly an increase in the division of labor, we see a change from *mechanical* to *organic* solidarity. With mechanical solidarity, everything is based on shared beliefs and sentiments which Durkheim called the *collective conscious*. This suggests that people have a strong set of values that are ingrained in them, or socialized into them. Society is relatively undeveloped and characterized by homogeneity and low individuality. As Durkheim explains,

> Solidarity which comes from the likenesses is at its maximum when the collective conscience completely envelopes our whole conscience and coincides in all points with it. But, at that moment, our individuality is nil. It can be born only if the community takes smaller toll of us (Durkheim 1933: 130).

With increased industrial development the collective conscience starts fading out and society goes through a period of *anomie* or normlessness. Eventually a sort of functional social and economic interdependence develops which generates an *organic* type of solidarity. Here, society becomes based on the need for the parts to work together. This develops into a society characterized by high individuality, and a highly complex division of labor.

Wirth ([1938] 1951) proposed that increases in population size, density and heterogeneity would reduce bonds of kinship and neighborliness resulting in a predominance of secondary, rather than primary ties. For Simmel (1950), primary groups and the expression of personal feelings are encouraged in rural areas. With increased urbanization and specialization, humans are subjected to sub-ordination leading to alienation, psychological tension, and stress. People become detached from each other and develop a blase´ attitude in order to protect themselves from psychic overload.

Considering community development is a process of social interaction, it is important to recognize such implications of increases and decreases in the size of the local population. The question that remains, however, is "does community tend to disappear as size increases, or does size contribute to community development by enhancing adaptive capacity?" (Wilkinson 1989: 347). Granovetter argued that the size of an interactive network affects the possibilities for "strong ties" and "weak ties"--with the strength of a tie defined as a "(probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and reciprocal services which characterize the tie"(Granovetter 1973: 1361). Weak ties, according to Granovetter, are "indispensable to individuals' opportunities and to their integration into communities," while strong ties "[breed] local cohesion, [and] lead to overall fragmentation" (1973: 1378). Granovetter's study represents how difficult it is to weigh the advantages and disadvantages associated with large and small communities. Wilkinson writes,

> When the population is small, more of the contacts are in strong ties, simply because opportunities for weak ties are limited. In places with larger populations, opportunities are conducive to weak ties as well as to strong ties. Thus both the volume of potential contacts and the probable mix of weak and strong ties vary by population. Community development obviously depends on the presence of strong ties among local residents; without these there would be little cohesion in local interaction. But as Granovetter (1973) argues, weak ties also contribute to the unity and stability of community structure; strong ties in isolation, without weak ties to link them to the larger community, can also become disruptive. Thus, rural areas, where strong ties predominate, have an advantage for community development in one sense but a disadvantage in another. Small population size encourages close contacts and these are essential for community development. But small population size discourages other contacts that also contribute to community development. Thus, a small community has a community problem (Wilkinson 1989: 347-348).

According to Wilkinson (1986), a rural existence is, itself, a factor that restricts development ecologically by limiting the ability of the local population to meet its daily needs within the community. It is an issue related to distance and dependency. Wilkinson writes, "A small population aggregate in a modern society simply cannot support a variety of organizations, agencies, firms, and other structures to meet the daily needs of the people (Kraenzel 1980).... As people in rural areas look elsewhere for needed services, they weaken their behavioral attachments to the local society, if not their psychological ties. Failure to meet the needs of local residents more or less comprehensively on a daily basis within the local territory can offset advantages of rurality for community" (Wilkinson 1986: 7).

Inequality can also have an effect on the extent and quality of local interaction, and possibly block the emergence of community among people who live together in a local settlement. Wilkinson (1989) notes that while many of the traditional bases of inequality within communities have declined over the years, the emergence of a world-wide political economy has introduced a new basis of inequality. He writes, "Capital mobility, augmented and expanded to world scale by modern technologies, makes possible a system whereby local areas are assigned specialized uses and thus are stratified by use-value in the larger system" (Wilkinson 1989: 349). In a study of boom-and-bust cycles in mining regions, Markusen found, "As states and local communities increasingly oppose energy development, the corporations increasingly pressure the federal government to intervene" (Markusen 1978: 129). In line with this, Summers (1977: 12-13) discovered that in a study of industrial development of rural areas, "more often the industry and the local businesses clearly gain while industrial location has a small or even negative effect on the local public sector and on economically disadvantaged citizens."

Blakely (1989) argues that the transformation in the American and world economies has led to an uncoupling of production from place. "In other words," he writes, "the production process is no longer anchored in natural resources, skilled labor, or production capacity of certain places (Bluestone and Harrison 1982). ... As companies abandon their role in community, the very definition of community itself is transformed"(Blakely (1989: 311). Christenson, Fendley and Robinson (1989), while holding to their position that territory is an essential component of community, recognize the need for diversification. They write,

> It is doubtful that communities can join in world competition in credit flows and capital movements. However, communities will have to find their niche in the state, national, and world economies if they are to survive and prosper. Therefore, it is time for communities and neighborhoods to stop thinking in grand, expansive terms (e.g., attracting huge factories) and to start thinking in terms of supporting economic enterprises that maximize resources unique to the area. Then they need to develop a market in the world economy. Communities need to recognize this world economic situation in order to identify both which structures in their area need to be preserved and which can be changed (Christenson, Fendley and Robinson 1989: 16).

Another concern of development professionals is the future of the local society. This is an issue that relates to the spatial boundaries of community. Not all writers include this component--territory, land, or geographical boundaries--in their definitions of community (Christenson, Fendley and Robinson 1989). Bender (1978) and Gusfield (1975) are among those who have suggested that the territorial component be dropped from the definition of community, Bender arguing that "territorially based interaction represents only one pattern of community, a pattern that becomes less and less evident over the course of American history" (Wilkinson 1989: 343). The idea of lessening the emphasis on place is suggested in Warren's essay on"The 'Great Change' in American Communities" in which he wrote there

is "increasing orientation of local community units toward extracommunity systems of which they are a part, with a corresponding decline in community cohesion and autonomy" (Warren 1978: 52). What this implies, as Lyon (1978: 61) notes, is that "the local units within the community are becoming so closely linked (vertically) with extra-community systems, that the question of whether the community remains a significant social system depends largely upon the degree of linkage (horizontally) among the various local units." Scherer (1972) is one who, as Wilkinson notes, "heralds the collapse of 'place-chains'" and the growing importance of territory-free networks, viewing it as a trend toward mobility and freedom that will lead to greater well-being in the future (Wilkinson 1989: 343). Blakely (1989) also argues that place is becoming less relevant as more and more of people's activities are involved in specialized networks. He writes:

> While the notion of community retains some semblance of respectability, the underlying values and support systems are no longer in place. This is demonstrated by the sharp increases in anomie in both urban and rural areas. Surrogate communities linked by computers or other electronic methods are being formed faster than are traditional human interacting communities. These new communities do not share the basic elements of community such as shared space, common heritage, or intergroup relationships. Communities are now formed as networks seeking economic, political, and other relationships on a worldwide basis (Jacobs 1984). Community no longer serves as the strong, commonly understood base for conceiving of and implementing development strategies (Blakely 1989: 312-313).

From this position, investigation of communities of the future should not be directed by territorial characteristics or those related to place, rather, the focus should be on intimate networks wherever they might occur (Wilkinson 1989).

Blakely's perspective illustrates a dramatic shift from earlier works such as Lewis (1974) who defended the view that community needs to be

viewed as a territorial social system. Lewis referred to community as a "society in microcosm," having "social completeness" and "all the basic institutional structures associated with human social life at the most general level" (Lewis 1974: 11). The work which influenced Lewis's writing, and continues to show up in the contemporary literature is Kaufman's "Toward an Interactional Conception of Community," published in 1959. Kaufman's approach focuses on dynamics and process, rather than networks of social relations. Kennith Wilkinson, who co-authored "Community Structure and Leadership: An Interactional Perspective in the Study of Community" with Kaufman (1967) views community as entailing "a common life which in itself, is a complex of social interactions. Community, however, is not the summation of these interactions. Rather, community interaction is the process whereby the many different interactions and associations that compose a common life are integrated as a whole. . . .[that] contributes to the wholeness of the local society" (Wilkinson 1989: 339). In contrast to Blakely's emphasis on vertical ties (1989), Wilkinson argues that "people live together in local ecologies even though the boundaries of those ecologies are blurred and tend to merge into one another horizontally and vertically. Thus blurring of boundaries is irrelevant if one is looking for the core characteristics of a community rather than for its outer reaches. Moreover, one can recognize linkages between local activities in the larger society without denying that local activities are local" (Wilkinson 1986: 5). In line with this, Christenson's (1982) view is that "a community or neighborhood can exist with close linkage to the larger society and still retain its identity and viability because it provides a basis for the local population to engage in community actions" (Christenson, Fendley and Robinson 1989: 6-7).

To counter Scherer's "place-chains" criticism of the territorial community, Wilkinson (1989) turns to Fisher's (1977) argument that what is declining are involuntary constraints on community attachment and not necessarily the actual strength of attachments to particular places. Wilkinson writes, "as people become less constrained and more mobile in the future, the freedom they experience could serve to strengthen rather than to weaken the voluntary commitments they make to the process of acting on behalf of the community of residence" (Wilkinson 1989: 344). Similarly, Summers (1985) adds a psychological explanation for the persistence of local, territorially focused communities in the face of macro political, economic, and social forces. He writes, "As long as there are human beings confronting a harsh physical and social environment, there will be community as a form of collective action because mobilization has its roots in the private troubles of individuals" (Summers 1986: 352).

In sum, Wilkinson (1989) explains that the best reason for retaining the territorial element is that people will go on living in interaction with one another in local territories in the future as they always have in the past. He writes, "if the essence of community is a process of social interaction, then the local territory, which is where people live and move and have their being in interaction with one another, is the place to begin the search for the community of the future" (Wilkinson 1989: 344).

Research Questions

A number of issues and questions have been raised in the literature concerning purported changes in the patterns of interaction in rural communities. One of the questions concerns the issue of the extent to which territorially based interaction persists in rural communities. Is there, as Warren (1978: 52) predicted, "an increasing orientation of local community units toward extracommunity systems of which they are a part, with a corresponding decline in community cohesion and autonomy"? Scherer (1972) believes that increased mobility will eventually lead to greater well-being. If people are, in fact, experiencing an increased orientation toward systems outside of their own community, then what are the factors contributing to, or counteracting this change? Wilkinson argues, for example, that size (1989), distance and dependency (1986) are factors which act as impediments or barriers to community interaction. His assumptions are that as people in rural areas, particularly the smaller communities, look elsewhere for needed services, behavioral attachments as well as psychological ties to the local society are weakened. Fisher (1977) contends that as constraints or involuntary ties to a place decrease, people become free to develop ties outside the community. This freedom should strengthen rather than weaken voluntary commitments to the community of residence.

These theoretical assumptions or expectations, which have been presented in the literature in light of recent changes in the economy, notably, changes which occurred during the recession of the early 1980s, are the basis for formulating the following research questions:

Question 1: Is there actually a decrease in the perceived quality or availability of local community services following a period of recession?

Question 2: Is there an increase in orientation of local community members toward extracommunity systems following a period of recession?

Question 3: Is there an increase in problems perceived in the local community following a period of recession?

Question 4: Is there a decrease in behavioral attachments to the community of residence following a period of recession?

Question 5: Is there a decrease in psychological ties to the community of residence following a period of recession?

Chapter Two
RESEARCH METHODS

This chapter details the research which was conducted in two communities in Northeastern Minnesota during the spring of 1990. The first section describes the development of a questionnaire for assessing changes in patterns of interaction over a 12-year period. The second section documents the actual sampling procedures and data collection process. And the third section deals specifically with the operationalization and reliability of the study variables.

Survey Questionnaire

A 12 page self-administered questionnaire (see Appendix B) was developed to examine the impact of economic recession on community, including the effects on patterns of interaction and on public services. Many of the questions, including those which focus on the services and facilities available in the community, involvement in community activities, perception of problems in the community, distance traveled to needed services, and migration patterns were repeated for three specific periods. Period 1 includes the years 1978-1980 (prior to the recession), Period 2 includes the years 1981-1983 (during the recession), and Period 3 extends from 1987-1990. Questions aimed at describing changes in occupation, employee benefits, annual income, and source of income were designed to be answered by both the husband (or single male) and wife (or single female). Other demographic items included length of residence (including the number of previous generations who had lived on the Iron Range), where the individual grew up, family type, age, education, and ethnic background. The

last set of questions refer to current efforts to improve the local economy, and to conditions affecting the future of the community of residence.

The cover letters (see Appendix A) which accompanied the questionnaire were designed to provide a brief explanation of the purpose of the survey and to inform potential respondents that the return materials were not been coded and cannot be linked to addressee, thus ensuring that all answers and comments will remain anonymous.

A pretest of the questionnaire was conducted which included responses and comments from residents of three separate Iron Range communities. To avoid contamination, the pretest was not conducted in either of the communities included in the present study.

Sample Selection and Data Collection Technique

This research was carried out during the spring of 1990. Data were collected from residents of two mining-dependent communities, Buhl and Mountain Iron, both located in Northeastern Minnesota on the Mesabi Iron Range. Buhl is one of ten very small (population less than 1,000) communities on the Mesabi Range. Mountain Iron is representative (in size) of another ten communities which have a population between 1,000 and 5,000. Of the two communities selected for this research, Buhl is the farthest distance from one of the larger, more urban, range communities. It is situated approximately 14 miles to the East of Hibbing, which has a population of 18,046 (1990 census), and approximately 14 miles to the West of Virginia, which has a population of 9,410 (1990 census). Mountain Iron, on the other hand, actually boarders the community of Virginia.

The telephone directory was used as a sampling frame for the community of Buhl. Since the total number of residential listings was small, to achieve maximum coverage, a total canvas was designed which included every household listed in the directory. A total of three hundred forty five questionnaires were mailed to residents of Buhl during March of 1990. A week prior to the mailing, an ad was run in the Mesabi Daily News, a local newspaper, announcing the study and encouraging residents to complete and to return the questionnaire (see Appendix C). A follow-up postcard was mailed approximately four weeks later to thank those who returned their questionnaires, to offer respondents a copy of the compiled results, and to ask those who had not yet returned the completed questionnaire to do so (see Appendix D). A total of one hundred thirty nine completed questionnaires were received for a response rate of 40 percent. Since data were collected for both the husband and the wife in the case of married couples, and well as for the single heads of households, the total number of adults (18 and over) who were surveyed came to 238.

In the case of Mountain Iron, the total number of households listed in the local telephone directory exceeded 1,000. Since data collection costs were a factor, a non-random sampling technique was employed using a bulk mailing technique that ensured coverage of households in all areas of the community. Questionnaires were delivered to all post office box holders (approximately one hundred and fifty), and to the first fifty households on each of the postal delivery routes for the city of Mountain Iron. A total of four hundred questionnaires were delivered. One hundred thirty eight completed questionnaires were returned for a response rate of 35 percent. The total number of adults (18 and over) who were surveyed came to 248.

Representativeness of the sample

The representativeness of the sample can be assessed by how closely the aggregate characteristics of the sample approximate those aggregate characteristics in the population. Table 1 provides a comparison of the two samples used in the study with the census data for 1990. The proportion of children to adults (the only breakdown of 1990 census data presently available) is used as indicator of the representativeness of each independent sample. These ratios, given in decimal form, show that the Buhl sample is more representative of the population (.29 compared to .30) than the sample drawn from Mountain Iron (.38 compared to .49).

Table 1
SAMPLE DATA COMPARED TO 1990 CENSUS DATA

	Age Category			Proportion
	Under 18	18 and Over	Total	of Children to Adults
Buhl				
1990 Census Data	210	705	915	.30
Sample Data	68	238	306	.29
Mountain Iron				
1990 Census Data	923	2,439	3,362	.38
Sample Data	122	248	370	.49

Study Variables

The questionnaire used in this study was designed to measure a number of separate dimensions of the overall patterns of community interaction. Following the data collection procedure, factor analysis was used to identify the questionnaire items which formed the clearest factor structure

to measure each of the underlying constructs. A total of 31 items were analyzed simultaneously for each of the three periods under investigation. This procedure was carried out separately for each of the independent samples. All of the items measuring patterns of interaction are technically ordinal level measurements. Rummel (1970: 225) cautions that in the case of ordinal scales, the interpretation of the results of factor analysis may not be clear. In the present study, four factors clearly emerged which, altogether, included 24 of the 31 questionnaire items. The factor loadings for these 24 items, plus the relative contribution of each common factor to the total matrix of coefficients for each of the three periods is given in Appendix E. Three of the nine items expected to load with community attachment were shown not to be factorially similar. The six items that clustered were retained to measure behavioral attachment to the community, and the remaining three were clustered as indicators of psychological ties to the community. Four of the original 31 items were eliminated altogether.

The following multi-item variables were thus constructed:

1. Perceived quality of services in the community (SERVICES)
2. Orientation toward extracommunity systems (ORIENTATION)
3. Perception of problems within the community (PROBLEMS)
4. Behavioral attachment to the community (BEHAV ATTACH)
5. Psychological ties to the community (PSY TIES)

Descriptions of the actual items which were used to operationalize each of these composite variables are provided below. To maintain consistency with the coding schemes used in the analysis, some of the scales are recoded or given in the reverse order from the way they originally appeared in the self-administered questionnaire.

SERVICES

Seven items included in the following matrix question were used to measure perceived quality of facilities and services in the community:

1. Listed below are facilities and services that are available in most communities. When you think of the range community where you lived during this period, how would you rate these services?

	Excellent	Better than Average	Average	Below Average	Not Available
Local schools	5	4	3	2	1
Parks and playgrounds	5	4	3	2	1
Child care facilities	5	4	3	2	1
Activities and programs for teenagers	5	4	3	2	1
Care for elderly	5	4	3	2	1
Crime control (in general)	5	4	3	2	1
Municipal improvements	5	4	3	2	1

ORIENTATION

The questionnaire contained seven items included in two matrix questions which were used to measure orientation of local community members toward extracommunity systems. These are:

1. Where did you utilize the following services (most of the time) during this period?

	In the community where I lived	Within 25 miles	25 to 60 miles away	More than 60 miles away (inc. Duluth)
Medical care	1	2	3	4
Grocery shopping	1	2	3	4
Clothes shopping	1	2	3	4
Appliance shopping	1	2	3	4
Shopping for automobiles or trucks	1	2	3	4

2. Where did you participate in the following activities (most of the time) during this period?

	In the community where I lived	Within 25 miles	25 to 60 miles away	More than 60 miles away (inc. Duluth)
Recreational activities	1	2	3	4
Eating out	1	2	3	4

PROBLEMS

A total of five items included in the following matrix question were used to measure perception of problems within the community:

1. Below is a list of things that some families and communities may have problems with. When you think of the community where you lived during this period, how much of a problem were these factors?

	Not a Problem	Slight Problem	Moderate Problem	Serious Problem
Drug abuse	1	2	3	4
Family violence	1	2	3	4
Alcohol abuse	1	2	3	4
Property crimes	1	2	3	4
Violent crimes	1	2	3	4

BEHAV ATTACH

A total of five items included in the following matrix question were used to measure behavioral attachment to the community of residence:

1. Of the following community activities, which would you say you were *very involved in, involved once in a while, or not involved in at all* during this period?

	Very involved	Involved once in a while	Not involved at all
Church and religious activities	3	2	1
Informal social clubs (ex. bridge club)	3	2	1
Annual community celebrations	3	2	1
Charitable organizations	3	2	1
Committees concerned with community affairs	3	2	1

PSY TIES

Three items were used to measure psychological ties to the community of residence:

1. How much did you feel that you *belonged to* or *felt at home* in your community during this time?

   3. [ ] Very much 2. [ ] Somewhat 1. [ ] Very little

2. Considering all your relatives and in-laws, except the very distant ones, what proportion of them would you say lived in the same community as you during this time?

   4. [ ] All 3. [ ] Most 2. [ ] A few 1. [ ] None

3. Considering all the friends that you had during this period, what proportion of them would you say lived in the same community as you?

   4. [ ] All 3. [ ] Most 2. [ ] A few 1. [ ] None

Estimating the reliability of the multiple-item variables

Technically, reliability refers to the extent to which measurements made on a variable contain variable errors. This degree of error (reliability) is defined as the ratio of the true-score variance in the scores as measured (Nachmias and Nachmias 1987). While in practice it is impossible to compute this directly, there are ways of estimating reliability based on the actual data. One procedure for securing reliability coefficients is the split half method which involves randomly dividing the items into two equivalent parts and correlating the scores from one part with the other. This is the basis for Cronbach's Alpha.

According to Cronbach, for a given test to be interpretable the key is not that all items simply be factorially similar. "What is required," he states, "is that a large proportion of the test variance be attributable to the principle factor running through the test" (Cronbach 1951: 320). Alpha, which is given

in decimal form, is an estimate of the proportion of the test variance in an equally weighted composite that can be attributed to a common factor among the items (Cronbach 1951).

For this study, Cronbach's Alpha was computed to assess the reliability of the composite scores for each multiple-item variable. This procedure involved using all items for each multiple-item variable across all three periods and across both samples. For example, the composite variable PROBLEMS contained a total of 15 items including five questionnaire items (described above) asked separately for each of the three periods. All valid cases (missing values excluded) from both samples resulted in a total N of 178. The computed value of alpha (.93) signifies that 93 percent of the variance in the composite is due to the common factor, presumably perception of problems within the community, among the items. The value of Cronbach's Alpha for each of the five composite variables is shown in Table 2. Since non-probability samples are used in this study, inferences should be made with caution as to whether the common factors themselves, or estimates of reliability actually reflect the larger population.

Table 2
VALUES OF CRONBACH'S ALPHA
FOR MULTI-ITEM VARIABLES

Variable	# of Items	N	Cronbach's Alpha
SERVICES	21	141	.92
ORIENTATION	21	190	.87
PROBLEMS	15	178	.93
BEHAV ATTACH	15	221	.89
PSY TIES	9	218	.85

Chapter 3
DATA ANALYSIS

Following the review of the literature a number of research questions were formulated based on certain theoretical assumptions or expectations. To answer these questions, it is necessary to describe statistically the relationships between a number of different variables. In any form of sampling technique, some amount of fluctuation is expected to occur in the sample results compared to if the same test were conducted on the entire population of interest. In the case of a non-probability sample there is no legitimate basis for estimating this sampling error. Thus, technically, the answers to research questions cannot be derived on the basis of a certain level of statistical significance. In the following analyses, although levels of significance are used to support decisions regarding differences and associations between variables, the actual probability of the results existing in the larger population is unknown.

Three statistics were performed on the sample data in order to present it in a form applicable to the research questions. First, a modified version of the Sign Test was employed to compute the change between the two sets of related data representing conditions before and after the recession, and at the same time allow for a comparison of results between the two independent samples. This procedure involved three steps. In step one, a new variable was created for each of the composite variables to indicate the change in scores between Period 1 (prior to the recession) and Period 3 (after the recession). In step two, the results for each individual case were categorized into one of three groups: scores that decreased from Period 1 to Period 3, scores that remained the same from Period 1 to Period 3, and scores that

increased from Period 1 to Period 3. In the final step, the results were crosstabulated by community, the independent variable. This procedure produced a table for each of the composite variables comparing the percentage of people whose scores decreased, increased, or remained the same by community. Additionally, elaboration analyses were performed on each of the contingency tables, controlling for age, education, length of residence, and the number of generations of family who have lived on the Iron Range. These findings are reported only in cases in which third variables specified the community change relationships.

The Sign Test was then performed on the scores for each community to denote the significance of the percentage difference between the two categories of change scores; that is, the difference betwween the scores which increased or decreased in value for a given variable. For this test, if a matched pair of scores stays the same from the before condition to the after condition, they are automatically dropped from the analysis. The null hypothesis of no difference occurs if the sum of the increases equals the sum of the decreases. The direction of the change is not predicted for the Sign Test, thus, a two-tailed region of rejection is calculated.

Finally, Kendall's tau-*c* was computed for the data presented on the original contingency table. Tau-*c* is used since the tables are not symmetrical. While Kendall's tau-*c* requires ordinal level data, it is also appropriate in cases where one of the variables is ordinal and the other is nominal and dichotomous (Bohrnstedt and Knoke 1988: 322). In this case the nominal variable COMMUNITY has two values which have been coded in order, with Buhl assigned a one and Mountain Iron assigned a two. Kendall's tau-c was computed to determine if there are any differences in the changes which occurred across time between the two communities. Thus, first the Sign Test

tests the significance of the changes which occurred in each community between Period 1 and Period 3, then Kendall's tau-*c* examines whether the changes are significantly different across towns.

Research Findings

Two independent samples were drawn for this study, one from the community of Buhl (population 915) and the other from Mountain Iron (population 3,362). Demographic data were compiled for each sample. This information, which includes length of residence, generations of family who have lived on the Iron Range, place lived while growing up, age of respondents, ethnicity, level of education, and family type is presented in Appendix F. Additionally, Appendix G gives the data showing changes in the level of income and social class[2] for the husband (or single male) and wife (or single female) over the three periods.

Question 1: Is there actually a decrease in the perceived quality or availability of local community services following a period of recession?

Table 3 shows over half of people in Buhl perceived a decrease in SERVICES following the recession (67 percent), compared to only 24 percent who perceived an increase. The results for Mountain Iron, on the other hand, show that less than half (47 percent) of the people perceived a decrease in SERVICES and 36 percent of people indicating an increase. These findings reveal there is a clearly a perceived decrease in SERVICES in Buhl ($p < .0001$), with no statistically significant change in Mountain Iron ($p = .366$).

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[2] Social class was computed using a coding scheme adapted from Hollingshead's two-factor index. See Appendix H for occupational classifications used in this study.

Table 3
PERCENT CHANGE IN PERCEIVED QUALITY
OF SERVICES BY COMMUNITY
FROM PERIOD 1 TO PERIOD 3

Change in Perceived Quality of Services: From Period 1 to Period 3	Community		
	Buhl (1)	Mountain Iron (2)	Total
Decreased	67 %	47 %	57 %
(*N*)	(51)	(34)	(85)
Stayed the Same	9	17	13
(*N*)	(7)	(12)	(19)
Increased	24	36	30
(*N*)	(18)	(26)	(44)
Total	100	100	100
(*N*)	(76)	(72)	(148)
Sign Test (two-tailed) p =	.0001	.366	

Kendall's tau-*c* value = .192

p = .011

Kendall's tau-*c* verifies that the association between COMMUNITY and change scores for SERVICES is highly significant ($p < .0001$). The tau-*c* value of .19 suggests that knowledge of the community of residence increases one's prediction of a respondent's perception of the changes in quality of services over time by 19 percent. Thus, the answer to Question 1 is: there is an interaction effect between change scores for SERVICES and COMMUNITY. Only in certain communities is there a perceived decrease in SERVICES following a period of recession.

Question 2: Is there an increase in orientation of local community members toward extracommunity systems following a period of recession?

The results in Table 4 reveal over half of the entire Buhl sample (55 percent) showed an increase in ORIENTATION, compared to only 6 percent of the cases indicating a decrease. In Mountain Iron there is also a notable difference in the percentage of people that increased (37 percent) compared to the cases that decreased (13 percent). In both communities these findings are confirmed by the Sign Test which indicates a high level of significance for the change scores ($p < .0001$). Kendall's tau-*c* ($p = .19$) indicates there is no significant association between change scores for ORIENTATION and COMMUNITY. Thus, the answer to Question 2 is affirmative. Regardless of the community of residence, there is an increase in orientation of local community members toward extracommunity systems following a period of recession.

Table 4
PERCENT CHANGE IN ORIENTATION TOWARD EXTRACOMMUNITY SYSTEMS BY COMMUNITY FROM PERIOD 1 TO PERIOD 3

Change in Orientation toward Extracommunity Systems: Period 1 to Period 3	COMMUNITY		
	Buhl (1)	Mountain Iron (2)	Total
Decreased	6 %	13 %	10 %
(*N*)	(6)	(14)	(20)
Stayed the Same	39	50	46
(*N*)	(56)	(39)	(95)
Increased	55	37	44
(*N*)	(39)	(53)	(92)
Total	100	100	100
(*N*)	(101)	(106)	(207)
Sign Test (two-tailed) $p <$	.0001	.0001	

Kendall's tau-*c* value = .062

$p = .194$

Question 3: Is there an increase in problems perceived in the local community following a period of recession?

The data in Table 5 shows that, in both communities, over half of the people perceived an increase in PROBLEMS following the recession, while fewer than one-fourth of the people perceived a decrease. These findings are confirmed by the Sign Test which indicates a high significance level ($p < .001$) for the change scores in each case. Tau-*c* indicates there is no significant association ($p = .32$) between change scores for PROBLEMS and COMMUNITY. The answer to Question 3 is therefore affirmative: there is a significant increase in perception of local problems following a period of recession, with no significant difference detected between communities.

The elaboration analysis of change scores for the variable PROBLEMS revealed that, in both communities, the perception of problems increased as age decreased. This finding is reported in Table 6, which examines the percentage of individuals in different age categories in both communities who perceived an increase in local problems between Period 1 and Period 3.

Table 6
PERCENT INCREASE IN PERCEPTION OF PROBLEMS
FROM PERIOD 1 TO PERIOD 3
BY COMMUNITY AND BY AGE CATEGORIES

	COMMUNITY	
AGE	Buhl	Mountain Iron
18 - 39	73 %	62 %
(*N*)	(41)	(53)
40 - 64	56	52
(*N*)	(69)	(94)
65 and over	29	33
(*N*)	(48)	(27)

Table 5
PERCENT CHANGE IN PERCEPTION OF PROBLEMS
BY COMMUNITY
FROM PERIOD 1 TO PERIOD 3

Change in Perception of Problems in Community: Period 1 to Period 3	COMMUNITY		
	Buhl (1)	Mountain Iron (2)	Total
Decreased	21 %	18 %	19 %
(*N*)	(19)	(17)	(36)
Stayed the Same	27	28	28
(*N*)	(25)	(27)	(52)
Increased	52	54	53
(*N*)	(47)	(52)	(99)
Total	100	100	100
(*N*)	(91)	(96)	(187)
Sign Test (two-tailed) p =	.0009	.0000	

Kendall's tau-c value = .035

p = .323

Table 7
PERCENT CHANGE IN BEHAVIORAL ATTACHMENT BY COMMUNITY FROM PERIOD 1 TO PERIOD 3

Change in Behavioral Attachment: Period 1 to Period 3	COMMUNITY		
	Buhl (1)	Mountain Iron (2)	Total
Decreased	34 %	25 %	30 %
(*N*)	(38)	(31)	(69)
Stayed the Same	43	37	40
(*N*)	(47)	(45)	(92)
Increased	23	38	30
(*N*)	(25)	(46)	(71)
Total	100	100	100
(*N*)	(110)	(122)	(232)
Sign Test (two-tailed) p =	.130	.110	

Kendall's tau-*c* value = .168

p = .009

Question 4: Is there a decrease in behavioral attachments to the community of residence following a period of recession?

Data in Table 7 shows that although the scores for BEHAV ATTACH did not change significantly for either community, the change scores across the two communities are significantly different ($p = .009$). For the community of Buhl, the greater percentage of people (34 percent) showed a decrease in BEHAV ATTACH, while the highest percentage of people (38 percent) in Mountain Iron indicated an increase. The computed value for tau-*c* suggests that knowledge of the community of residence increases one's prediction of the association between the change scores for BEHAV ATTACH and COMMUNITY by nearly 17 percent. Thus, the direct answer to Question 4 is negative: there is no significant decrease in behavioral attachment following a period of recession. There is, however, a tendency to show an increase or decrease in behavioral attachment, depending on the community of residence.

The elaboration analysis of change scores for BEHAV ATTACH revealed that in both communities, and most notably in Buhl, behavioral attachment increased as age decreased. This finding is reported in Table 8, which examines the percentage of individuals in different age categories who perceived an increase in BEHAV ATTACH from Period 1 to Period 3.

Question 5: Is there a decrease in psychological ties to the community of residence following a period of recession?

Data in Table 9 shows there is a greater percentage of people in Buhl who indicated a decrease in PSY TIES (37 percent), compared to the people who experienced an increase (12 percent). This difference in the change scores for Buhl is verified by the Sign Test ($p < .0001$). The results for Mountain

Table 8
PERCENT INCREASE IN BEHAVIORAL ATTACHMENT
FROM PERIOD 1 TO PERIOD 3
BY COMMUNITY AND BY AGE CATEGORIES

	COMMUNITY	
AGE	Buhl	Mountain Iron
18 - 39	52 %	55 %
(*N*)	(48)	(69)
40 - 64	16	29
(*N*)	(85)	(123)
65 and over	7	27
(*N*)	(56)	(30)

Table 9
PERCENT CHANGE IN PSYCHOLOGICAL TIES
BY COMMUNITY
FROM PERIOD 1 TO PERIOD 3

Change in Psychological Ties to Community: Period 1 to Period 3	COMMUNITY		
	Buhl (1)	Mountain Iron (2)	Total
Decreased	37 %	26 %	32 %
(*N*)	(44)	(32)	(76)
Stayed the Same	51	44	47
(*N*)	(60)	(53)	(113)
Increased	12	30	21
(*N*)	(14)	(36)	(50)
Total	100	100	100
(*N*)	(118)	(121)	(239)
Sign Test (two-tailed) p =	.0001	.716	

Kendall's tau-*c* value = .207

p = .001

Iron, while not significant, show that more people experienced an increase in PSY TIES (30 percent) compared to those who experienced a decrease (26 percent). Kendall's tau-*c* verifies that the association between COMMUNITY and change scores for PSY TIES is significant (p =.001). The computed value for tau-*c* suggests that knowledge of the community of residence increases one's prediction of change scores for PSY TIES by nearly 21 percent (tau-*c* =.207). Thus, the answer to Question 5 is: there is an interaction effect between change scores for PSY TIES and COMMUNITY.

The elaboration analysis of change scores for PSY TIES revealed that in Buhl, PSY TIES decreased as AGE increased. This association was not found in Mountain Iron. Table 10 gives a report of the percentage of individuals in different age categories who perceived a decrease in psychological ties to the community from Period 1 to Period 3.

Table 10
DECREASE IN PSYCHOLOGICAL TIES TO THE COMMUNITY
FROM PERIOD 1 TO PERIOD 3
BY COMMUNITY AND BY AGE CATEGORIES

	COMMUNITY	
AGE	Buhl	Mountain Iron
18 - 39	27 %	26 %
(*N*)	(49)	(66)
40 - 64	39	29
(*N*)	(87)	(94)
65 and over	45	16
(*N*)	(64)	(32)

Table 11
SUMMARY OF CHANGES
FROM PERIOD 1 TO PERIOD 3
FOR STUDY VARIABLES BY COMMUNITY

Study Variables:	Significant ($p \leq .01$) change from Period 1 to Period 3 Based on Sign Test		Is the Change Significantly Different (tau-c $p \leq .01$) Between Communities?
	BUHL	MT IRON	
SERVICES	Decreased	None	Yes
ORIENTATION	Increased	Increased	No
PROBLEMS	Increased *Associated with Younger age groups*	Increased	No
BEHAV ATTACH	None	None	Yes Buhl (slight decrease) *52% of youngest age group, however experienced an increase* Mt. Iron (slight increase) *Somewhat more noticeable in younger age group*
PSY TIES	Decreased *More in older age group*	None	Yes

Summary and Discussion of Findings

Table 11 provides a summary of the changes in values of study variables from Period 1 to Period 3 for the two communities under investigation. The following discussion focuses on two specific findings. One is the discovery that age is specified as a condition affecting change scores for three of the study variables, BEHAV ATTACH, PSY TIES, and PROBLEMS. The second deals with the significant difference found in perceived quality of services between the two communities. In this section it is argued these factors are interrelated.

The elaboration analyses of change scores for BEHAV ATTACH showed that, in both communities, and most notably in Buhl, BEHAV ATTACH decreased as AGE increased. The elaboration analysis of change scores for PSY TIES in Buhl indicated that PSY TIES decreased as AGE increased; however, this pattern was not found in Mountain Iron. These findings are consistent with the tau-c values which were computed in order to detect any association between change scores and COMMUNITY, suggesting that the age distribution of a community may be a factor influencing patterns of interaction.

It is useful at this point to examine the actual age distributions for Buhl and Mountain Iron. Table 12 shows that almost half of the respondents in the Buhl sample are age 60 and over (46 percent), compared to only 26 percent in Mountain Iron. The majority (55 percent) of the Mountain Iron respondents are between the ages of 30 and 50, while only 37 percent of Buhl falls into this category. With the knowledge that age affects both BEHAV ATTACH and PSY TIES, it is therefore no surprize that Buhl, the older of the two communities, showed a decrease in each of these variables.

Table 12
RESPONDENT'S AGE CATEGORY
BY COMMUNITY

	COMMUNITY			
	BUHL		MT IRON	
AGE CATEGORY	(N)	Percent	(N)	Percent
18 - 29	(11)	5 %	(5)	2 %
30 - 39	(47)	20	(71)	29
40 - 49	(40)	17	(65)	26
50 - 59	(29)	12	(43)	17
60 - 69	(58)	25	(40)	16
70 and over	(50)	21	(25)	10
TOTAL	(235)	100	(249)	100

The second point or question that can be raised from the findings refers to the interaction effect between changes in perceived quality of services and the community of residence. Why is there a perceived decrease in the quality of services following a period of recession only in Buhl? It can be argued that although age was not specified as an underlying condition affecting the change scores for SERVICES in Buhl, given the current socioeconomic conditions, age does significantly affect SERVICES. First, it is reasonable to predict that the older the population, the greater the percentage of retired persons. Table 13 shows that 30 percent of respondents living in Buhl are retired, compared to 17 percent in Mountain Iron. Further, the number of persons retired from occupations which served the local community (the last four of the seven categories listed) includes 18 percent of the total sample for Buhl, compared to only 9 percent in Mountain Iron[3].

[3] For a complete description of changes in occupations and social class across the three periods see Appendix G.

Table 13
PERCENTAGE OF RETIRED INDIVIDUALS
CATEGORIZED BY OCCUPATION
AND BY COMMUNITY FOR PERIOD 3

OCCUPATION RETIRED FROM:	COMMUNITY BUHL (N)	Percent	MT IRON (N)	Percent
No Occupation given	(5)	3 %	(7)	3 %
Mining	(18)	27	(12)	5
Railroad	(3)	5		
Local Business	(11)	5	(10)	4
School system	(13)	6	(6)	3
City employee	(9)	4	(1)	-
Medical field	(7)	3	(5)	2
TOTAL RETIRED	(66)	30	(41)	17
TOTAL RESPONDENTS:	(221)		(239)	

Since Buhl is a much smaller community than Mountain Iron, with Mountain Iron being three and a half times larger, the retirement factor can be expected to have an impact on services in Buhl, particularly since there is not a younger population moving in to take over the established services or facilities. Thus, sensibly, there is a relationship between AGE and SERVICES. Buhl's residents are older and retired from managing local establishments, which has led to a decrease in services. Presumably the individuals who are retired from serving the local population are also no longer as involved in community activities and they once were, resulting in a decrease in both behavioral attachment and in psychological ties to the community.

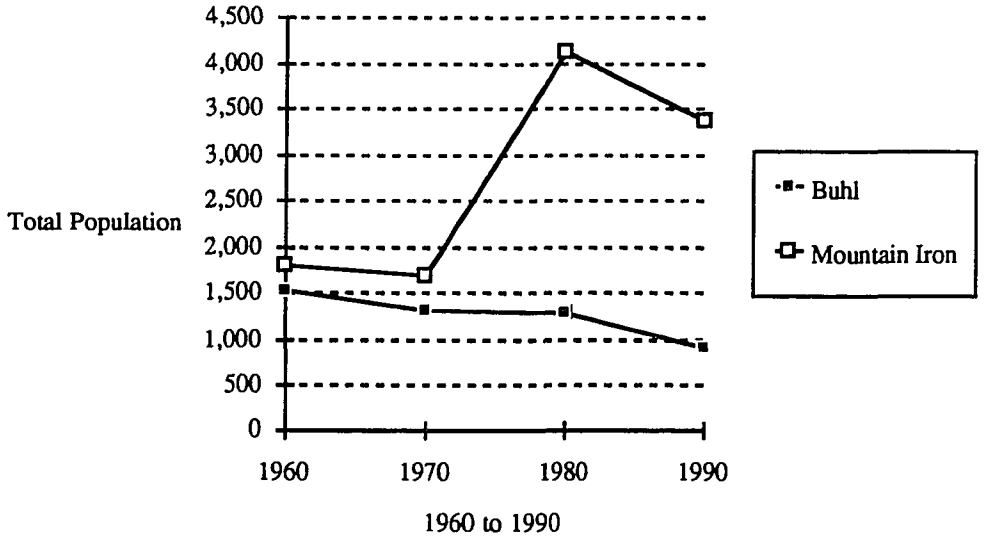
Qualitative Research Findings

The comments that were offered in response to a number of open-ended questions (included in the survey), along with knowledge of the historical geography of the communities under investigation, provides a substantial understanding of the results discussed above. In this last section of the data analysis, qualitative data is used to support these findings.

This study found that Buhl has suffered a significant decline in services since the period before the recession. Reporting on the present condition of Buhl, a local resident wrote, "We have a small town. Within the past seven years we have lost our grocery store, pharmacy, mortuary, hardware store--we're getting to be more like a suburb to neighboring cities." As noted earlier, the decline in services in Buhl can be explained by the fact Buhl's population is older, with a greater percentage of residents retired from local businesses than in Mountain Iron.

The question that remains is: why are young people not attracted to the community of Buhl? Originally, Buhl was built in close proximity to several natural ore mines. When the high grade ore became uneconomical to extract, the mines closed. The population trends shown in Figure 3 indicate that during the 1970s, while Mountain Iron experienced a sizable increase in population, Buhl experienced no growth at all. The reason a large number of people moved into Mountain Iron is because it is very near one of the largest taconite reserves on the range; and, during the 1970s, when the taconite industry was booming, the Minntac Taconite Plant was one of the largest employers. Although Minntac has made cut-backs since the period prior to the recession, they still employ an estimated 1,530 workers (Mountain Iron Community Profile 1991).

Figure 3
POPULATION OF
BUHL AND MOUNTAIN IRON
1960 TO 1990



Psychological ties to the community of Buhl were affected by the recent unsuccessful battle to keep their school open. A retired school teacher and life-long resident of the Iron Range, wrote, "Our school system consolidated with another (little larger) school system which turned out to be different than expected and consequently the citizens of our town are devastated now. When you lose your school you lose the biggest part of your community." Other residents reported, "The changes in the school system have not affected our family because our children are grown and have settled elsewhere. The changes have affected the community, however, economically and in spirit"; "The school was the community's pride and focal point and now it is gone and much of the community spirit is gone as well"; "My children are all bussed out of the community 12 miles to the next town. There is now no longer any binding community source left."

The out-migration of young people and family members further explains a decline in psychological ties in Buhl. A third generation resident of the Iron Range explained, " For us lifetime Rangers in our 40s, Iron Range life has never changed. To live here, we have always had to face job uncertainty and semi-poverty--as our parents did before us. Now we have a very educated work force with virtually no jobs. The saddest fact of all is that we have to lose all our young people to other areas of Minnesota or other states. . . . We have also lost our two closest friends to moves." Another resident associated an increasé in community problems with the loss of family members seeking jobs elsewhere. She wrote, "Many of our friends moved during the recession because of loss of jobs in mining. Also, many families broke up during this period. The subsequent result is single parent households which has caused a serious problem among the present teenagers. Morals have really deteriorated and abuse and drugs have increased."

The results of the survey data analysis indicated both communities experienced a significant increase in orientation toward extracommunity systems. In Buhl, this can be explained by the decline in actual services. Given Mountain Iron did not experience a significant decline in services, why did residents of this community also indicate an increase in orientation toward extracommunity systems? Responses given to the question "How would you describe or define your community?" provide some insight to this question. Residents of Mountain Iron described their community as, "A city spread out with no nucleus of business"; "A geographically fractured community lacking central identity with an economically troubled school district and a damaged local reputation for political infighting, unable to survive as an autonomous entity"; "[Mountain Iron] is much like a suburb of the larger neighboring city, to where townspeople travel for recreation, services and goods"; and, "Split--The city merged with the township--we have ten residential areas spread over 52 square miles within the city. The residents have different P. O. addresses and have different sources of water, electric and sewer service. The original city is half of what it was. The mining company bought in, and the people moved out!"

According to a Duluth mining official, the Minntac Taconite Plant recently expanded the size of the actual mine at Mountain Iron. This required U.S. Steel, the owner of the mining operation, to purchase and remove over 300 homes from a section of the city in order to create a "buffer zone" proximate to blasting activities (Interview data 1991). Given the above comments, this explains much of the reason why Mountain Iron residents show an increased orientation outside their own community.

Chapter Four
PATERNALISM AND CHANGING PATTERNS OF SOCIAL INTERACTION

This research project was designed to examine the effect changes in economic conditions--notably, changes which occurred during the recession of the early 1980s--have had on patterns of social interaction in rural, specifically mining-dependent communities. The previous chapter described and explained the findings related to five research questions derived from the review of literature. Statistical results, and even the subjective views of individuals cannot not be fully understood, however, without reference to the context that gives them meaning. In this final chapter, a more abstract, theoretical interpretation is presented related to paternalism and changing patterns of interaction in mining-dependent communities.

Paternalism and Community Development

Historically, the principle concern of the U.S. steel industry was to maintain a sufficient labor force in order to mine the abundant iron ore resources across Northeastern Minnesota (Berman 1963). Beginning in the late 1880s, steel companies built and controlled hundreds of "locations," which were groupings of residences built on company-owned land within walking distance to the mine sites (Alanen 1982: 95). When union strikes and other labor disturbances threaten the efficiency of the work force the steel companies initiated programs to provide special services to the workers, including health care, pension plans, recreational facilities, and community sanitation and beautification. This approach, which was adapted in the early

1900s, was referred to as "welfare capitalism"--welfare provided by the capitalist (Alanen 1982: 98). As Alanen explains, "... [this] reportedly gave employees greater opportunity to better their own condition, and mining company executives saw this as providing an alternative to what workers and the general public perceived as rather heavy-handed paternalism" (Alanen 1982: 98).

While the "locations" eventually evolved into autonomous communities relatively free of direct company control; the steel companies maintained, indirectly, a paternalistic relationship to the Iron Range communities for decades. Taxes on taconite production helped pay for and maintain schools, medical facilities, recreational areas, and local government, and were used to help offset homeowner property taxes (Oberdorfer 1983).

On one hand, the industry's paternalism nurtured a strong solidarity and homogeneity among Iron Range residents. A survey respondent, who is a fifth-generation resident of the Iron Range, wrote: "Once a ranger, always a ranger. If you don't understand or truly know a ranger, they can be both rough and quiet tempered, even a bit passive. But all in all its family that counts, and if they don't move, they all stay! They are one!" Even the people who originally settled into Babbitt, the youngest company-built town to appear on the range[4], depicted the development of a very *Gemeinschaft*-type of community:

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[4] In 1951 Reserve Mining Company opened a test plant on the northern end of the Mesabi Iron Range, uncovering one of the largest deposits of taconite in northern Minnesota (Babbitt, Minnesota: An Historical Review, 1960: 5). Almost immediately, organizers working for the Reserve Mining Company went to work laying out plans for the modern town of Babbitt, designed expressly for the purpose of housing the necessary work force to operate the mine. A site for the town was selected and everything was preplanned and laid out before actual construction took place. The houses were prefabricated--steel homes brought in and set up in four basic styles. By 1952 eighty new homes were ready for occupancy (Babbitt-Embarras Area Development Association 1983).

> Originally everyone was from somewhere else; many from the south end of the range as well as other parts of the state. All met here as strangers but as they raised families, erected schools, churches, . . . they formed clubs, neighborhoods and recreational activities bonding them into a community, caring and sharing with one another. . . . We didn't come as a family, we came from all over the iron range--anyone wanting to keep the way of life they had in other mining towns and who needed the work. The wages were good. Now we are family--cousins, nieces, nephews, etc. (Interview data 1987).

The recession of the early 1980s, however, took a heavy toll on the steel industry and, in turn, brought great hardship to Minnesota's Iron Range communities. Steel company losses forced massive cut-backs in production, and thousands of individuals were laid off or lost their jobs permanently. Recognizing the collapse of the 1980s was much different than mining slowdowns in the past, a retired railroad yardmaster stated, "It wasn't the steel industry and it wasn't the Unions that triggered the strike in the early 1980s. International trade and competition fell like a ton of bricks at the door of the taconite industry!"

While much of the nation recovered from the recession by the mid-1980s, the steel industry persisted in their efforts to adjust to foreign competition. With a large reserve labor force left on the Iron Range following the recession, and their own vitality threatened, the principle concern of the steel companies shifted from the domestic front to finding ways to compete in the world market. The success of the industry's comeback (the recent increase in demand for Minnesota's taconite) is a direct result of rationalization and concessions by the state. As Marcus and Kirsis (1988) report,

> Production costs in the North American iron ore industry have come down more than 30 percent since the early 1980s. Much of this reduction was achieved by improved labor productivity (up more than 50 percent since 1982) and sizable reductions in energy and material

> costs. There have also been concessions in royalties and state taxes (Marcus and Kirsis 1988: 21).

These actions virtually brought an end to the steel industry's paternalistic role of supporting the mining communities. A resident of Mountain Iron reported, "[since the recession] all charges for essential services have increased--metered water, sewer, garbage collection, etc.. Our tax base has increased somewhat, but it hasn't helped much." Similarly, a Buhl resident wrote, "The effects of the early 1980s are hitting us now. Our savings were wiped out with all the lay-offs. Our children are now entering teen years with no school in our town. Our house won't even sell at market value because the school has closed. We feel trapped in the community where we had hoped was our future. Mining was a devil in disguise. It promised a wonderful future for life on the range--that life was never achieved for us--no security, no savings, no quality education, no rosy future." Acknowledging an era that is in all probability gone, a retired teacher who has lived her entire life on the Iron Range wrote, "Mountain Iron is 100 years old (1990). It has had a wonderful history and nurtured many notable people along with the taconite industry. I don't know what the future will be."

The real downside of industry's ostensible benevolence was that it fostered generations of Iron Range workers who became dependent citizens, and it stifled economic diversification. A third-generation resident of the Iron Range summed up this condition in relatively few words. He described his community as, "single-industry minded, without the open-mindedness to risk ventures in new occupations that might threaten the existing social fabric, hence changing the traditions so dearly desired".

In Weberian terms, paternalism preserved *traditional* patterns of action, which lack any form of rational evaluation. Weber described this form of action as "traditionally oriented, through the habituation of long practice," and considered it least compatible with modern society (Weber [1922] 1947: 115).

Rebuilding Community Structure

This study has found that mining-dependent communities are undergoing a transition in patterns of social interaction--from being very traditional and *Gemeinschaft*-like, to realizing the need for purposive, rational strategies to redevelop community structures. A number of comments provided by survey respondents from Buhl and Mountain Iron depicted a state of anomie and despair; other accounts imparted insights and optimism. For example, an employed teacher who is the third generation of her family to reside on the Iron Range commented, "It's not a very close community any longer. . . . There are factions of interests, not a general cohesiveness." Another respondent characterized his community as, "enmeshed, closed, clannish, with many dysfunctional family systems, . . . [and] state-church attitudes." While others wrote, "There is a need to remove the boundaries of isolation and identity that would permit easier cooperation with the rest of the state"; "We need to put aside the feelings that individual towns cannot maintain their individuality by uniting for the common good. There is no reason that services can't be shared under a 'range' coalition." And finally, "The recession of the 1980s, as well as the boom of the 1970s, brought a new sense of awareness to the range. Community lines have been mixed with common problems. . . communities must now work together for the benefit of all."

In the Twin Cities Public Television broadcast of "Rural Survival: The Spirit Willing," Harry Boyte, author of *Community is Possible: Repairing America's Roots*, talked about the need for a rebirth of citizen responsibility, or what he refers to as the old "common-wealth initiative". He stated, "We need to look at the capabilities communities have within themselves to nurture and support its economic system . . .create a spirit and sense of neighborhood which is the foundation of the state. What is forgotten in the whole process of government-funded assistance programs is the capabilities of the community itself to generate new worth, and to reinforce existing patterns, and involve people" (Minnesota Issues 1987a). Boyte and others who are concerned about the future of the Iron Range communities view government-funded programs as a civilized way to bridge the gap for troubled workers and their families--not as way of life. It will be up to each individual community to find what works for them. The process of economic diversification and rebuilding community structures in Northeastern Minnesota is expected to take a long time, some say as long as 20 years.

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APPENDIX

A. Cover Letters

B. Survey Questionnaire

C. Newspaper Ad

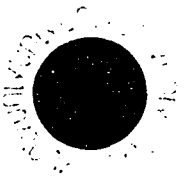
D. Follow-up Post Card

E. Factor Scores

F. Demographic Data

G. Income and Social Class

H. Hollingshead's Occupational Codes



DEPARTMENT OF SOCIOLOGY

UNIVERSITY OF NEVADA, LAS VEGAS
4505 MARYLAND PARKWAY • LAS VEGAS, NEVADA 89154-5033 • (702) 739-3322

Dear Resident of Buhl,

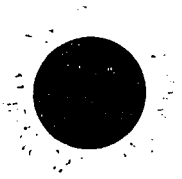
This is a a research project being conducted by Linda Roe at the University of Nevada, Las Vegas. The purpose of the research is to better understand the changes that have taken place in Minnesota's Iron Range communities over the past decade. As you are a current resident of a community located on the Range, I am especially interested in your views and your experiences. Many of the questions call for separate answers for each of three specific periods. I would like for you to try to recall each particular time period, and answer as accurately and honestly as possible.

An addressed stamped envelope is provided for you to return the completed questionnaire. **Return materials are not coded and cannot be linked to you in any way, insuring your answers and comments will remain anonymous.**

Your cooperation in this study is greatly appreciated!

Sincerely,

Linda Roe



DEPARTMENT OF SOCIOLOGY

UNIVERSITY OF NEVADA, LAS VEGAS
4505 MARYLAND PARKWAY • LAS VEGAS, NEVADA 89154-5033 • (702) 739-3322

Dear Resident of Mountain Iron,

This is a continuation of a research project being conducted by Linda Roe at the University of Nevada, Las Vegas. The purpose of the research is to better understand the changes that have taken place in Minnesota's Iron Range communities over the past decade. As you are a current resident of a community located on the Range, I am especially interested in your views and your experiences. Many of the questions call for separate answers for each of three specific periods. I would like for you to try to recall each particular time period, and answer as accurately and honestly as possible.

An addressed stamped envelope is provided for you to return the completed questionnaire. **Return materials are not coded and cannot be linked to you in any way, insuring your answers and comments will remain anonymous.**

Due to a limited research budget, I will not be able to send a follow-up reminder. Thus, I would like to encourage you to take a few minutes now to completed the questionnaire, and to return it at your earliest convenience. *Every response* is significant and important for the success of the study. If you are interested in the compiled results of the study, please drop me a separate note with your address and I would be happy to send you a summary later this spring. Write to:

University of Nevada, Las Vegas
Department of Sociology Att: Linda Roe
4505 Maryland Parkway, Las Vegas, NV 89154

Your cooperation in this study is greatly appreciated!

Sincerely,

Linda Roe

Appendix B

Community Questionnaire

Please answer the following questions as they relate to yourself, or to you and your spouse if you are married.

1. Which of the following best describes the number of years you and your spouse (if applicable) have lived on the Iron Range?

Husband or single male (please check one)	*Wife or single female (please check one)*
1. [ ] Entire life	1. [ ] Entire life
2. [ ] Continuously since 1978 or before	2. [ ] Continuously since 1978 or before
3. [ ] Most years since 1978	3. [ ] Most years since 1978
4. [ ] Other _____	4. [ ] Other _____

2. How many generations of your family, and your spouse's family (if applicable), **including your own generation**, have lived on the Iron Range?

Husband's family or single male: _____ generations *Wife's family or single female:* _____ generations

3. Where did you and your spouse (if applicable) live most of the time while you were growing up?

Husband or single male:	*Wife or single female:*
1. [ ] Farm or open country	1. [ ] Farm or open country
2. [ ] Small town (less than 5,000)	2. [ ] Small town (less than 5,000)
3. [ ] Medium town (5,000 to 10,000)	3. [ ] Medium town (5,000 to 10,000)
4. [ ] Suburb of city	4. [ ] Suburb of city
5. [ ] Small city (10,000 to 50,000)	5. [ ] Small city (10,000 to 50,000)
6. [ ] Large city (over 50,000)	6. [ ] Large city (over 50,000)

4. What is your age, and that of your spouse (if applicable) ?

Husband or single male: _____ *Wife or single female:* _____

5. Family type:

1. [ ] Married couple without children	4. [ ] Single householder
2. [ ] Married couple with children **not** living at home	5. [ ] Single parent with children **not** living at your home
3. [ ] Married couple with children living at home No. of children presently living at home _____	6. [ ] Single parent with children living at your home No. of children presently living at home _____

6. If you are single, what is your marital status? (If you are married, please skip to the next question)

1. [ ] Single (never married) 2. [ ] Separated 3. [ ] Divorced 4. [ ] Widowed

7. Which of the following best describes your highest level of education, and that of your spouse (if you are married) ?

Husband or single male:	*Wife or single female:*
1. [ ] Less than 12 years of school	1. [ ] Less than 12 years of school
2. [ ] High school graduate	2. [ ] High school graduate
3. [ ] Completed a vocational or technical program	3. [ ] Completed a vocational or technical program
4. [ ] Some college	4. [ ] Some college
5. [ ] Bachelor's degree	5. [ ] Bachelor's degree
6. [ ] Master's degree	6. [ ] Master's degree
7. [ ] Law degree	7. [ ] Law degree
8. [ ] Medical degree	8. [ ] Medical degree
9. [ ] Ph.D.	9. [ ] Ph.D.

8. What are the ethnic roots of your family, and your spouse's family (if applicable)? That is, other than American, what national origin do you **most** identify with?

Husband or single male (Please check one)		*Wife or single female (Please check one)*	
1. [ ] Finnish	5. [ ] Slavic	1. [ ] Finnish	5. [ ] Slavic
2. [ ] Swedish	6. [ ] German	2. [ ] Swedish	6. [ ] German
3. [ ] Norwegian	7. [ ] French	3. [ ] Norwegian	7. [ ] French
4. [ ] English	8. [ ] Other_____	4. [ ] English	8. [ ] Other_____

(over)

The following set of questions relate to the period between *1978 and 1980*. Do not be concerned about the exact dates, but rather, try to recall what your life was like during this general period.

9. Did you and your spouse (if applicable) change your place of residence during this time?

1. [ ] No
2. [ ] Yes >>>>> If yes, what type of move(s) did you make? Please indicate the reason for your move.

1st move	*2nd move*
1. [ ] To present location	1. [ ] To present location
2. [ ] To the Range from elsewhere in state	2. [ ] To the Range from elsewhere in state
3. [ ] From Range, to out of state	3. [ ] From Range, to out of state
4. [ ] From Range, to other area of MN.	4. [ ] From Range, to other area of MN.
5. [ ] From one town on Range to another town on the Range	5. [ ] From one town on Range to another town on the Range
Primary reason:	Primary reason:
1. [ ] Job related	1. [ ] Job related
2. [ ] Retirement	2. [ ] Retirement
3. [ ] Marriage	3. [ ] Marriage
4. [ ] Divorce	4. [ ] Divorce
5. [ ] Other _____	5. [ ] Other _____

10. During this period, did any members of your immediate family move away from the Iron Range permanently?

1 [ ] No
2. [ ] Yes >>>>> If yes, please indicate the age of the individual(s) at the time they moved, male or female, and their reason for leaving the area.

Age:	Sex:	Primary reason for leaving: (Please check one for each individual)
____	____	1. [ ] Job related 2. [ ] College 3. [ ] Marriage 4. [ ] Other _____
____	____	1. [ ] Job related 2. [ ] College 3. [ ] Marriage 4. [ ] Other _____
____	____	1. [ ] Job related 2. [ ] College 3. [ ] Marriage 4. [ ] Other _____
____	____	1. [ ] Job related 2. [ ] College 3. [ ] Marriage 4. [ ] Other _____

If you <u>did not</u> live on the Iron Range during this period please skip to question 23.

11. Listed below are facilities and services that are available in most communities. When you think of the range community where you lived **during this period**, how would you have rated these services? Please circle your response.

	Excellent	Better than Average	Average	Below Average	Not Available	Don't Know
Local schools	1	2	3	4	5	6
Parks and playgrounds	1	2	3	4	5	6
Child care facilities	1	2	3	4	5	6
Activities and programs for teenagers	1	2	3	4	5	6
Care for elderly	1	2	3	4	5	6
Crime control (in general)	1	2	3	4	5	6
Municipal improvements	1	2	3	4	5	6

1978 to 1980

12. Where did you utilize the following services (most of the time) **during this period**? Please circle your response.

	In the community where I lived	Within 25 miles	25 to 60 miles away	More than 60 miles away (inc. Duluth)	**Does not apply**
Medical care	1	2	3	4	5
Banking	1	2	3	4	5
Grocery shopping	1	2	3	4	5
Clothes shopping	1	2	3	4	5
Appliance shopping	1	2	3	4	5
Shopping for automobiles or trucks	1	2	3	4	5

13. Where did you participate in the following activities (most of the time) during the period this period?

	In the community where I lived	Within 25 miles	25 to 60 miles away	More than 60 miles away (inc. Duluth)	**Does not apply**
Primary employment	1	2	3	4	5
Attend church	1	2	3	4	5
Recreational activities	1	2	3	4	5
Eating out	1	2	3	4	5

14. Of the following community activities, which would you say you were *very involved in, involved once in a while, or not involved in at all* during this period? Please circle your response.

	Very involved	Involved once in a while	Not involved at all
Informal social clubs (ex. bridge club)	1	2	3
Church and religious activities	1	2	3
Family activities or outings	1	2	3
Annual community celebrations	1	2	3
Charitable organizations	1	2	3
Committees concerned with community affairs	1	2	3

15. How much did you feel that you *belonged to* or *felt at home* in your community during this time?

1. [ ] Very much 2. [ ] Somewhat 3. [ ] Very little

16. Below is a list of things that some families and communities may have problems with. When you think of the community where you lived **during this period**, how much of a problem were these factors? Please circle your response.

	Not a Problem	Slight Problem	Moderate Problem	Serious Problem	**Don't know**
Drug abuse	1	2	3	4	5
Family violence	1	2	3	4	5
Alcohol abuse	1	2	3	4	5
Property crimes	1	2	3	4	5
Violent crimes	1	2	3	4	5

(over)

1978 to 1980

17. Considering all your **relatives and in-laws**, except the very distant ones, what proportion of them would you say lived in the same community as you **during this time**?

1. [ ] All 2. [ ] Most 3. [ ] A few 4. [ ] None

18. Considering all the **friends** that you had during this period, what proportion of them would you say lived in the same community as you?

1. [ ] All 2. [ ] Most 3. [ ] A few 4. [ ] None

19. What was your primary occupation, and that of your spouse (if applicable) during this time? Please check the type of employment and specify position.

Husband or single male:

1. [ ] Mining
2. [ ] Lumbering
3. [ ] Local business
4. [ ] School system
5. [ ] City employee
6. [ ] Medical field
7. [ ] Retired (please specify job & position below)
8. [ ] Not employed (please specify occupation below)
9. [ ] Other _____

Position _____

Wife or single female:

1. [ ] Mining
2. [ ] Lumbering
3. [ ] Local business
4. [ ] School system
5. [ ] City employee
6. [ ] Medical field
7. [ ] Retired (please specify job & position below)
8. [ ] Not employed (please specify occupation below
9. [ ] Other _____

Position _____

20. Of the following types of benefits or services *offered by employers*, which best describes the ones you and your spouse (if applicable), or your community, benefited from during this time? Please check all that apply.

Husband or single male:

1. [ ] Wages met my needs
2. [ ] Provided for my insurance needs
3. [ ] Provided retirement benefits
4. [ ] Provided good benefits overall
5. [ ] The company supported the community by providing a tax base
6. [ ] The company provided services to the community _____
Please specify service(s)

Wife or single female:

1. [ ] Wages met my needs
2. [ ] Provided for my insurance needs
3. [ ] Provided retirement benefits
4. [ ] Provided good benefits overall
5. [ ] The company supported the community by providing a tax base
6. [ ] The company provided services to the community _____
Please specify service(s)

21. What was your family's **primary** and **supplemental** source of income during this period?

Primary income *(Please check one)*	***husband or s.male***	***wife or s.female***
1. Wages, full time job	[ ]	[ ]
2. Wages, part time job(s)	[ ]	[ ]
3. Retirement income	[ ]	[ ]
4. Federal/state assistance	[ ]	[ ]
5. Dividends, interest, rent	[ ]	[ ]

Supplemental income *(Please check one)*	***husband or s.male***	***wife or s.female***
1. Wages, full time job	[ ]	[ ]
2. Wages, part time job(s)	[ ]	[ ]
3. Retirement income	[ ]	[ ]
4. Federal/state assistance	[ ]	[ ]
5. Dividends, interest, rent	[ ]	[ ]
6. NO supplemental income	[ ]	[ ]

22. Which of the following categories best describes the total annual income (prior to taxes) of yourself and the total annual income of your spouse (if applicable) during this time?

Husband or single male:

1. [ ] No income
2. [ ] Less than $7,500
3. [ ] $7,500 to $10,000
4. [ ] $10,001 to $15,000
5. [ ] $15,001 to $20,000
6. [ ] $20,001 to $25,000
7. [ ] $25,001 to $30,000
8. [ ] $30,001 to $40,000
9. [ ] $40,001 to $50,000
10. [ ] More than $50,000

Wife or single female:

1. [ ] No income
2. [ ] Less than $7,500
3. [ ] $7,500 to $10,000
4. [ ] $10,001 to $15,000
5. [ ] $15,001 to $20,000
6. [ ] $20,001 to $25,000
7. [ ] $25,001 to $30,000
8. [ ] $30,001 to $40,000
9. [ ] $40,001 to $50,000
10. [ ] More than $50,000

The following set of questions relate to the period between *1981 and 1983*. Do not be concerned about the exact dates, but rather, try to recall what your life was like during this general period.

23. Did you and your spouse (if applicable) change your place of residence during this time?

1. [ ] No
2. [ ] Yes >>>>> If yes, what type of move(s) did you make? Please indicate the reason for your move.

1st move	*2nd move*
1. [ ] To present location	1. [ ] To present location
2. [ ] To the Range from elsewhere in state	2. [ ] To the Range from elsewhere in state
3. [ ] From Range, to out of state	3. [ ] From Range, to out of state
4. [ ] From Range, to other area of MN.	4. [ ] From Range, to other area of MN.
5. [ ] From one town on Range to another town on the Range	5. [ ] From one town on Range to another town on the Range
Primary reason:	Primary reason:
1. [ ] Job related	1. [ ] Job related
2. [ ] Retirement	2. [ ] Retirement
3. [ ] Marriage	3. [ ] Marriage
4. [ ] Divorce	4. [ ] Divorce
5. [ ] Other _____	5. [ ] Other _____

24. During this period, did any members of your immediate family move away from the Iron Range permanently?

1 [ ] No
2. [ ] Yes >>>>> If yes, please indicate the age of the individual(s) at the time they moved, male or female, and their reason for leaving the area.

Age:	Sex:	Primary reason for leaving: (Please check one for each individual)
____	____	1. [ ] Job related 2. [ ] College 3. [ ] Marriage 4. [ ] Other _____
____	____	1. [ ] Job related 2. [ ] College 3. [ ] Marriage 4. [ ] Other _____
____	____	1. [ ] Job related 2. [ ] College 3. [ ] Marriage 4. [ ] Other _____
____	____	1. [ ] Job related 2. [ ] College 3. [ ] Marriage 4. [ ] Other _____

If you <u>did not</u> live on the Iron Range during this period please skip to question 37.

25. Listed below are facilities and services that are available in most communities. When you think of the range community where you lived **during this period**, how would you have rated these services? Please circle your response.

	Excellent	Better than Average	Average	Below Average	Not Available	Don't Know
Local schools	1	2	3	4	5	6
Parks and playgrounds	1	2	3	4	5	6
Child care facilities	1	2	3	4	5	6
Activities and programs for teenagers	1	2	3	4	5	6
Care for elderly	1	2	3	4	5	6
Crime control (in general)	1	2	3	4	5	6
Municipal improvements	1	2	3	4	5	6

(over)

1981 to 1983

26. Where did you utilize the following services (most of the time) **during this period**? Please circle your response.

	In the community where I lived	Within 25 miles	25 to 60 miles away	More than 60 miles away (inc. Duluth)	Does not apply
Medical care	1	2	3	4	5
Banking	1	2	3	4	5
Grocery shopping	1	2	3	4	5
Clothes shopping	1	2	3	4	5
Appliance shopping	1	2	3	4	5
Shopping for automobiles or trucks	1	2	3	4	5

27. Where did you participate in the following activities (most of the time) during the period this period?

	In the community where I lived	Within 25 miles	25 to 60 miles away	More than 60 miles away (inc. Duluth)	Does not apply
Primary employment	1	2	3	4	5
Attend church	1	2	3	4	5
Recreational activities	1	2	3	4	5
Eating out	1	2	3	4	5

28. Of the following community activities, which would you say you were *very involved in, involved once in a while, or not involved in at all* during this period? Please circle your response.

	Very involved	Involved once in a while	Not involved at all
Informal social clubs (ex. bridge club)	1	2	3
Church and religious activities	1	2	3
Family activities or outings	1	2	3
Annual community celebrations	1	2	3
Charitable organizations	1	2	3
Committees concerned with community affairs	1	2	3

29. How much did you feel that you *belonged to* or *felt at home* in your community during this time?

1. [ ] Very much 2. [ ] Somewhat 3. [ ] Very little

30. Below is a list of things that some families and communities may have problems with. When you think of the community where you lived **during this period**, how much of a problem were these factors? Please circle your response.

	Not a Problem	Slight Problem	Moderate Problem	Serious Problem	Don't know
Drug abuse	1	2	3	4	5
Family violence	1	2	3	4	5
Alcohol abuse	1	2	3	4	5
Property crimes	1	2	3	4	5
Violent crimes	1	2	3	4	5

1981 to 1983

31. Considering all your **relatives and in-laws**, except the very distant ones, what proportion of them would you say lived in the same community as you **during this time**?

1. [ ] All 2. [ ] Most 3. [ ] A few 4. [ ] None

32. Considering all the **friends** that you had during this period, what proportion of them would you say lived in the same community as you?

1. [ ] All 2. [ ] Most 3. [ ] A few 4. [ ] None

33. What was your primary occupation, and that of your spouse (if applicable) during this time? Please check the type of employment and specify position.

Husband or single male:	*Wife or single female:*
1. [ ] Mining	1. [ ] Mining
2. [ ] Lumbering	2. [ ] Lumbering
3. [ ] Local business	3. [ ] Local business
4. [ ] School system	4. [ ] School system
5. [ ] City employee	5. [ ] City employee
6. [ ] Medical field	6. [ ] Medical field
7. [ ] Retired (please specify job & position below)	7. [ ] Retired (please specify job & position below)
8. [ ] Not employed (please specify occupation below)	8. [ ] Not employed (please specify occupation below
9. [ ] Other _____	9. [ ] Other _____
Position _____	Position _____

34. Of the following types of benefits or services *offered by employers*, which best describes the ones you and your spouse (if applicable), or your community, benefited from during this time? Please check all that apply.

Husband or single male:	*Wife or single female:*
1. [ ] Wages met my needs	1. [ ] Wages met my needs
2. [ ] Provided for my insurance needs	2. [ ] Provided for my insurance needs
3. [ ] Provided retirement benefits	3. [ ] Provided retirement benefits
4. [ ] Provided good benefits overall	4. [ ] Provided good benefits overall
5. [ ] The company supported the community by providing a tax base	5. [ ] The company supported the community by providing a tax base
6. [ ] The company provided services to the community _____ *Please specify service(s)*	6. [ ] The company provided services to the community _____ *Please specify service(s)*

35. What was your family's **primary** and **supplemental** source of income during this period?

Primary income (Please check one)	*husband or s.male*	*wife or s.female*
1. Wages, full time job	[ ]	[ ]
2. Wages, part time job(s)	[ ]	[ ]
3. Retirement income	[ ]	[ ]
4. Federal/state assistance	[ ]	[ ]
5. Dividends, interest, rent	[ ]	[ ]

Supplemental income (Please check one)	*husband or s.male*	*wife or s.female*
1. Wages, full time job	[ ]	[ ]
2. Wages, part time job(s)	[ ]	[ ]
3. Retirement income	[ ]	[ ]
4. Federal/state assistance	[ ]	[ ]
5. Dividends, interest, rent	[ ]	[ ]
6. NO supplemental income	[ ]	[ ]

36. Which of the following categories best describes the total annual income (prior to taxes) of yourself and the total annual income of your spouse (if applicable) during this time?

Husband or single male:		*Wife or single female:*	
1. [ ] No income	6. [ ] $20,001 to $25,000	1. [ ] No income	6. [ ] $20,001 to $25,000
2. [ ] Less than $7,500	7. [ ] $25,001 to $30,000	2. [ ] Less than $7,500	7. [ ] $25,001 to $30,000
3. [ ] $7,500 to $10,000	8. [ ] $30,001 to $40,000	3. [ ] $7,500 to $10,000	8. [ ] $30,001 to $40,000
4. [ ] $10,001 to $15,000	9. [ ] $40,001 to $50,000	4. [ ] $10,001 to $15,000	9. [ ] $40,001 to $50,000
5. [ ] $15,001 to $20,000	10. [ ] More than $50,000	5. [ ] $15,001 to $20,000	10. [ ] More than $50,000

(over)

The following set of questions relate to the period between *1987 to the present*. Do not be concerned about the exact dates, but rather, try to recall what your life has been like during this general period.

37. Have you and your spouse (if applicable) changed your place of residence during this time?

1. [ ] No
2. [ ] Yes >>>>> If yes, what type of move(s) did you make? Please indicate the reason for your move.

1st move	*2nd move*
1. [ ] To present location	1. [ ] To present location
2. [ ] To the Range from elsewhere in state	2. [ ] To the Range from elsewhere in state
3. [ ] From Range, to out of state	3. [ ] From Range, to out of state
4. [ ] From Range, to other area of MN.	4. [ ] From Range, to other area of MN.
5. [ ] From one town on Range to another town on the Range	5. [ ] From one town on Range to another town on the Range
Primary reason:	Primary reason:
1. [ ] Job related	1. [ ] Job related
2. [ ] Retirement	2. [ ] Retirement
3. [ ] Marriage	3. [ ] Marriage
4. [ ] Divorce	4. [ ] Divorce
5. [ ] Other _____	5. [ ] Other _____

38. During this period, have any members of your immediate family moved away from the Iron Range permanently?

1 [ ] No
2. [ ] Yes >>>>> If yes, please indicate the age of the individual(s) at the time they moved, male or female, and their reason for leaving the area.

Age:	Sex:	Primary reason for leaving: (Please check one for each individual)
_____	_____	1. [ ] Job related 2. [ ] College 3. [ ] Marriage 4. [ ] Other _____
_____	_____	1. [ ] Job related 2. [ ] College 3. [ ] Marriage 4. [ ] Other _____
_____	_____	1. [ ] Job related 2. [ ] College 3. [ ] Marriage 4. [ ] Other _____
_____	_____	1. [ ] Job related 2. [ ] College 3. [ ] Marriage 4. [ ] Other _____

39. Listed below are facilities and services that are available in most communities. When you think of the range community where you have lived **during this time**, how would you rate these services? Please circle your response.

	Excellent	Better than Average	Average	Below Average	Not Available	Don't Know
Local schools	1	2	3	4	5	6
Parks and playgrounds	1	2	3	4	5	6
Child care facilities	1	2	3	4	5	6
Activities and programs for teenagers	1	2	3	4	5	6
Care for elderly	1	2	3	4	5	6
Crime control (in general)	1	2	3	4	5	6
Municipal improvements	1	2	3	4	5	6

1987 to the present

40. Where have you utilized the following services (most of the time) **during this period**? Please circle your response.

	In the community where I lived	Within 25 miles	25 to 60 miles away	More than 60 miles away (inc. Duluth)	**Does not apply**
Medical care	1	2	3	4	5
Banking	1	2	3	4	5
Grocery shopping	1	2	3	4	5
Clothes shopping	1	2	3	4	5
Appliance shopping	1	2	3	4	5
Shopping for automobiles or trucks	1	2	3	4	5

41. Where have you participated in the following activities (most of the time) during this period?

	In the community where I lived	Within 25 miles	25 to 60 miles away	More than 60 miles away (inc. Duluth)	**Does not apply**
Primary employment	1	2	3	4	5
Attend church	1	2	3	4	5
Recreational activities	1	2	3	4	5
Eating out	1	2	3	4	5

42. Of the following community activities, which would you say you have been *very involved in, involved once in a while, or not involved in at all* during this period? Please circle your response.

	Very involved	Involved once in a while	Not involved at all
Informal social clubs (ex. bridge club)	1	2	3
Church and religious activities	1	2	3
Family activities or outings	1	2	3
Annual community celebrations	1	2	3
Charitable organizations	1	2	3
Committees concerned with community affairs	1	2	3

43. How much did you feel that you *belonged to* or *felt at home* in your community during this time?

1. [ ] Very much 2. [ ] Somewhat 3. [ ] Very little

44. Below is a list of things that some families and communities may have problems with. When you think of the community where you have lived **during this period**, how much of a problem have these factors been? Please circle your response.

	Not a Problem	Slight Problem	Moderate Problem	Serious Problem	Don't know
Drug abuse	1	2	3	4	5
Family violence	1	2	3	4	5
Alcohol abuse	1	2	3	4	5
Property crimes	1	2	3	4	5
Violent crimes	1	2	3	4	5

(over)

1987 to the present

45. Considering all your **relatives and in-laws**, except the very distant ones, what proportion of them would you say lived in the same community as you during this time?

1. [ ] All 2. [ ] Most 3. [ ] A few 4. [ ] None

46. Considering all the **friends** that you have had during this period, what proportion of them would you say live in the same community as you?

1. [ ] All 2. [ ] Most 3. [ ] A few 4. [ ] None

47. What has been your primary occupation, and that of your spouse (if applicable) during this time? Please check the type of employment and specify position.

Husband or single male:

1. [ ] Mining
2. [ ] Lumbering
3. [ ] Local business
4. [ ] School system
5. [ ] City employee
6. [ ] Medical field
7. [ ] Retired (please specify job & position below)
8. [ ] Not employed (please specify occupation below)
9. [ ] Other _____

Position _____

Wife or single female:

1. [ ] Mining
2. [ ] Lumbering
3. [ ] Local business
4. [ ] School system
5. [ ] City employee
6. [ ] Medical field
7. [ ] Retired (please specify job & position below)
8. [ ] Not employed (please specify occupation below
9. [ ] Other _____

Position _____

48. Of the following types of benefits or services *offered by employers*, which best describes the ones you and your spouse (if applicable), or your community, have benefited from during this time? Please check all that apply.

Husband or single male:

1. [ ] Wages met my needs
2. [ ] Provided for my insurance needs
3. [ ] Provided retirement benefits
4. [ ] Provided good benefits overall
5. [ ] The company supported the community by providing a tax base
6. [ ] The company provided services to the community _____
Please specify service(s)

Wife or single female:

1. [ ] Wages met my needs
2. [ ] Provided for my insurance needs
3. [ ] Provided retirement benefits
4. [ ] Provided good benefits overall
5. [ ] The company supported the community by providing a tax base
6. [ ] The company provided services to the community _____
Please specify service(s)

49. What has been your family's **primary** and **supplemental** source of income during this period?

Primary income (Please check one)	***husband or s.male***	***wife or s.female***
1. Wages, full time job	[ ]	[ ]
2. Wages, part time job(s)	[ ]	[ ]
3. Retirement income	[ ]	[ ]
4. Federal/state assistance	[ ]	[ ]
5. Dividends, interest, rent	[ ]	[ ]

Supplemental income (Please check one)	***husband or s.male***	***wife or s.female***
1. Wages, full time job	[ ]	[ ]
2. Wages, part time job(s)	[ ]	[ ]
3. Retirement income	[ ]	[ ]
4. Federal/state assistance	[ ]	[ ]
5. Dividends, interest, rent	[ ]	[ ]
6. NO supplemental income	[ ]	[ ]

50. Which of the following categories best describes the total annual income (prior to taxes) of yourself and the total annual income of your spouse (if applicable) during this time?

Husband or single male:

1. [ ] No income
2. [ ] Less than $7,500
3. [ ] $7,500 to $10,000
4. [ ] $10,001 to $15,000
5. [ ] $15,001 to $20,000
6. [ ] $20,001 to $25,000
7. [ ] $25,001 to $30,000
8. [ ] $30,001 to $40,000
9. [ ] $40,001 to $50,000
10. [ ] More than $50,000

Wife or single female:

1. [ ] No income
2. [ ] Less than $7,500
3. [ ] $7,500 to $10,000
4. [ ] $10,001 to $15,000
5. [ ] $15,001 to $20,000
6. [ ] $20,001 to $25,000
7. [ ] $25,001 to $30,000
8. [ ] $30,001 to $40,000
9. [ ] $40,001 to $50,000
10. [ ] More than $50,000

The following questions refer to how you feel about your community at the present time. Please answer as honestly as possible.

51. Of the following levels of organization, that is, at a local, regional, state, and federal level, how would you rate each of them in terms of their efforts to improve the economy in your city? Please circle your response.

	Excellent	Good	Fair	Poor	Don't know
Local government participation in efforts to improve local economy	1	2	3	4	5
Local citizen participation in efforts to improve local economy	1	2	3	4	5
Regional efforts to improve local economy	1	2	3	4	5
State government's participation in efforts to improve local economy	1	2	3	4	5
Federal government's participation in efforts to improve local economy	1	2	3	4	5

52. In your opinion, what are the three most important problems facing Iron Range communities today?

1st most important _____

2nd most important _____

3rd most important _____

53. In your own words, what would be the best way to deal with these problems?

_____

_____

_____

In this last section are questions asking how you feel about the future of your community. Please answer as honestly as possible.

54. Thinking ahead to the next 5 years, do you expect your community to become:

1 [ ] More desirable as a place to live
2 [ ] Less desirable as a place to live
3 [ ] I expect it will stay about the same

55. When you think of the community where you presently live, how much of a benefit or detriment do you think the following factors are to the future of your community? Please circle your response.

	Very Beneficial	Somewhat Beneficial	Of little Benefit	Detrimental	Don't know
Community leadership	1	2	3	4	5
Citizen participation in local government	1	2	3	4	5
Availability of good jobs	1	2	3	4	5
Willingness of residents to work for wages below union scale	1	2	3	4	5
Unions	1	2	3	4	5
Distance from major urban center	1	2	3	4	5

(over)

56. Within the next 5 years or so, how likely is it that you will make investments in Iron Range communities, that is, that you would buy another home, business, or property if you had the money to do so? Would you say you would:

1 [ ] Definitely invest
2 [ ] Probably invest
3 [ ] Probably **not** invest
4 [ ] Definitely **not** invest
5 [ ] Don't know

57. How long do you believe the taconite industry will remain a viable industry and major employer on the Range? Please check your response.

1. [ ] Indefinitely 2. [ ] At least 20 years 3. [ ] Less than 20 years 4. [ ] Less than 10 years

58. Thinking ahead to the next 5 years or so, how likely is it that you will move away from the Iron Range? Would you say you will:

1 [ ] Definitely move >>>>>>>
2 [ ] Probably move >>>>>>>
3 [ ] Probably **not** move
4 [ ] Definitely **not** move
5 [ ] Don't know

Where do you think you will/may move? _____
Why do you think you will/may move?
Primary reason:
1. [ ] Job related
2. [ ] Retirement
3. [ ] Marriage
4. [ ] Divorce
5. [ ] Other _____

59. In your own words, how would you describe or define your community?

_____
_____
_____

60. Since the early 1980s, how have changes in the local school system affected you or your family, and your community?

_____
_____
_____

61. I realize there may be issues or factors that have not been covered in this questionnaire which are essential to providing a full description of how the lives of Iron Range residents have changed since the recession of the early 1980s. Please consider for a moment the changes in managing your household, or in how you plan for the future, for example, and note your comments below. If you need additional space, you may continue on a separate sheet and return it with the questionnaire.

_____
_____
_____
_____
_____

***Thank you** for your participation!*

Appendix C

IRON RANGE COMMUNITY STUDY
The town of Buhl has been selected as the site of a community study to be conducted by Linda Roe from the University of Nevada, Las Vegas. The purpose of this research is to better understand the social and economic changes that have taken place in Minnesota's Iron Range communities over the past decade. During the first week of March, residents of Buhl will receive a mailed questionnaire as part of this study. I would like to encourage you to take a few minutes to complete and return the questionnaire. Every response is significant and important for the success of the study.
I would also like to thank the individuals from neighboring towns who participated in an earlier part of the study. Your answers and comments have been valuable contributions to this research. --Linda Roe
Department of Sociology, UNLV 89154

Appendix D

Dear Resident of Buhl,

This note is to thank those of you who have returned the community questionnaire which I mailed out to you during the first week of March. Your answers and comments have made a *meaningful contribution* to this research. Many of you inquired about obtaining a copy of the compiled results. Please drop me a card with your address and I would be happy to send you a summary. For those of you who have not yet returned the completed questionnaire, I would like to encourage you to take a few minutes to do so. Every response is significant and important for the success of the study. If you no longer have a copy of the questionnaire and would like to participate in the study, please contact me by mail at the following address:

Thank you!

Linda Roe

University of Nevada, Las Vegas
Department of Sociology Attention: Linda Roe
4505 Maryland Parkway, Las Vegas, Nevada 89154

Appendix E

Results of Factor Analysis, zero factor loading .30			
BUHL, Minnesota			
	1978-1980	*1981-1983*	*1987-1990*
SERVICES	Factor 3 10%	Factor 2 11.5%	Factor 1 18.3%
Parks and playgrounds	0.74723	0.81129	0.82229
Programs for teenagers	0.7388	0.74305	0.81624
Child care	0.70925	0.61391	0.78961
Care for the elderly	0.64949	0.60533	0.75017
Local schools	0.55425	0.65074	0.56657
Municiple improvements	0.52254	0.55516	0.62976
Crime control	0.35114	0.58167	0.61202
ORIENTATION	Factor 2 14.3%	Factor 4 7.3%	Factor 4 9.4%
Appliance shopping	0.83538	0.77384	0.78759
Grocery shopping	0.80867	0.59728	0.36853
Clothes shopping	0.67315	0.50658	0.71244
Eating out	0.655	0.73311	0.64506
Medical care	0.6352	0.32321	0.4434
Shopping for automobiles	0.38265	0.57475	0.59114
Recretional activities	0.34827	0.45544	0.49573
PROBLEMS	Factor 1 16.1%	Factor 1 20.7%	Factor 2 11.8%
Family violence	0.82668	0.86704	0.8759
Drug abuse	0.78817	0.73164	0.77839
Property crimes	0.75237	0.79503	0.71929
Alcohol abuse	0.72511	0.81549	0.81534
Violent crimes	0.55189	0.58071	0.66503
BEHAV ATTACH	Factor 4 7.1%	Factor 3 9.0%	Factor 3 9.8%
Charitable organizations	0.75364	0.70103	0.7629
Community celebrations	0.73581	0.76431	0.75446
Community affairs	0.70638	0.679	0.73246
Social clubs	0.58601	0.48813	0.61968
Church and religious	0.5337	0.56913	0.53866

Results of Factor Analysis, zero factor loading .30			
MOUNTAIN IRON, Minnesota			
	1978-1980	*1981-1983*	*1987-1990*
SERVICES	FACTOR 1 15.2%	FACTOR 2 12.7%	FACTOR 1 16.5%
Local schools	0.56654	0.43695	0.61262
Crime control	0.58982	0.46442	0.59274
Child care	0.6176	0.65539	0.70867
Care for the elderly	0.65142	0.55252	0.55757
Municiple improvements	0.73076	0.7126	0.74405
Parks and playgrounds	0.74307	0.72148	0.70189
Activities for teenagers	0..63687	0.69378	0.60648
ORIENTATION	FACTOR 2 12.1%	FACTOR 3 10.7	FACTOR 4 8.4%
Medical care	0.38964	0.53238	0.59305
Recreational activities	0.47415	0.49543	0.60118
Grocery shopping	0.57869	0.57335	0.60456
Automobile shopping	0.58619	0.46079	0.60118
Eating out	0.77465	0.62706	0.70974
Clothes shopping	0.82367	0.74326	0.69757
Appliance shopping	0.83753	0.76451	0.72159
PROBLEMS	FACTOR 3 10.6%	FACTOR 1 14.2%	FACTOR 2 13.0%
Violent crimes	0.5856	0.78167	0.76628
Property crimes	0.70594	0.78041	0.77271
Alcohol abuse	0.73576	0.68424	0.77727
Family violence	0.7489	0.77861	0.80866
Drug abuse	0.75161	0.78508	0.78027
BEHAV ATTACH	FACTOR 4 9.0%	FACTOR 4 7.9%	FACTOR 3 11.0%
Social clubs	0.33986	Does not load	0.53931
Church and religious	0.63734	0.68254	0.57516
Community celebrations	0.74048	0.62964	0.73871
Community affairs	0.74048	0.74777	0.76451
Charitable organizations	0.7496	0.67736	0.71707

Appendix F

Demographic Data

Length of time spent living on the Iron Range

BUHL	Male	Female	Total	%
Entire life	90	79	169	68%
Since 1978 or before	23	30	53	21%
Most years since 1978	5	9	14	6%
Other	7	5	12	5%
			248	100%

MOUNTAIN IRON	Male	Female	Total	%
Entire life	76	66	141	56%
Since 1978 or before	38	51	89	36%
Most years since 1978	8	7	16	6%
Other	3	1	4	2%
			250	100%

Generations of family who have lived on the Iron Range

BUHL	Male	Female	Total	%
1 generation	10	17	27	12%
2 generations	37	34	71	32%
3 generations	45	48	93	42%
4 generations	17	10	27	12%
5 generations	0	2	2	1%
			220	100%
		Average=	2.57	

MOUNTAIN IRON	Male	Female	Total	%
1 generation	28	29	57	24%
2 generations	26	27	53	22%
3 generations	49	44	93	39%
4 generations	12	14	26	11%
5 generations	3	4	7	3%
			236	100%
		Average=	2.46	

Place lived while growing up

BUHL	Male	Female	Total	%
Farm or open country	25	31	56	22%
Small town	81	62	143	57%
Medium town	13	19	32	13%
Suburb of city	1	0	1	0%
Small city	2	8	10	4%
Large city	1	6	7	3%
			249	100%

MOUNTAIN IRON	Male	Female	Total	%
Farm or open country	22	22	44	18%
Small town	54	47	101	41%
Medium town	22	19	41	17%
Suburb of city	2	3	5	2%
Small city	14	18	32	13%
Large city	8	13	21	9%
			244	100%

Age of Respondents

BUHL	Male	Female	Total	%
18 - 29	5	6	11	5%
30 - 39	22	25	47	20%
40 - 49	24	16	40	17%
50 - 59	12	17	29	12%
60 - 69	27	31	58	25%
70 - 79	22	28	50	21%
			235	100%
	Male	Female		
Average age =	56.3	55.2		

MOUNTAIN IRON	Male	Female	Total	%
18 - 29	3	2	5	2%
30 - 39	31	40	71	29%
40 - 49	36	29	65	26%
50 - 59	20	23	43	17%
60 - 69	22	18	40	16%
70 - 79	12	13	25	10%
			249	100%
	Male	Female		
Average age =	50.2	48.6		

Ethnicity

BUHL	Male	Female	Total	%
Finnish	26	13	39	16%
Swedish	4	8	12	5%
Norwegian	7	7	14	6%
English	6	4	10	4%
Slavic	38	39	77	31%
German	7	11	18	7%
French	1	2	3	1%
Italian	6	13	19	8%
Other	28	27	55	22%
			247	100%

MOUNTAIN IRON	Male	Female	Total	%
Finnish	25	24	49	20%
Swedish	8	14	22	9%
Norwegian	8	13	21	9%
English	5	4	9	4%
Slavic	21	18	39	16%
German	9	14	23	9%
French	4	6	10	4%
Italian	19	10	29	12%
Other	24	20	44	18%
			246	100%

Level of Education

BUHL	Male	Female	Total	%
Less than 12 years	21	14	35	15%
High school graduate	40	59	99	42%
Some college	35	29	64	27%
Bachelor's degree	10	20	30	13%
Graduate degree	9	1	10	4%
			238	100%
Vocational or technical training	23	21	44	18%

MOUNTAIN IRON	Male	Female	Total	%
Less than 12 years	7	8	15	6%
High school graduate	50	64	114	46%
Some college	36	28	64	26%
Bachelor's degree	22	21	43	17%
Graduate degree	9	3	12	5%
			248	100%
Vocational or technical training	35	26	61	25%

Family type

BUHL	Total	%
Married without children	5	4%
Married, no children at home	52	37%
Married with children at home	37	27%
Single householder	29	21%
Single parent, no children at home	13	9%
Single parent with children at home	3	2%
	139	100%
Marital status of single respondents	**Total**	**%**
Single	14	31%
Seperated	1	2%
Divorced	5	11%
Widowed	25	56%
	45	100%

MOUNTAIN IRON	Total	%
Married without children	7	5%
Married, no children at home	40	29%
Married with children at home	64	46%
Single householder	13	9%
Single parent, no children at home	6	4%
Single parent with children at home	8	6%
	138	100%
Marital status of single respondents	**Total**	**%**
Single	7	26%
Seperated	1	4%
Divorced	14	52%
Widowed	5	19%
	27	100%

Appendix G

INCOME

Buhl

	1978-1980				1981-1983				1987-1990			
	Male		Female		Male		Female		Male		Female	
No income	1	1%	31	28%	1	1%	32	31%	2	2%	23	21%
Less than $7,500	9	8%	41	37%	10	10%	33	32%	8	7%	40	36%
$7,500 to $10,000	7	7%	10	9%	7	7%	9	9%	10	9%	15	14%
$10,001 to $15,000	13	12%	11	10%	11	11%	12	12%	20	18%	11	10%
$15,001 to $20,000	24	22%	4	4%	19	18%	7	7%	11	10%	10	9%
$20,001 to $25,000	27	25%	9	8%	22	21%	6	6%	16	14%	1	1%
$25,001 to $30,000	16	15%	3	3%	23	22%	4	4%	22	20%	7	6%
$30,001 to $40,000	11	10%	1	1%	9	9%			17	15%	4	4%
$40,001 to $50,000					1	1%			4	4%		
More than $50,000									1	1%		
Total:	108		110		103		103		111		111	

Mountain Iron

	1978-1980				1981-1983				1987-1990			
	Male		Female		Male		Female		Male		Female	
No income			37	33%			36	32%			21	18%
Less than $7,500	5	4%	26	23%	8	7%	33	29%	5	4%	29	25%
$7,500 to $10,000	3	3%	16	14%	9	8%	11	10%	4	3%	14	12%
$10,001 to $15,000	5	4%	13	11%	7	6%	11	10%	13	11%	9	8%
$15,001 to $20,000	22	19%	8	7%	18	15%	12	11%	12	10%	19	17%
$20,001 to $25,000	41	35%	8	7%	28	24%	6	5%	21	17%	15	13%
$25,001 to $30,000	24	20%	4	4%	23	20%	2	2%	21	17%	3	3%
$30,001 to $40,000	15	13%	2	2%	20	17%	3	3%	26	22%	3	3%
$40,001 to $50,000	1	1%			2	2%			16	13%	1	1%
More than $50,000	2	2%			2	2%			3	3%	1	1%
Total:	118		114		117		114		121		115	

SOCIAL CLASS

BUHL

	1978-1980				1981-1983				1987-1990			
CLASS*	Male		Female		Male		Female		Male		Female	
HI I	2	2%			3	3%			3	3%		
II	6	6%	4	4%	7	7%	4	4%	5	5%	7	6%
III	40	39%	32	29%	33	32%	29	27%	34	32%	26	23%
IV	26	25%	17	15%	24	24%	14	13%	21	20%	17	15%
LO V	8	8%	32	29%	6	6%	31	29%	1	1%	29	25%
Total employed:	82	80%	85	77%	73	72%	78	74%	64	60%	79	69%
RETIRED												
No position given			3	3%	1	1%	3	3%	2	2%	3	3%
Mining	7	7%			10	10%			18	17%		
Lumbering	1	1%			1	1%						
Local Business	4	4%	4	4%	4	4%	5	5%	6	6%	5	4%
School system	2	2%	4	4%	2	2%	4	4%	4	4%	9	8%
Govmnt. employee	3	3%	1	1%	3	3%	1	1%	5	5%	4	3%
Medical field			3	3%			4	4%			7	6%
Railroad	1	1%			2	2%			3	3%		
Total retired:	18	17%	15	14%	23	23%	17	16%	38	36%	28	24%
UNEMPLOYED												
No position given	3	3%	10	9%	3	3%	8	8%			7	6%
Mining					2	2%						
Lumbering												
Local Business					1	1%	2	2%				
School system												
Govmnt. employee												
Medical field			1	1%			1	1%			1	1%
Total unemployed:	3	3%	11	10%	6	6%	11	10%			8	7%
DISABLED									4	4%		
Total respondents	103		111		102		106		106		115	

**Hollingshead's two-factor index (occupation and education) is used to compute class.*

SOCIAL CLASS

MOUNTAIN IRON

	1978-1980				1981-1983				1987-1990			
CLASS*	Male		Female		Male		Female		Male		Female	
HI I	4	3%			3	3%			4	3%		
II	12	10%	11	9%	12	11%	14	12%	7	6%	15	13%
III	56	48%	42	36%	52	46%	45	39%	53	45%	51	43%
IV	36	31%	17	15%	32	28%	17	15%	25	21%	11	9%
LO V			29	25%			25	22%			28	23%
Total employed:	108	93%	99	85%	99	87%	101	88%	89	75%	105	88%
RETIRED												
No position given			3	3%			3	3%	1	1%	6	5%
Mining	3	3%			6	5%			12	10%		
Lumbering												
Local Business	2	2%	2	2%	1	1%	1	1%	7	6%	3	3%
School system			1	1%			1	1%	4	3%	2	2%
Govmnt. employee												
Medical field			1	1%			1	1%			1	1%
Railroad	2	2%			3	3%			5	4%		
Total retired:	7	6%	7	6%	10	9%	6	5%	29	24%	12	10%
UNEMPLOYED												
No position given			7	6%			6	5%			1	1%
Mining					3	3%						
Lumbering												
Local Business	1	1%	1	1%	1	1%	1	1%			1	1%
School system			1	1%			1	1%			1	1%
Govmnt. employee												
Medical field												
Total unemployed:	1	1%	9	8%	4	4%	8	7%			3	3%
DISABLED			2		1				1	1%		
Total respondents	116		117		114		115		119		120	

**Hollingshead's two-factor index (occupation and education) is used to compute class.*

Appendix H

Occupational Coding Scheme

5 01 Mining (no position given)

5	11	Miner--blaster, laborer	1	17	engineer, geologist (college graduate)
4	12	foreman, supervisor, plant operator	6	18	truck driver
5	13	mechanic, electrician, millwright, tinsmith	4	19	locomotive operator or engineer
4	14	office worker	5	21	electronic technician
4	15	lab analyst	3	22	surveyor, planning engineer
5	16	heavy equipment operator	3	23	purchasing agent

4 03 Local business or service (no position given)

2	25	Accountant (not a CPA)	1	91	lawyer
4	27	Bank teller	1	92	judge
3	28	Semiprofessional--c. artist, piano teacher	5	94	construction
1	29	Accountant (CPA)	4	10	railroad conductor
4	31	self employed	7	20	babysitting, child care
7	32	waitress, waiter, bar tender	1	30	clergy
4	34	secretary, office worker, retail sales, clerk	7	40	laborer
3	35	supervisor, manager, RR dispatcher	3	50	travel consultant
3	36	owner, small cafe or gift shop	3	60	insurance agent
3	37	credit mger, data processor, purchasing agent	1	70	engineer or architect (college graduate)
7	38	laundry work, custodian	3	80	service representative
5	39	skilled manual employees--printer, barber, mechanic, electrician, RR carman inspector	6	90	truck driver, bus driver

4 04 School system (no position given)

4	41	office worker	7	45	maintenance
2	42	teacher	2	46	librarian
2	43	principle	6	47	teacher's aid
6	44	cook	2	48	Nurse (RN)
			6	49	bus driver

4	**05**	**City, county, state or federal employee (no position given)**			
5	51	police officer	2	58	social worker (college degree)
1	52	engineer (college graduate)	4	59	foreman
2	53	postmaster	3	93	deputy sheriff
4	54	city clerk, clerical	1	95	attorney
5	55	electrician	1	96	auditor
5	56	equipment operator	4	97	director, supervisor, inspector
1	57	geologist, forester	4	24	technician
4	**06**	**Medical field (no position given)**			
5	26	Nurse (LPN)	1	65	M.D
6	61	Nurse's aid	7	66	maintenance
2	62	Nurse (RN)	4	67	record keeper, office worker
4	63	technician	1	68	dentist
5	64&33	home health care	2	69	mental health clinic worker (c. degree)
20	**07**	**Retired (no position given)**			
25	71	Retired from mining	50	76	retired from medical field
30	72	Retired from lumbering	55	77	retired from railroad
35	73	Retired from local business	35	78	retired from purchasing agent
40	74	Retired from school system	35	79	retired-- factory, mechanic, carpenter
45	75	Retired government employee			
60	**08**	**Not employed (no position given)**			
65	81	unemployed, mining	90	86	unemployed, medical field
70	82	unemployed, lumbering	60	87	STUDENT
75	83	unemployed, local business	95	88	DISABLED
80	84	unemployed, school system	7	89	unemployed, HOUSEWIFE
85	85	unemployed, government employee			
7	**09**	**Housewife (written in for "other")**		99	Deceased