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THE IMPACT OF RESOURCE DEVELOPMENT ON
INDIVIDUAL AND FAMILY WELL-BEING

by

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for

Alberta Oil Sands
Environmental Research Program

HE 1.2.1

June 1979

The Hon. John W. (Jack) Cookson
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222 Legislative Building
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and

The Hon. John Fraser
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Sirs:

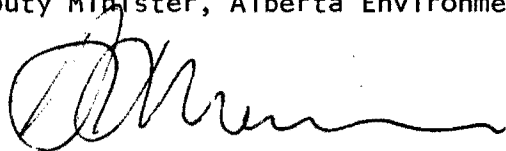
Enclosed is the report "The Impact of Resource Development on Individual and Family Well-Being".

This report was prepared for the Alberta Oil Sands Environmental Research Program, through its Human Environment Technical Research Committee (now the Human System), under the Canada-Alberta Agreement of February 1975 (amended September 1977).

Respectfully,



W. Solodzuk P. Eng.
Chairman, Steering Committee, AOSERP
Deputy Minister, Alberta Environment



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Member, Steering Committee, AOSERP
Regional Director-General
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THE IMPACT OF RESOURCE DEVELOPMENT ON
INDIVIDUAL AND FAMILY WELL-BEING

DESCRIPTIVE SUMMARY

BACKGROUND AND PERSPECTIVE

This report represents one of the initial exploratory studies undertaken in 1976, to determine the parameters of and the appropriate methods for research on the social impacts of oil sands development in the AOSERP study area. As a preliminary step towards the clarification of the conceptual and empirical issues involved in the relationship between rapid resource development and individual and family well-being, the available published and unpublished literature as well as various statistical data sources are reviewed. This study does not attempt to collect new data or to fully explicate statistical data available at the time in either an unpublished or unanalyzed form.

Several issues are explored: the influence of marriage and family on employment patterns and life satisfaction in resource communities; the factors involved in geographical mobility of people; the general characteristics of resource communities; the culture and problems of native peoples affected by resource development; and a summary of relevant statistical and qualitative data available for the Fort McMurray area. One of the major tasks of this study is to interrelate these issues to help explain the quality of life aspects in areas of rapid development. This involves an analysis of relevant theoretical traditions in explaining individual and family adjustment to transition and change, and the development of a "suggestive" theoretical model encompassing the variables pertinent to intra-family, family-work and family-community relationships. The report identifies relevant concerns in conceptualizing and conducting research in the Fort McMurray area, proposes a research design and includes recommendations for future research.

ASSESSMENT

The report entitled "The Impact of Resource Development on individual and Family Well-Being" was prepared by Dr. Lyle E. Larson, Director of Family Research and Consulting Limited. The existing information on the subject of human well-being in resource communities in general and in the ASOERP study area in particular has been extensively documented. The study points out the gaps in knowledge related to social impacts of resource development. While many studies have been conducted to describe social problems in resource towns, there are virtually no studies that, by means of systematic scientific research, have explained why these problems tend to occur. The author presents several serious deficiencies in the research data available at the time, such as imprecise measurements and insufficient theoretical frameworks, and recommends possible solutions. These recommendations have been greatly influential in shaping the current research program of the Human System of ASOERP.

The report does not necessarily reflect the views of Alberta Environment, Fisheries and Environment Canada, or the Oil Sands Environmental Study Group. This report will be given a limited distribution in designated libraries, and the Alberta Oil Sands Environmental Research Program thanks Dr. Larson for his fine contribution.



S.B. Smith, Ph.D
Program Director



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ABSTRACT

The purpose of this study is to identify and integrate information on the relationships between rapid development and family and individual adjustment to that development in the Athabasca oil sands region. This study does not attempt to correct new data, rather it explores several issues on the basis of available data. These issues include: the influence of marriage and family on employment patterns and satisfaction; geographic mobility; and problems with native peoples. Reviews of these topic areas are presented in this report.

Data were obtained from government libraries, university libraries, consulting firms, and from unpublished sources. A theoretical model and research design are proposed for conducting future research in the Fort McMurray area.

ACKNOWLEDGEMENTS

I have appreciated the interest and financial support of the Alberta Oil Sands Environmental Research Program. The opportunity to review this literature has been a rewarding and informing experience. The task, however, was not as modest as originally supposed. Indeed, there have been long and grueling hours spent in examining thousands of pages. The scope of the task far exceeded my predictions and, all too frequently, my level of tolerance. The support of the Program, even though this report has been submitted beyond the contract deadline, has been appreciated.

This project would not have been possible or successful without the excellent research assistance of Elaine Ouimet, the unusual co-operation of several competent government librarians, and the dedicated effort of the typist, Shirley Charlton.

It may be emphasized that this report has not been the benefactor of the incisive and insightful skills of scholarly critique. I must assume full responsibility for the relative accuracy and quality of this work. The analysis and conclusions reflect my best judgment of the issues and implications at this point in my understanding.

This research project HE 1.2.1 was funded by the Alberta Oil Sands Environmental Research Program, a joint Alberta-Canada research program established to fund, direct, and co-ordinate environmental research in the Athabasca Oil Sands area of north-eastern Alberta.

1. INTRODUCTION

This report is prepared at the request of the Alberta Oil Sands Environmental Research Program (AOSERP). It summarizes and integrates existing conceptual and empirical data on family and individual aspects of rapid development. Based on the terms of reference this study does not attempt to collect new data or to fully explicate all statistical data available in either an unpublished or unanalyzed form.

1.1 PURPOSE

The purpose of this study is to identify and integrate, insofar as possible, the conceptual and empirical issues involved in the relationship between rapid development in the Athabasca Oil Sands area and family and individual adjustment among both natives and migrants. It is assumed that this is a fundamental question, providing a basic focus for an assessment of social impact. Specifically, several interrelated issues are explored:

1. In what ways do the various attributes of marriage and family life influence employment patterns and satisfaction in resource communities? Similarly, in what ways do the demands of the work place and the characteristics of resource communities influence marriage and family relationships?
2. What are the basic factors involved in pre- and post-residential and geographical mobility? Why do people move? What causes them to stay in a new area? What factors facilitate adjustment in new communities? What is the relationship between geographical mobility and mental health? Although these factors are typically addressed with respect to individuals, it may be demonstrated that these issues are directly related to marriage and family adjustment.
3. Resource communities represent a particular set of characteristics and problems to both migrants and

natives. Accordingly, it is essential to establish what is and what is not known about the general problems and opportunities in oil and gas exploration areas.

4. Given the fact that much of the rapid development in Canada is occurring in areas where natives have been established for several generations, it is essential to establish something of the culture and problems of native peoples as it affects and is affected by energy exploration.

5. Identify and summarize the relevant statistical and qualitative data available for the Fort McMurray area. Determine the state of knowledge, relevant services to family well-being, and basic issues and areas of study which are yet inadequately explored.

6. Based on the review of the literature on mobility, marriage and family life, resource communities, and native communities, one of the major purposes of this study is to interrelate these variables in the interest of understanding and explaining quality of life issues in rapid development areas. This involves a systematic summary of existing data in proposition form, an analysis of relevant theoretical traditions in explaining transition, change, and adjustment, and the development of a "suggestive" model to organize the basic variables into explanatory modes dealing with intra-family, family-work and family-community issues.

7. Identify, in a preliminary sense, applicable research procedures in conducting a research program that is non-redundant (with existing information), policy-related, and relevant to explanatory issues in the oil sands area.

1.2 PROCEDURES

This study is a report of existing research and conceptual ideas conducted and formulated by others. As such, it must

rely on the information that is both available and obtainable. The task of collecting information is more complicated in this study due to the fact that the study of social impact issues is distinctly policy-related. Policy-related research is largely conducted by various government agencies and private consulting firms. Accordingly, much of this material is in unpublished form and only selectively available. Indeed, there are a number of problems typically encountered in literature reviews involving considerable unpublished material.

1.2.1 Access

Government libraries typically have a fairly complete record of papers and research projects conducted within their own branch but have more limited information on relevant materials in other departments. There is no central registry of unpublished government reports, papers, research projects, or relevant unpublished consultant reports and papers. Accordingly, it is necessary to visit and inspect the holdings of nearly all government agencies and consulting firms to acquire a fairly complete synopsis of what is available. Locating an important reference, however, is sometimes further hindered by the unavailability of this material because of being out of print, misplaced, confidentiality, and related reasons. In some cases, it wasn't possible to obtain available material on an extended loan basis due to problems of circulation control. The more typical problem, however, was that some of the materials were never acquired by libraries and direct contact with the author or research centre was necessitated. In such cases, certain materials were out of print, no longer available, or only available by purchase.

1.2.2 Quality

Unpublished material is of unpredictable quality. Such material is not scrutinized by a referee panel with respect to logic, the adequacy of the ideas advanced, the accuracy of the arguments, the applicability of the methods or data analysis procedures, the validity of the findings and conclusions, and related matters. Whether a paper is an idea, official statement, theory, research

report or proposal is difficult to determine from the reference. As such, considerable time is expended in reviewing materials which will, in most cases, turn out to be of little value even though the title is suggestive. These problems are of greater magnitude when one considers that many of these reports are of considerable size and frequently contain brief reference to substantive issues of relevance to this study, without the benefit of an index.

The procedures employed in this study to identify and review the literature on family and individual aspects of rapid development are briefly outlined below:

1. Ten government libraries (or selected resource locations) were visited, several of them more than once. These included the Legislative Library, Public Works, Boreal Institute, Community, Health and Social Service, Native Affairs Secretariat, Northern Development Group, Housing and Public Works, Municipal Affairs, and Environment. For the most part, the librarians were uniquely cooperative and helpful in both assisting in the search process and providing materials on an extended loan basis. In addition, all university libraries were thoroughly researched. Several centres were contacted for complete publication lists (e.g. Centre for Settlement Studies, University of Manitoba -- this centre is now defunct), several consulting firms (e.g. Ekistic Design), and several authors whose work was either not retained by the agency or firm for whom they conducted their research or was simply unavailable. Certain of these contacts were unproductive in that the requested materials were not provided.
2. Through the above procedure well over 500 references were identified that seemed relevant to the study. These were briefly perused and a decision was made concerning which materials should be abstracted. Based on a review of the abstracts, the complete materials were either xeroxed or obtained on extended loan from various

libraries. The bibliography attached is divided into two sections. Those in the related reference section are not referred to in the study either because they were determined to be irrelevant or nonessential. In the former sense, out-of-date materials, or important material which was redundant with other resources that were employed, are listed. Nonessential resources included out-of-date materials or references that were either redundant or didn't offer anything substantive beyond the material already reviewed. This list contains around 200 references. The references employed in the writing of this report, either directly or indirectly, are reported in the basic reference section of the bibliography. There are around 300 references that have been systematically reviewed.

3. Extensive notes and comments were compiled from a comprehensive reading of most of the basic references. These notes were organized into categories and extensively employed in the writing of this report.

4. Selected statistical data, other than data readily available from various published sources, were obtained from Alberta Social Services and Community Health on venereal disease, illegitimacy, and therapeutic abortions in the Fort McMurray area. These data were retrieved without charge from computer storage. In addition, the Population Research Laboratory of the Department of Sociology was able to supply selected housing and family census data for 1961 and 1971 for the Fort McMurray area.

5. Although the predominant purpose of this study is to review existing literature, a familiarity trip to Fort McMurray was deemed advisable. I met with staff at the local Syncrude Canada Ltd. office, Preventive Social Services, Alberta Social Services, and the Town offices. In addition, I took a ground tour of

Fort McMurray, Anzac and Fort MacKay. Although this trip contributes little to the content of this report, I believe the perspective gained by observing the lifestyle of both residents and migrants in resource communities has facilitated my review of existing literature. My research assistant attended the Environment Conference at the Edmonton Plaza Hotel. Her notes and comments on the conference were also invaluable assistance.

1.3 LIMITATIONS

It is important to emphasize that this study is not as comprehensive as it should or could be. The terms of reference requested a determination of relevant statistical data available for the Fort McMurray and surrounding area. There are two senses in which this request may be interpreted: (1) identifying the sources of data available, and (2) supplying and analyzing the data available as it related to family and individual aspects of rapid development. In the first sense, the McVey (1976) report provides an adequate determination of the type and source of statistical data available. In the second sense, the available published data, or unpublished materials readily available, are not up-to-date and can only be brought up-to-date by direct contact with the applicable data collection agencies. While this should be done, the task is simply too large given the impelling scope of this inquiry. Instead, I have chosen to simply utilize existing statistical sources of data in the writing of this report. Relevant data are only briefly summarized. No attempt is made to present a complete analysis of statistical material such as alcohol consumption patterns in the Fort McMurray area, let alone comparative data between this area and other areas of the Province.

Certain of the more fundamental statistical areas, unfortunately, are simply not available for analysis. Data on divorce rates, grounds, filing location, patterns overtime, etc. for Fort McMurray are not readily available in the Province and apparently cannot be obtained from the Central Divorce Registry in Ottawa, at

least not without an "inside track". The more important point, however, is that areas of this kind are of sufficient complexity and scope to justify an independent, long-term inquiry.

Although the search of literature may be deemed comprehensive, it should not be assumed that this report is definitive in scope. Several key materials were not obtained and it is probable that other key materials simply were not identified. A number of variables, of course, could not be researched because the social impact literature has simply ignored a large number of salient marriage and family issues, e.g. the nature and frequency of kinship contact after a move to a resource community.

Finally, this report should be thought of as a primitive statement of the interrelationship and integration of the myriad of salient variables in family-rapid development matters. The model and the proposed research design will need to be revised should a major study be funded as a result of the suggestions and recommendations of this report. In addition, while the literature has been "systematically reviewed", it is well to emphasize that there are several ways to be systematic. Given my own perspectives on rigor, the procedures employed in this project are inadequate. The ideal review pattern would include: (1) the identification of the type and size sample, location of study, instruments employed, their statistical validity and reliability, the type of respondents, and an assessment of these procedures; (2) the complete compilation of the findings of each study including the level of significance, degree of association (correlations or percentage differences as available), the accuracy of the purported findings based on the data provided; and (3) the conversion of these findings into consistent theoretical and empirical propositions that may be elaborated or simplified with respect to each other and to a partial or middle range explanatory theory. Even so, the procedures that have been followed permit reasoned conclusions and recommendations that are at least as viable as the material on which they are based.

1.4. ORGANIZATION OF REPORT

The remainder of this report is organized into 8 sections. Section 2 reviews the growing literature which emphasized the profound importance of the family in social impact studies with respect to policy. The impact of geographical mobility on individual mental health, issues in moving and staying, and related factors are considered in Section 3. Section 4 reviews the massive literature on the impact of social change on marriage, parenting, and children in rapidly developing areas and, to some extent, in stagnating communities. The characteristics and problems of resource communities are reviewed in Section 5. Section 6 identifies the cultural characteristics and adjustment problems in native communities in response to resource development and employment opportunities. Available statistical and qualitative data for the Fort McMurray area are specifically summarized in Section 7. The final section identifies relevant theoretical and empirical concerns in conceptualizing and conducting research in the Fort McMurray area. The tentative theoretical model and research design is proposed. The results of the study are summarized and the final conclusions and recommendations are presented.

2. THE FAMILY AS A FACTOR IN RAPID DEVELOPMENT

Few people, whatever their marital status, are able to escape, nor typically do they wish to, the pervasive influence of their families, past or present, or the implications of our couple- and family-oriented society in their everyday relationships. Heterosexual love and sexual relationships, marriage, child-rearing, parent-child and kinship ties are an integral part of human activity everywhere. Even so, there are numerous studies of social impact in resource development areas which fail to even mention either marriage or family relations, except in passing (e.g. Gemini North 1974). Several studies designed to establish basic social indicators to monitor processes and changes also virtually ignored the family unit (e.g. Wood 1974; Bauer 1966). Given the widely accepted assumption that the family is the basic institution in the personal growth and development of the individual and the major stabilizing force of society, it would appear apparent that the family represents a central resource in coping with and discovering a satisfying life-style in resource communities.

2.1 FAMILY WELL-BEING

The literature provides growing evidence of the importance of the family as a factor in rapid development. Riffel (1975:61) in a comprehensive review of the literature concerning the quality of life in resource towns suggests that:

The boom and bust character of resource towns aside, probably the most important reason leading an individual worker to leave a resource town is because his family is not happy with life in the town.

This theme is prevalent in interviews with community leaders in resource development areas (Applied 1975) and in personal interviews I conducted in a short visit to Fort McMurray.

Although quality of life factors will be dealt with in detail later in this report (see Section 5), it is important to emphasize at this point the essential role the family holds in such an index. In contrast to most social indicator conceptualizing

activities, the Social Science Research Council's Center for Coordination of Research on Social Indicators, in the United States, emphasized that the capacity to measure family well-being is the main criterion for selecting social indicators (Duncan 1973). Indeed, the need for specialists in evaluation, accountability, trends and social indicator research related to family impact has been recognized by a wide range of social scientists, government officials and professionals operating in the health, legal and social service segments of society.¹ In the State of Minnesota, legislation has been proposed to establish a permanent Legislative Council on the family. At the national level in the United States, Senator Mondale's (now Vice-President) Committee on Child Welfare has emphasized the need for assessment of the social impact of economic and environmental policies on families. Demerath (1975) argues that research on family impact, like policy research in general, is an idea that is long overdue. The recent Ford Foundation report, *Social Science Research on Population and Development* (1974), clearly documents the importance of family research as the critical link between macro-economic and demographic variables and national population policy. Similarly, Orville Brim, director of the Russell Sage Foundation, emphasized the importance of the linkages between "...great social forces -- technology, the law, mass media, economic and social discrimination..." which affect child-care institutions like the family (Brim, 1975). It is apparent from the comments of these and other scholars in the United States, "that there is now need for research which focuses on the family as pivotal in the flow of planned change and the development of appropriate indicators of such change" (Minnesota ... 1976). Perhaps the most profound

¹ Much of this analysis is based on material identified in "A program for training family impact analysts" printed by Minnesota Family Study Center (Minnesota, 1976).

evidence of the importance of family impact research, and identifying and applying its findings to policy development and services to families, is the major funding of a training program for "Family Impact Analysts" at the University of Minnesota.

The implications of these indicator and research concerns in the United States are, in fact, international in scope. The 1965 report of the Secretary-General to the United Nations (Family 1965) contains both evidence and concern for family impact issues. The following two quotes are illustrative.

Families, children and youth are not only beneficiaries of economic and social development programs, but are a vital potential resource for such programs That investment in families, children and youth is therefore essential for long-term economic and social development (p. 5).

Since families and the individuals who compose them are one of the most important resources of every nation, it is understandable and appropriate that the well-being of its families is today a major concern of every national government. Recognition of the importance of the individual and the family is evident both in national constitutions and in national economic and social legislation (p. 7).

It would appear evident that family impact is recognized as an international concern, and of growing concern in the research and policy activities of many countries. Apart from the work of Riffel (1972, 1975), the consistent belief among many professional people in many northern communities (including Fort McMurray) that family breakdown is a fundamental problem in resource communities and family concerns are a basic factor in high turnover rates, I have been unable to locate any official recognition of the significance of family impact issues in Canadian research programs or policy formulations. It would appear that the support of this exploratory study by the Alberta Oil Sands Environmental Research Program is indicative of interest in family impact matters. Whether the Program should attach

greater significance to the family variable, perhaps the major criterion for the empirical assessment of the quality of life in resource towns is, at least by implication, the purpose of this report.

2.2 GOVERNMENT POLICY AND FAMILY WELL-BEING

Implicit in the preceding discussion is the assumption that government policy has a considerable impact on family relationships. The rights of all members of society (including natives, migrants, etc.) are officially recognized by the United Nations in the "Universal Declaration of Human Rights" (United Nations, General Assembly, Resolution 217A, III, Article 25, paragraph 1):

Everyone has a right to a standard of living adequate for the health and well-being of himself and his family, including food, clothing, housing and medical care and necessary social services and the right to security in the event of unemployment, sickness, disability, widowhood, old age, or other levels of livelihood in circumstances beyond his control.

While these factors do not directly apply to resource communities -- due to relatively full employment, relatively high income, and adequate housing and provisions -- it would seem that there are two important implications. First, the adequacy of social services and relative existence of security in response to rapid development, at least in comparison with non-resource areas in Canada, is not given. As will be suggested in Section 7, the impact on the quality of life in native communities is potentially of considerable harm. Due to the unavoidable intrusion of resource development, it is incumbent on both government and industry to create policies and procedures to lessen the impact while at the same time insuring optimum provision of services and security and the development of a redefinition of a fulfilling quality of life for natives. Second, the role of government policy in assisting resource communities, families that choose to move into these areas, and regulating

industrial development and social services provided by industry, is a matter of fundamental importance.

It may be emphasized that the relationship between industry and government is not the concern of this report. These issues are complex, frequently political, and unfortunately sometimes involve significant social costs. Suffice to suggest that the typical industry is interested in making a profit (cf. Jackson and Poushinsky 1971). In order to do so, turnover rates and related costs must be minimized. Indeed, a sufficient level of quality of life must be realized and maintained. Similarly, though the interest and activity of government is somewhat less articulate, attempting to insure that all citizens realize the minimal standards established by the Universal Declaration of Human Rights is the basic goal. Due to numerous factors, this involves the regulation of industry, the establishment of policies with respect to community requirements and services, and the direct provision of public services to people in need. While it may be inherently obvious, it is well to reiterate that both industrial and government policies do have a significant impact on family life. These matters are particularly apparent in resource communities.

In a major review of the impact of government policy on the family, Schottland (1967) demonstrates the impact of wage policies, housing programs and unemployment on both family income and family relationships. Vocational education, vocational rehabilitation, manpower placement, minimum wage laws, tax cuts and tax exemptions, social insurance, unemployment insurance, job opportunity programs, family allowance payments, rent subsidy, low interest mortgages for housing, housing standards, group accident and dental insurance, life insurance programs, severance pay and dismissal compensation, and medicare are all examples of the various ways in which government can facilitate an adequate lifestyle for family units and mitigate the effects of unemployment. A radical change in any one of these policies without compensatory policy formation may have pervasive effects on family life. Prolonged unemployment, for example, initially lowers the living standard, forces wives

to work often against their will, husbands lose status in their own families and develop various emotional problems, families withdraw from social life, and eventually family disorganization and disintegration is typical (Schottland, 1967: 72-73)

A more recent study (Scanzoni 1970) suggests by implication that government policy and industrial inducement cannot stop at minimums. Scanzoni found that marital satisfaction is not so much an issue of inadequate income as much as it is the relative success of the husband in the economic sphere. Even though a husband may earn an adequate wage, if his income is distinctly lower than that of his peers in the same occupational category, and by implication his real income is lower than available elsewhere, the typical marriage is dissatisfying. In this sense, unemployment is not the issue as much as an achieved lifestyle comparable to what one is used to, or has come to value as a result of the achievement of others. Quality single family housing, recreational amenities, good incomes with opportunities for advancement, flexible work schedules, opportunities for female employment if desired, minimum commuting time demands to and from the workplace, and related factors, may be as important in marital stability (and by implication, job stability) as government sponsored low interest mortgages.

The recent change in the divorce act (1968), for example, is an excellent illustration of how government policy can affect marital stability. Before 1968, the grounds for divorce was limited to infidelity in most provinces while divorce was not possible at all in Quebec (Quebec only permitted separations). Since 1968, the divorce rate has quadrupled (from 55 to over 200) for Canada as a whole. A change in the financial costs of divorce with respect to legal fees and legal obligations such as alimony will also have a profound accelerating effect on divorce rates. While it is, of course, apparent that divorce rates are only indicative of the relative ease of ending a marriage, and not a judgment on the relative quality of marriage per se, it is also self-evident that, in the absence of a change in the divorce law, marital stability would be considerable higher, though the average level of marital

satisfaction may be lower.

There are other factors which might be noted concerning the importance of the family as a variable in oil sands research programs and policy development. Indeed, the substantive review of the literature to follow offers strong support for this proposition. It is sufficient to suggest in this section that family impact is of growing concern to both scientists and politicians and that "practically all government programs have economic implicationsfor family members" (Schottland 1967:720)

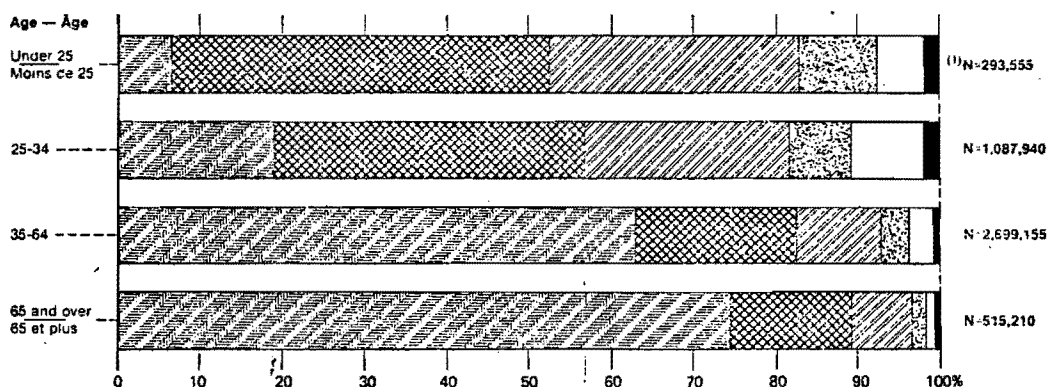
3. GEOGRAPHICAL MOBILITY AND ADJUSTMENT

Geographical mobility is a way of life in Canadian society. DuWors et al. (1974) found that the typical metropolitan area in a 15-year period loses nearly 60 percent of its initial year population, has this lost population totally replaced, and adds considerable numbers to the original population base. DuWors estimated that within ten years in the average city not more than 50 percent will still be there. Recent data provided by Statistics Canada (1976) on family migration reveal that within a five-year period, 1966 to 1971, only 19 percent of husband-wife families between the ages of 25-34 had not moved (Figure 1). Approximately 38 percent moved within the same municipality. Somewhat more than 40 percent had moved either within the province, between provinces, or outside Canada, within this five-year period. Twenty-four percent of the moves were intra-province. As apparent in the graph provided, there are only minimal differences between husband-wife families and single-parent families.

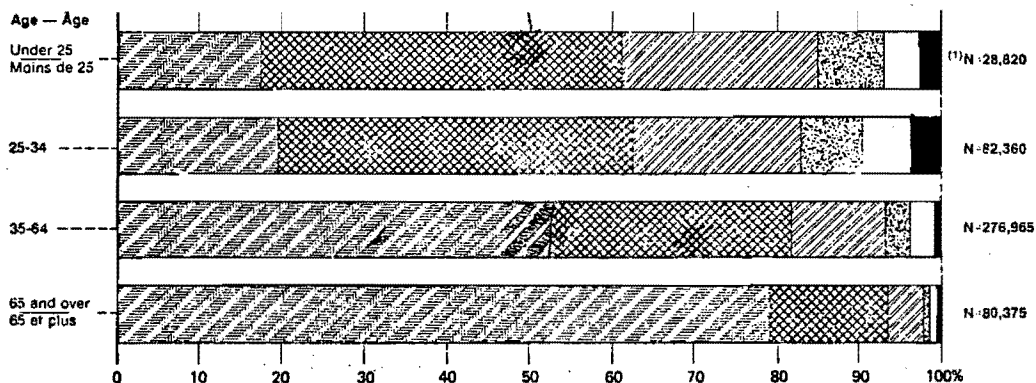
Similar mobility patterns are also endemic in the United States. Butchinal and Bauder (1965) report that approximately 20 percent of the population moves each year. However, only 4 percent of the population moves between States each year (Current Population Reports, U.S. Census Bureau). In a study of a random sample of 500 movers out of a population of 200,000 families moved by van, Jones (1973) learned that the modal number of times was 5-6 times for families 30-39 years of age. Families where the wives worked full-time tended to move more often, 40 percent of such families had moved nine or more times compared to only 20 percent where the wives did not work outside the household. A related study by Landis and Stoetzer (1966), of middle-class migrants to a large California city, found that over 70 percent moved 200 miles or more.

Considerable research has been conducted on the reasons why people move, the characteristics of movers, the impact of mobility on mental health and related problems of adjustment, and the factors associated with post-mobility adjustment. Due to the

Percentage Distribution of Husband-Wife Families by Migration Status and Age of Head, for Canada, 1971
Répartition en pourcentage des familles époux-épouse selon le statut migratoire et l'âge du chef, Canada, 1971



Percentage Distribution of One-Parent Families by Migration Status and Age of Head, for Canada, 1971
Répartition en pourcentage des familles monoparentales selon le statut migratoire et l'âge du chef, Canada, 1971



- Non-mover — N'ayant pas déménagé
- Mover-same municipality — Ayant déménagé dans la même municipalité
- Mover-same province — Ayant déménagé de la même province
- Mover-different province — Ayant déménagé d'une autre province
- Mover-outside Canada — Ayant déménagé de l'extérieur du Canada
- Mover-province not stated — Ayant déménagé-province non déclaré

(1) N-Total population in each age group
 (1) N-Population totale dans chacun des groupes d'âge

Source: Statistics Canada Catalogue 93-771 (SF-1) July, 1976

Figure 1. Family migration in Canada

relevance of this literature to an assessment of adjustment in resource communities among migrants, this research is reviewed below.

3.1 REASONS FOR RESIDENTIAL MOBILITY

The studies to be discussed in this section typically involve intra-city residential moves, not within-province or state moves. These studies are nonetheless relevant to this report because movement from resource communities appears to be similar analytically to residential moves.

Generally, most moves are voluntary (at the discretion and choice of the mover), some moves are involuntary due to eviction, urban renewal, or job transfer, and many moves are a mixture of voluntary and involuntary motives such as downward mobility, death, divorce, separation, employment and related factors.

According to studies, volunteer migrants appear to have several interrelated characteristics. McAllister, Butler and Kaiser (1973) found that movers tended to be either childless or have small families, with either preschool or elementary school children. It was also found that movers with these characteristics interacted more frequently with their neighbors and more frequently in the communities from which they moved. Moving wives were more sociable. Weinberg (1954) found voluntary migrants to be more intelligent, more energetic and better equipped for moving than non-migrants. In an interesting study by Sticht and Fox (1966) frequently mobility was related to dogmatic traits. Sticht and Fox suggested that this is an expectable characteristic because migrants are more inclined to "cling" to their beliefs to reinforce stability in differing locations.

The motivation for moving varies. Landis and Stoetzer (1966) found that 40 percent of his sample of geographical movers in California were due to a transfer by their company. Of the remainder, nearly 40 percent moved for economic reasons including better opportunities, higher salaries, or possibility for advancement. Eight percent of the sample had a guaranteed job before they moved. The decision to move was made within the preceding six

months by 76 percent of the sample. In a review of literature on residential mobility, Burchinal and Bauder (1965) established four predominant reasons for voluntary migration: (1) Status aspirations involving upward social mobility due to career improvements constituted the most common reason; (2) An overlapping motivation was familism. Moves in this case emphasized obtaining more housing space and the suburban lifestyle on behalf of the children; (3) The increasing size of the family necessitated a move to larger accommodations. Thus, moving was more common during preschool and elementary schooling years; (4) A minority of moves were by people with a "nomadic" spirit, changing residence regularly for the sake of change itself. As suggested by Burchinal and Bauder, most residential moving activity is related to dissatisfaction with one's present dwelling. In doing so, they anticipated the important work of Morris (1975, 1976).

Morris and Winter (1975) argue that the impulse to move is created by a normative housing deficit. Based on their research, they identify five major housing norms:

Space norms - typically reflected in the number and size of bedrooms based on the age, sex, and family status of household members.

Tenure norms - The right to own one's own home.

Structure type norms - single family detached dwelling.

Quality norms - owning a house up to one's income standard.

Neighborhood norms - these include residential location, good school district, safe well-maintained streets, homogeneous with respect to social class, race, etc.

Based on these norms, people within given areas fashion their conceptions of the normative housing deficit as defined by their cultural and family norms. Assuming that a deficit exists, residents may either move, adapt to existing residential conditions, or modify their family determinations of the deficit. Most of their respondents were apparently unable to adjust to their perceived normative housing deficit and chose to move (Morris et al. 1976). They

conducted a multivariate analysis of neighborhood and housing satisfaction and found that housing dissatisfaction was significantly related to neighborhood dissatisfaction, living in a multiple dwelling, shortage of bedrooms, and renting the residence in which they were living. Neighborhood satisfaction was found to be significantly related to, in order of degree of explained variation, education, income, occupational status, and the number of months married. The desire to move was found to be most strongly related to neighborhood dissatisfaction, closely followed by housing dissatisfaction. These studies appear to offer strong evidence that residential mobility is a function of dissatisfaction with community life and unsatisfactory housing, as defined by one's own normative standards rather than minimum standards of adequacy.

3.2. GEOGRAPHICAL MOBILITY AND MENTAL HEALTH

Most of the literature dealing with issues in mental health and mobility concerns immigration from other countries, or matters related to cultural assimilation. The emphasis on immigration to the neglect of geographical mobility per se in evaluating the implications for mental well-being is an unfortunate oversight for two predominant reasons. First, it is well established that even a change of job, a change in position such as from husband to father and wife to mother, a change in the reactions of others to one's performance, a change in role partners, friendships, and a myriad of related factors, under specificable conditions, can have a profound impact on mental well-being. Second, mobility to frontier resource communities which lack many of the amenities of urban society would, it would seem, have many of the structural and dynamic characteristics of a move from one country to another. Accordingly, this literature is a viable entree for specifying, later in this report, certain conceptual implications.

The relationship between mental disorders and mobility can be explained in three ways: (1) mobile persons are characterized by certain mental and emotional problems predisposing them to move; (2) the process of mobility itself creates mental stress which precipitates mental disorders among susceptible individuals; and

(3) the demonstrated relationship between mental disorders and mobility is spurious, i.e. the accurate explanatory factors have not yet been located. All of these explanations have been considered in various research projects. It is generally concluded that extraneous factors do not and cannot explain away the marked association between mobility and mental well-being. However, whether mobile persons are mentally disturbed before they move, are uniquely susceptible to unfavorable conditions of mobility, or the demands of the new environment exceed the capacity of even the more healthy migrants cannot be settled, at least the matter remains unsettled to the present.

Blau (1958) found that mobile persons had greater difficulty integrating into new social groups and generally had stronger feelings of insecurity than the non-mobile. One possible explanation for the findings of Blau is that the move itself was engineered in haste. Wolpert (1966) found that the degree of environmental stress associated with a move led to careless and hasty mobility decisions. Abnormal stress facilitated crises decision-making characterized by constriction of perceived choice, increased rate of error, stereotyped responses, disorganized activity, problem-solving rigidity, reduction in the focus of attention in both time and space, and distortion of time and space perspectives. A similar implication was demonstrated in the work of Weinberg (1954). The work of Weinberg (1961) suggests by implication, however, that the stress factor, regardless of whether a move is voluntary or involuntary, is less significant than the relative ability of the mover to cope with stress. He found that adjustment among migrants is a function of inner security. Even so, it is apparent in the literature that the issue is not resolved although most would agree with Fried (1964:23) who suggests that the issue is interactive: "mental health does not inhere in the individual but in the relationship between the individual and his immediate environment."

The immigration literature provides substantive evidence that mobility and mental health are related. Immigrants are found

to have higher mental hospitalization rates (Odegaard 1932; Lamert 1948; Malzberg and Lee 1956; Lock et al. 1960; Faris and Dunham 1960). Kantor (1965) reports that mental hospitalization rates are lower for middle and upper socioeconomic levels and higher for blue collar immigrants, controlling for both race and ethnicity. Studies by Eitinger (1958) and Murphy (1955) indicate that the underlying characteristic of mentally disturbed migrants was that they were emotionally disturbed by the separation from their country of origin. In general, these findings are most consistent and significant for migrants to the United States. Studies in other countries, including Canada, appear to demonstrate that native immigrants have higher rates of mental illness than migrants from foreign countries (Odegaard and Astrap 1960 in Norway; Statistics Canada data on mental hospitalization rates among native and foreign migrants; c.f. Murphy 1965; Henry 1965). Henry (1965) suggests that the predominant reason for findings of this type is that native migrants have a higher level of discrepancy between their aspirations and expectations.

Internal variability in mental hospitalization rates exists in both Canada and the United States. In Chicago, for example, where immigration rates are unusually high, mental hospitalization rates are uniquely low (as reported in Murphy 1965). Similarly, in British Columbia the Chinese have the lowest hospitalization rate of all ethnic minorities. In Ontario, in contrast, where the Chinese are scattered throughout the province, they have the highest rate of all other ethnic minorities (as reported in Murphy 1965). Even so, in general, the foreign migrant to the United States is more likely to become mentally disturbed while the resident migrant in Canada appears to have higher mental hospitalization rates. Murphy suggests that the major reason for this difference is the melting pot policy in the United States. The climate of opinion in the United States discourages the maintenance of culture, as a kind of American disloyalty. In Canada, in contrast, loyalty to one's culture of origin was either regarded in a neutral or approving manner. It is suggested that Canadian immigrants would be more inclined to consult with family

and community before immigrating. In this sense, the more unstable migrant would likely be discouraged by his family and peers toward migration, while an approved migration also insured the resources of family and community in making migration successful. Migrants to the United States, in contrast, it is argued, were more likely to move in the interest of obtaining a better life and more typically left without support with the affirmation that "they were on their own." This interpretation has a certain appeal but it may also be emphasized that the "melting pot hypothesis" is less viable today and probably inadequate as an explanatory factor in the differences between the United States and Canada (Larson 1976: 20-25).

3.3. POST-MOBILITY ADJUSTMENT

Regardless of the reasons for moving, there appear to be a number of factors that are significantly related to adjustment in the new community. DuWors et al. (1972) would approach this statement with a question. How can communities with unstable populations maintain structures and functions over time? Friendships take time to build; organizations with people coming and going in large percentages have difficulty in maintaining consensus on ends and means; new people often mean new definitions of situations. Similarly, Nisbett (1953) suggests that the quest for community represents the core of social order. The answer to the question would appear that, indeed, people do adjust variously to new communities and that certain conditions facilitate adjustment, while others inhibit adjustment.

It may first be emphasized that there are multitudinous factors that could have an influence on post-mobility adjustment. These might be defined in terms of intervening factors between the decision to move and arrival, and post-migration factors in the individual, family, and community of destination. The following list of illustrative factors is partly based on Burchinal and Bander (1965).

Intervening factors

Characteristics of community of origin: job opportunities,

housing characteristics, neighborhood relationships, amenities, etc.

Status of migrant: education, occupation, income, credit rating, marital status, job history, age, ethnicity, religion, etc.

Social psychological characteristics of migrant: expectations, knowledge, skills, attitudes, values, flexibility, creativity, sociability, mental health, etc.

Marriage relations: length of marriage, marital solidarity and adjustment, role flexibility, problem-solving skills, commitment to marriage, marital status (in sense of divorce, separation, remarriage), kin ties, social activity patterns, amount of time together, etc.

Family relations: visiting patterns with kin, number of children, age of children, parent-child relationships, family cohesion, family-oriented activities, amount of time available to children, commitment to family goals, special educative, rehabilitative, or health problems of children, knowledge and skill in parenting, degree of parental satisfaction, etc.

Post-migration factors (Before and after comparisons)

Characteristics of community of destination: job opportunities, housing characteristics, neighborhood relationships, amenities, community stability and commitment, community spirit, health and psychological services, etc.

Status of immigrant: job obtained, income achieved, credit available, marital status after move, ethnic and religious contacts, etc.

Social psychological characteristics of immigrant: expectations realized, knowledge applicable, skills

adequate, adaptability to role demands, capacity to innovate, satisfactory opportunities for socializing, degree of mental well-being, etc.

Marriage relations of immigrant: sufficient role flexibility, able to solve problems, capacity to realign patterns of kin contact, social activities, amount of time together, employment provisions for wives, etc.

Family relations of immigrant: acceptable patterns of kin contact, adjustment of children to new environment, ability to cope with new child demands and problems, acceptability of realignment of time schedules, acceptability of community amenities for children, acceptability of schools, etc.

Only a minority of these factors have been studied with respect to post-mobility adjustment anywhere let alone in either northern communities or resource communities such as Fort McMurray. The literature reviewed below is largely derived from research in the United States. Sections 5-7 deal more directly with Canadian data.

One of the more detailed studies of adjustment in new communities was conducted on a random sample of over 200,000 families moved by van (Jones 1973). It was found that several mechanisms facilitated adjustment in a general way: (1) the arrival of familiar objects such as furniture; (2) the return to a normal schedule; (3) meeting neighbors of similar fate or being welcomed by neighbors in the new community; (4) the existence of familiar chain stores such as grocery stores; and (5) the availability of familiar television programs and similar quality reception. The data were obtained from the wives and reflect their particular dispositions toward the move. It was clearly established that the availability of accurate and detailed information prior to a move strongly influenced satisfaction with the move (also Weinberg 1954). The key dimension of adjustment in the new community apparently depended on whether the new neighbors were friendly. Jones

concluded that the greater the change in social situation imposed by geographical mobility, the greater will be the requirements for learning and personality modification.

Fellin and Litwak (1963) explored the factors which facilitate the socialization of newcomers to a community and maintain cohesion under conditions of membership turnover. Several attributes of individuals were identified: (1) the amount of training individuals have for dealing with conditions of change; (2) positive reference orientations toward mobility; (3) attitudes of people toward discussing problems with others; and (4) the attitudes of individuals toward strangers and being strangers. In general, it was found that people who think personality problems can be discussed with others were able to form new friendships easier. People with negative attitudes toward strangers had considerable difficulty integrating into the new community.

Wilner's et al. (1960) study of negro adjustment in moving from a slum environment to better housing may be relevant. It was found that all family members were clearly aware of their improved circumstances and typically appreciated the space. Due to improved housing there was a sharp increase in family activities, interaction with neighbors, and the psychology of the individuals involved in the move were markedly improved (positive mood, optimism, satisfaction with self, greater autonomy, and lower levels of nervousness). This move is clearly a move from the inadequate house to a house the family never expected to be able to occupy. However, given the importance of normative housing deficit identified in Section 3.1 of this report, it would seem reasonable to suggest that better housing is not simply an inducement to move but also a correlate of increased satisfaction with the quality of life in the new community.

Fried (1965:159), in his study of working class communities and forced relocation, was able to conclude after reviewing the results of his analysis the following : "It is particularly striking that relocation evidence of preparedness for change is the most important factor in determining post-relocation adjustment-

adaptation and tends to dwarf the importance of all other post-relocation situations and experiences." Accordingly, in situations of involuntary migration, housing is less important than complete information about the characteristics of the new community.

The findings on the relationship between geographical mobility and adjustment are summarized in Figure 2. It is emphasized that certain of these findings relate to residential mobility, others to intra-state or intra-province mobility, and others to immigration from other countries. As has been suggested, although these analytical distinctions are important it can be demonstrated that the problems of adjustment, motives in relocation, and mental well-being are interrelated. The next section looks specifically at marriage and family relations with respect to social impact.

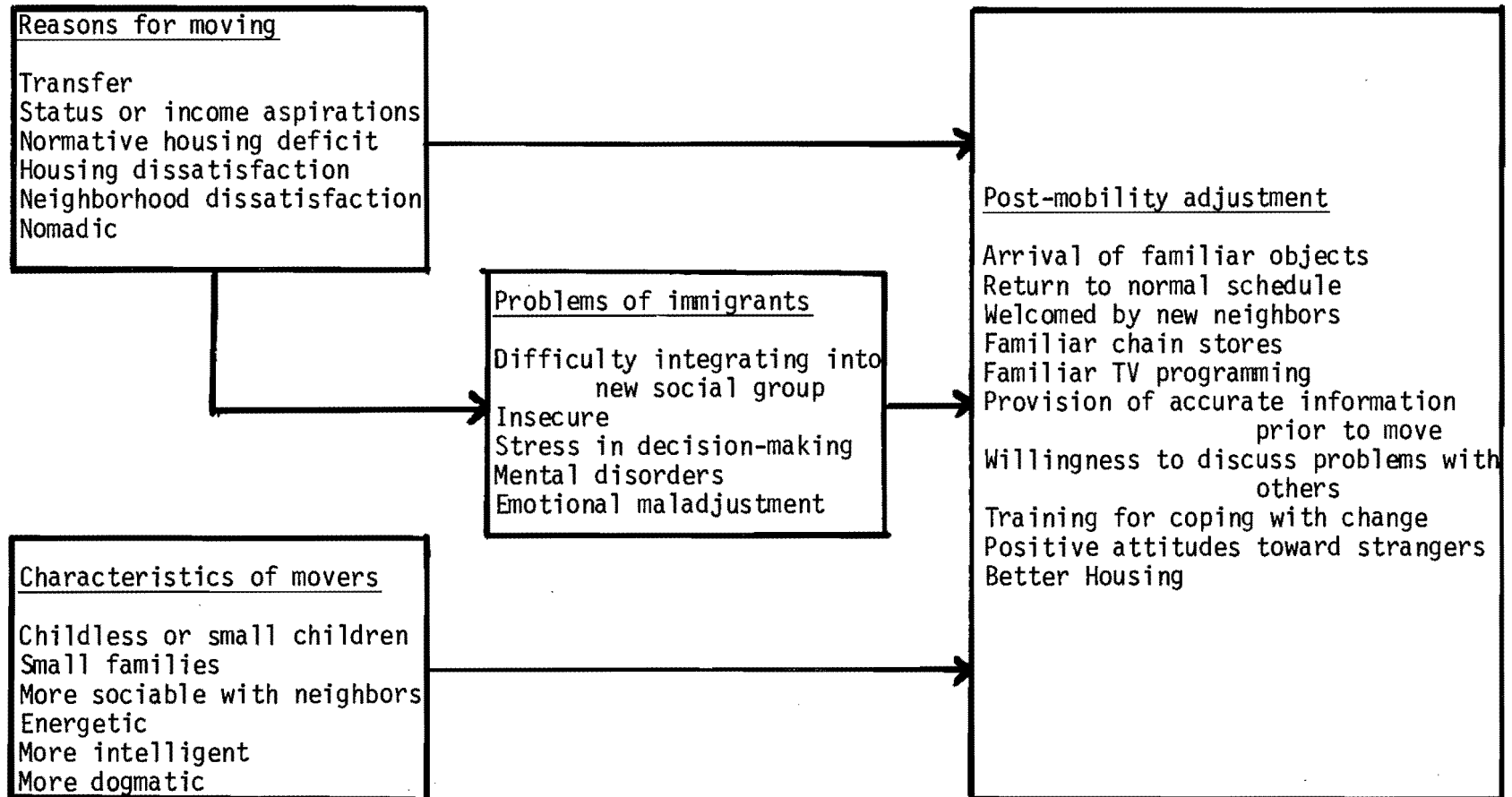


Figure 2. Summary of findings on geographical mobility and adjustment.

4. SOCIAL IMPACT AND FAMILY WELL-BEING

In Riffel's (1975) now classic review of the literature on quality of life in resource towns, it was necessary to emphasize that no direct data are available on satisfaction with family life or any basic attribute of the family in resource communities. Other than the informal comments of various professional personnel in Fort McMurray concerning family breakdown (Van Dyke 1975), this situation is apparently unchanged to the present time. However, there are considerable data available which are relevant to identifying and interpreting the basic issues in family well-being in resource development areas. Accordingly, this section summarizes what is known concerning mobility and family relations, work and non-work patterns and their impact on the family, family relations in isolated areas, and the family and crises. Family patterns in native communities will be discussed in Section 6.

4.1 GEOGRAPHICAL MOBILITY AND FAMILY RELATIONS

4.1.1 Kinship Ties

As has been suggested earlier, mobility is a common attribute of life in modern society. The conditions of the occupational system, including how employees use their time, the priority of job ties over family and kin ties, and the relative freedom to be geographically and socially mobile if duty or opportunity knocks, had led Parsons (1959) and others to argue that kin ties do not fit with industrial society. Parsons argues that ties with kin must be "multi-lineal", based on friendship rather than obligation, and the family unit must be small and readily mobile. In consequence, the nuclear family household with fewer children becomes the predominant family form. This position has been hotly contested, however, and for the most part it is now accepted in scholarly circles that the influence of kinship remains impelling in Western society (Sussman 1970). The basic findings are summarized below (Larson 1976:285).

1. Mutual aid, including the exchange of services, gifts, advice and financial assistance, is widespread within kin networks. Financial assistance is most apparent during the early years of marriage (e.g. Sussman, 1953; Adams, 1968). Osterreich (1965), in her study of English Canadians in Montreal, found that

mutual aid was maintained in spite of geographical mobility (see also Irving, 1972).

2. Visiting among kin living in the same urban area outranks visiting among friends, co-workers, or neighbors (e.g., Bell and Boat, 1957). Irving's study in Toronto (1972) found that 75 percent of those whose parents lived in the same neighborhood visited them weekly.
3. Babysitting and taking children "out of town" are common activities of grandparents (e.g., Sussman, 1953).
4. Caring for aged persons during illness, providing a home for a widowed parent, shopping and house-keeping are common tasks performed by children for their parents and parents-in-law (e.g., Bott, 1971; Streib, 1958).
5. Kin members moving to new areas or simply traveling are regularly assisted by the kin network. Aid varies from providing a "place to stay" to help finding a job (e.g., Schwarzweller, 1964; Rossi, 1955). Kohl and Bennett's study of rural-urban migration in Canada (1965) documents the important role of kin in helping the migrant "make it".

In spite of these impressive findings, there is ample reason to suspect that many important questions have not been asked in much of the kin research to date and the analysis of typical findings tends to emphasize kin-integration rather than kin-isolation. It is commonly assumed, for example, that visiting with kin exceeds the amount of visiting with non-kin. In fact, a close look at a study by Bell and Boat (1957) which purportedly identifies this "fact", reveals that visits with friends in a given month exceeded visits with relatives in three out of the four neighborhoods studied. Further, much of the literature tends to either emphasize help patterns within the middle class which are not geographically limited or the extensive kinship contact among blue collar families, within the same community.

A study by Marc Fried (1965) of forced relocation among working class families found that close-knit networks, kin networks in particular, suffered heavily among those forced to move. Indeed,

the change was called "a major crisis of transition." Among movers with close-knit networks, nearly 80 percent failed to adjust to the new community. A more recent study of the relocation of blue collar families (Booth and Camp 1974) revealed that kin assisted and maintained contact during and after the move only temporarily. Wives became more actively involved with their neighbors and, compared with the neighborhoods from which they came, they had fewer friends from their spouses' work place and progressively had fewer friends in common with their spouses. Other research has demonstrated that geographical and occupational separations do not inhibit kin ties (Litwak 1960a; 1960b); kin typically actively participate in facilitating a move to new areas - this particular study found that kin after an optimal establishment period were more of a hindrance than a help (Choldin 1973), and that friendship and neighborhood interaction are of greater importance in community life than kin contact (Goudy and Barb 1975). The argument, by informants in the Fort McMurray area (VanDyke 1975:74), that family breakdown is associated with removal from kin groups, is apparently widely held. Even so it is evident from the above review of the role of kin ties in mobility and adjustment that the evidence is sufficiently contradictory to leave this matter unresolved. It would seem appropriate to assume that the more important variable is the relative importance of kin ties to the nuclear family moving to a new community and away from their extended kin.

4.1.2 Wives and geographical mobility

The study by Jones (1973), which employed the responses of wives in mobile families, found that nearly 60 percent of the husbands and wives made a joint decision to move. Although most of the wives were happy with the move (64 percent), wives who were involved in the planning stages of the move were the most satisfied. Exploratory trips by both the husband and wife to the site of the community of destination strongly influenced the wife's satisfaction with the move. In this study wives were found, typically, to favor

the move, reported few negative effects on their children, and experienced personal growth by moving. Excitement about the move was most likely among women aged 50-59 and least satisfying among women 40-49 years of age (these were the most depressed group). Women in the 20-29 age group were initially quite lonely but adapted quite well within the first two-three weeks. Jones also found that the adjustment of wives was the most problematic in blue collar families. In an earlier study by Fellin and Litwak (1963), it was found that adjustment to a new community was facilitated if the friends of the husband and wife were the same people and if wives were kept abreast and informed of the characteristics of their husband's jobs. It may be noted that the support for these findings were modest but suggestive of important concerns needing further research. The 1963 study of Stuckert demonstrated that wives in mobile families had fewer friendships than wives in non-moving families. Extended family contacts decreased, wives tended to cut off kin ties, and mobile wives established fewer neighbor bonds and participated in voluntary organizations to a lesser extent in the neighborhoods to which they moved. In a 1951 study by Angell, mental instability was found to be higher among wives than husbands in mobile families. Angell speculated that moving has a negative effect on social integration since severing and establishing ties creates stress. Due to the fact that wives are the most actively linked to the social life of the community, they are the more likely spouse to suffer in a transient social system.

It is evident from the above studies that wives should not be ignored in mobility decisions. Their inclusion in all aspects of the move facilitates their adjustment to the community of destination and by implication the possible adjustment of the entire family.

4.1.3. Children and geographical mobility

The symposium on mobility and mental health published under the editorship of Kantor (1965) contains a review article by Kantor on the consequences of residential and social mobility of children. In essence, it is argued that "for the child, a change

in residence is analogous to a change in parent " (Kantor 1965: 87). Kantor's major findings are summarized below (cf. Kantor 1965: 111-118).

1. Whether or not the move is stimulated by the adjustment problems of the child, the families who change residence within a community have less well adjusted children than the families who do not move.

This pattern is particularly facilitated as a result of change in schools. Liddle (1955), for example, found that newcomers in a classroom received a smaller percent of nominations for leadership and friendship and a greater percent of choices for being withdrawn and aggressive than did resident children.

2. Upward and horizontal occupational changes of the father appear to be associated with the retention or development of behavior problems by the child. Occupational mobility apparently either makes it more difficult for a child to recover from old symptoms or facilitates the development of new ones.
3. Factors other than a change in residence strongly influence the adjustment of children in new communities; the residential change itself is not sufficient to raise or reduce the child's disturbance level.

These factors include the demand of the work place (e.g. an occupational change frequently involves a different work schedule resulting in a change in interpersonal relations in the family), parental attitudes toward the new community, the adequacy of the school system, marital adjustment problems stimulated by mobility, community provision for child activities, and related factors. The impact of these factors, however, is not empirically demonstrated; they and others are merely suggested as important intervening variables.

Findings like those of Gordon and Gordon (1958), who found that emotional disorders of children are correlated with mobility, are contaminated by the pre-move existence of problems among children. Families with poorly adjusted children also move; in consequence, children in such families continue to have adjustment problems in the new community. However, as Switzer et al.

(1961) point out, typical feelings of abandonment, loss, helplessness, isolation, fear of the unknown which are common emotions, not problems, in moves into unfamiliar surroundings, may become more than temporal if the child is already anxious about his relationships with his parents. It is argued that children will tend to model parental attitudes in new communities. If parents are dissatisfied in a new community, their children are frequently scapegoated; children in response become more demanding and dependent on their parents and impute these problems to the school setting. Conversely, if families are well-adjusted prior to the move fewer problems are likely to occur. A study by Barrett and Noble (1973) of 159 families moved long distances by moving van, based on the reports of mothers, found that 80 percent of the children made new friends easily, 75 percent said that school change wasn't difficult, 81 percent reported no negative effects or good effects of the move on their children. The few parents who reported a "bad attitude" toward the move, as might be expected, perceived the move to have a bad effect on their children. Barrett and Noble however found that this judgment was not supported by the behavior indicators they employed. As with many of these studies, the results of this study are severely limited by the quality of the response rate (in this case it was extraordinarily low - 25 percent).

In general, the findings concerning the impact of geographical mobility on children are contradictory. However, consistent with Kantor, it may be observed that the contradictions are not due to the absence of evidence in support of child adjustment problems. Instead, the studies themselves reflect variously on inadequate methods and the selection of variables of lesser importance. The basic suggestion of Switzer et al. (1961) is yet to be employed in the study of pre- and post-mobility adjustment of children.

4.2. WORK, NON-WORK AND FAMILY PATTERNS

Work roles, in general, are the most important factor in the life style of the family - associations, aspirations, re-

creational pursuits, living accommodations, marital and family interaction, child-rearing techniques, sex-role differentiation, and many other internal family lifestyle characteristics are typical consequences of work roles with respect to both their status and income. In an often under-emphasized sense, work roles distinctly influence the amount and distribution of time available: family members must schedule their activities in terms of the responsibilities of employment. The amount of time they will spend together, and when it will be spent, and, to some extent, how it will be spent are significantly related to the number and distribution of hours required by the work place. Although the "father at work in the daytime and home at night" pattern has nearly become a legend, the implications of this pattern for family role relationships and socialization processes are frequently overlooked.¹

4.2.1. Amount of time available

Access to family tasks is obviously related to who is able to do them and when they can be done. The unemployed spouse will be primarily responsible for household role responsibilities while the employed spouse will assume a predominant resource or provisionary role. Reciprocal expectations concerning an approved level of performance in these roles will tend to become standardized. Accordingly, the rights and duties of husbands and fathers and wives and mothers are significantly related to the amount of time available for family responsibilities. Families where the employees have fewer work hours or fewer commuting hours have the "opportunity" to define the system of family rights and obligations quite differently. The employed spouse who works fewer hours, for example, may be expected to participate more extensively in household res-

¹This section of the report is heavily based on a paper entitled "The Influence of the Compressed Work Week on the Family System." (Larson 1974)

possibilities. Indeed, there is research evidence that husbands tend to become more involved in household activities when their wives are employed (Blood and Wolfe 1963). Further, the majority of workers say they will use additional non-work time for more family activities (Faunce 1959). It is clear that wives will perceive their rights quite differently when their husbands have more time than will wives of husbands with less free time. The failure of husbands to redefine their duties and rights, as more time becomes available, can only result in strain in family role relationships. It has been recently demonstrated that marital satisfaction is directly related to the perception that ones' marital rights are effectively fulfilled by one's spouse (Scanzoni 1970, 1972). In this case, one spouse's rights are the other spouse's duties. Given the companionship ideal of modern marriage, it may also be readily recognized that spouses with little time to be together will complain and likely become disillusioned with marriage (Popence and Disney 1960; Blood 1962). Accordingly, it would seem apparent that the amount of time available, as it affects both the role relationship and the opportunity for space propinquity, will have a significant impact on the marital system.

The amount of access of fathers and mothers into the life space of their children can also have a significant influence on the socialization of children. The relative presence of the unemployed parent and the absence of the employed parent exposes the child to a selective set of values, role relationships, and personality traits. Typically, children are systematically exposed to day-time mothers and night-time fathers. Many children will come to believe that there is something very right about this form of time-organized role relationship. Indeed, it is frequently suggested that the role of father, as seen through the eyes of children, is "husband of mother" (Benson 1968). The fact that younger girls with older brothers tend to be both more feminine and more masculine than girls with older sisters, whereas younger boys with older sisters tend to be more feminine but less masculine than boys with older brothers, is typically attributed to the more accessible role

of mothers in socializing their daughters (Brim, 1958).

Should household time be significantly altered by a move to a new community to assume a position that requires the husband-father for an extended time period daily due to commuting and over-time consideration, family roles will of necessity be severely altered. Dependent wives who have difficulty relating to others are more likely to experience severe problems of adjustment. If children in such situations look to their father for feedback, counsel, and play times, it is likely that the entire family will suffer disarray. "Lonesome" wives may well turn to other sources of companionship and children in such situations to adventuresome and/or deviant activities. These, and related matters, have not been systematically explored in any study to date.

4.2.2. Distribution of time available

When time is available for family members to interact poses a different set of issues. Spouses employed on the evening shift are obviously exempted from most of the "night life" of their families and will, accordingly, have little exposure to their children during the typical work week. The day-time spouse will have a unique set of role obligations and rights. Family activities will be limited to weekends and subject to competition from other social obligations. Unemployed spouses, under these circumstances, will find themselves with increased duties to their children and proportionately greater involvement in parent-child, family and extra-family activities. The scheduling of most leisure activities will necessarily preclude the participation of the employed spouse in family leisure pursuits.

Employees on the midnight shift, in contrast, will have proportionally greater time access to their children but considerably less time with their spouses due to the scheduling of sleeping hours. It is clear that the nature of husband-wife companionship and the system of role reciprocity will be directly related to the time demands of the work place. Sexual interaction, for example, will typically occur before the spouses separate for several hours, one to work and the other to sleep. Other time schedules, however,

permit spouses to engage in sexual relationships at the beginning or as part of extended time periods together. Employees on rotating shifts, irregular hours, impromptu call, and extended absence combined with extended presence also pose differing problems for family role obligations and interaction. Marino (1976) reports that shift workers have greater problems with mental health and the social health of the family suffers. Reference is made to a study by Alcan (1974) which found that a 7-day shift rotation had a high and increasing turnover rate due to family stress. As a result, Alcan reduced the number of people on the graveyard shift. Case studies of family relationships frequently reveal the frustration of spouse and children alike where fathers are called away "in the middle of", the conference had to come at "this time of the year", and "we make out the best we can while he is up North for six months".

Role relationships and socialization processes within dual career families (where both spouses are employed) suggest an even more complicated set of analytical questions. It is apparent that "our society makes it very difficult to have two careers in the same family" (Holmstrom 1972:1). Where both spouses are employed at the same time, household and related family responsibilities must either be set aside until later or "sub-contracted". Typically, most of these responsibilities are yet to be done when the spouses converge on the household. Even when the system of role reciprocity is ideal - egalitarian (joint participation), which it frequently isn't (Holmstrom 1972: 59-85), an efficient and well-organized use of the limited time available is essential. Among other things, these goals require energy -- sometimes a scarce resource where the demands of the work place require recuperative time use (Faunce 1959). Further, the fulfillment of the intimacy and relatedness needs of children are frequently most salient at after-school or after-sitter time periods. In consequence, the use of non-work time by dual career spouses can easily be a time of strain, if not conflict. The negative influence of marital conflict on the attitudes and behavior of children and adolescents has been well established (Dager 1964; Larson 1974). Similarly, the influence of variable

dual career time schedules on both role relationships and socialization are apparent. Families where mothers work days and fathers work nights, for example, provide selective role models to children and require marked adjustments in companionship and role expectations between the spouses. Most of these issues remain to be explored. The applicability of these factors to family life in resource communities would seem apparent.

4.3. FAMILY AND CRISES

The capacity of the family to respond to problems of variant scope and complexity has been a salient theme in literary materials, theatre, theory and research for most of the twentieth century. Writers tend to emphasize the melodrama of families on the verge of collapse, as illustrated in the apt description of typical literary concerns below (Hansen and Hill 1964: 782).

When a man meets stress, his family, willing or not, shares the anguish of his pains. He loses his job, and seeds of dissension are planted. Tensions course through the family as hardships increase; irritations chafe once smooth relationships and suppressed hostility crackles momentarily into view. The interplay within the family builds toward an emotional climax, and as the climax nears, bitter antagonisms creep from hiding and gnaw at the ties that bind the members. Often, unsuspected strengths appear to counteract antagonisms as the family stumbles toward its own tragedy or exaltation.

While this particular description emphasizes the loss of job on the part of the husband and father, it could just as well be the loss of a home in a tornado, the loss of a child in a bombing raid, the birth of a mongoloid child, a teenage daughter running away from home, the discovery of infidelity, a growing distaste for the community in which one lives, unacceptable demands by industry or government that induce family conflict, and any of a host of factors. Generally, families may be subjected to several different, though interrelated, types of problems: natural disasters such as tornados or floods; political abuse such as bombing raids or political expropriation or deportation; social stressors such as unemployment, depression, inflation; environmental stressors such as

pollution, inadequate sources of energy; dismemberment stressors such as runaway children, desertion, divorce, temporary separations such as war separations, institutionalization (prisons, mental hospitals), suicide and death; relationship stressors such as alcoholism, drug addiction, infidelity, egoism, delinquency, emotional and physical illness; and role transition stressors such as a new job, a new community, the addition of another family member (such as the first child), widowhood and retirement.

The earliest studies of the processes of adjustment and disintegration within families were conducted during the depression and war years during the late thirties to early fifties. Angell's 1936 study reports on adaptability and integration among fifty families who had a lasting decrease in real income of 25 percent. Eight types of families were identified varying from nil effect (high adaptability and high integration) to high effect (low adaptability and low integration). Komarovsky (1940) and Bakke (1940) both studied the response of families to the sudden unemployment of the husband-father. Pronounced adjustments were required which appeared to occur in stages:

1. Momentum stability - living off savings, or other resources, pretending the problem is minor.
2. Unstable equilibrium - wife goes to work and finds various household activities to keep husband occupied.
3. Disorganization - withdrawal from social life, husband loses status in family and struggles with identity problems.
4. Experimental readjustment - among those families that made it through stage three, there was a recommitment to "make it" somehow, however minimally.
5. Permanent readjustment - the determination paid off, the husband found work, and routine of life returned to an acceptable state.

Komarovsky's study in particular emphasized the serious problems in role reorganization and family authority patterns as a result of the husband's loss of status. Economic failure was not simply a loss of income, it was a significant loss of prestige to

the male ego. None of the fathers in any of the families studied was able to accommodate to the changed role relationships.

The most systematic, indeed classic, study of the period was conducted by Reuben Hill and associates (1949). Families in Stress describes the attempt to measure the effects of temporary war separations of husbands and fathers, and their eventual reunion, on family adjustment. Three major indicators of adjustment were identified: the degree of hardship imposed by the separation and reunion; the relative resources of the family (role structure, role flexibility, and previous history with crisis events); and the ways in which the family defined the crisis event. Each of these indicators were employed in assessing the processes of family adjustment over time. Five time periods were distinguished:

1. pre-crisis family situation - role structure and flexibility of the family;
2. anticipatory reactions to crisis - how well the family did or did not prepare for the event;
3. immediate reactions to crisis - the immediate emotional and organizational impact on the family;
4. long-run reaction - emotional and behavior patterns of wife and children; and
5. final readjustment - state of reorganization and adjustment established.

This pattern of response later became known in sociological circles as the "roller coaster profile" (Hansen and Hill 1964). Figure 3 illustrates family processes of adjustment. The dotted lines indicate there was not a standard response by all families. Families were variously prepared, variously defined and variously responded to the potential crisis-producing event. In general, it was found that families with a flexible role structure, and experience with preceding crisis events, tended to define the event in less "crisis-oriented" ways and recovered from the event both rapidly and successfully. Specifically, adjustment to the separation event and the reunion event was found to be significantly related (0.05 level or greater) to the following family characteristics (Hill 1949: 158-159). Findings that are in one column but not the other were not significant in the other.

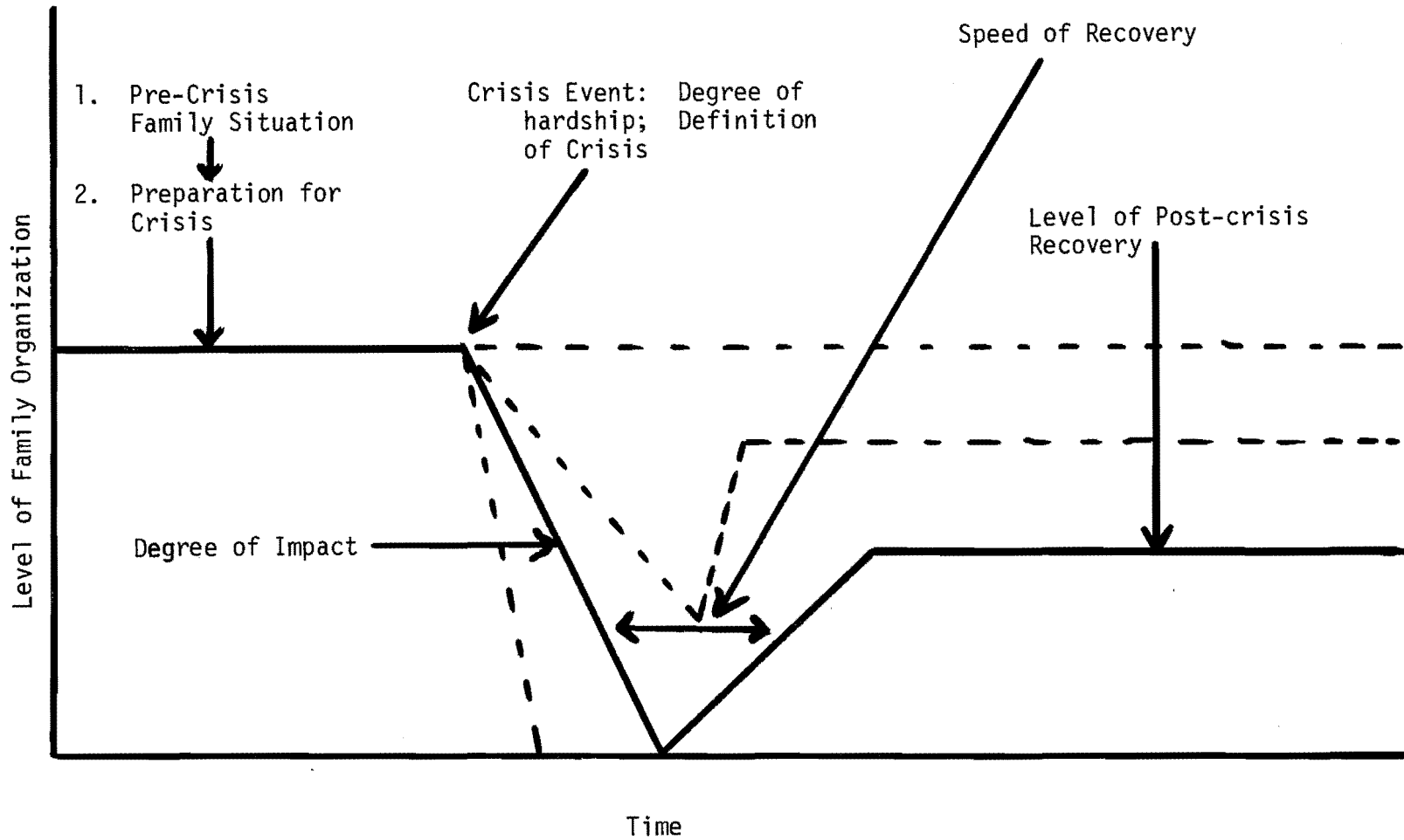


Figure 3. Roller coaster profile of family adjustment.

Adjustment to Separation

Wife's childhood experience positive

Readiness for marriage

Higher social status in community

Higher occupational level of husband

Smaller family

Wife - high marital adjustment score

High overall family integration score

High overall family adaptability score

High stability over time score

Higher levels of affection

Fewer hardships in separation

Supportive patterns of child discipline

Frequent letter writing each month (wife)

Adequate communication

Frequent furlough or visits

Understanding between husband and wife
concerning contacts with opposite sex
during separation

Acceptable opportunities for affectional
outlet

Ability of wife to manage without husband

Need of wife to be dependent on husband again

High self-sufficiency score (wife)

Adjustment to Reunion

Readiness for marriage

Commitment to marriage

Democratic means of settling disagreements

Higher occupational level of husband

Wife - high marital adjustment score

Husband - high marital adjustment score

High overall family integration score

High overall family adaptability score

High stability over time score

Higher levels of affection

High separation adjustment score

Frequent letter writing each month (wife)

Adequate communication

Frequent furlough or visits

High self-sufficiency score (wife)

Husband sees family as morale booster

Few hardships in reunion

It was found that the most influential factors in explaining separation adjustment were the family's recuperative resources and the relative degree of hardships created by the separation situation. The families who had the greatest difficulty adjusting, in terms of both the speed and degree of recovery, were solitary families characterized by extensive past mobility and transiency or families whose relationships with relatives and neighbors were strained or became strained during separation.

Although all of these studies are dated, they stand out as uniquely important and representative of the relationships among culture, family impact, and quality of life issues during this time period.

Studies of family adjustment since this time have dealt with many differing types of crises including the response of the family to alcoholic husbands and fathers (Bailey 1961; Jackson 1956), the impact of medical or psychiatric problems on the family (Glasser & Glasser 1970; Barsch 1969; Davis 1963; Neuhaus 1974; Szurek & Berlin 1969), the extent to which the birth of the first child represents a crisis to a married couple (LeMasters, 1957; Russell 1974), family life in poverty stricken areas (Glazer & Creedon 1968; Minuchin 1967), and the life style of multiple-problem families (Schlesinger 1969). Although the nature of the potential crisis event is of a different order in each of these situations, the processes of family adjustment were found to be quite similar to earlier studies in both content and sequence.

Potentially, nearly every basic attribute of husband-wife and parent-child relationships can be significantly affected by a crisis event.¹ The results of the crisis can be family dis-

¹The meaning of a family crisis event is ambiguous. This is partly due to the fact that theorists and researchers alike do not use the term consistently or objectively. LeMasters (1957), for example, in interviewing couples concerning their reactions to the birth of their first child, defined crisis in terms of loss of sleep, increased costs, decreased social activities, and a decrease in the frequency of sexual

integration such as divorce, family violence such as murder, wife or child beating (Steinmetz and Straus 1974; Gelles 1975), the establishment or reinforcement of marital and family conflict and dissatisfaction, or simply, as in the case of an intolerable or unacceptable community situation, moving away from the source of the crisis. It is essential to emphasize, however, that the cumulative evidence from studies of crises events indicates that families do not respond the same way. Based on an extensive review of the above literature, several basic dimensions of family response become apparent. First, families with flexible systems of role organization appear to be more adaptable to both minor and major changes. Rigidly organized families are somewhat resilient but "shatter" more rapidly under prolonged problematic conditions. Relatively unorganized families are unable to respond to new role demands because existing role responsibilities are already unresolved. This can be seen in crisis studies as identified above as well as in simple adjustments to work roles, relations with relatives and related aspects of family-community contact (cf. Bott 1971; Young and Willmott 1973). Second, families with relatively strong affective ties and fulfilling interpersonal relationships are considerably more adaptable in problematic situations than families with relatively hostile or detached emotional ties. These might be termed as families with adequate psychological resources. It must be added, however, that in such families emotional ties are quite unstable under conditions of serious crises. In such conditions families with flexible roles and positive affect are able to adjust

intercourse. Later studies of the reactions to firstborn children (Russell, 1974) found evidence that the birth implications were only moderately "bothersome". It is apparent that crisis can be readily established by the type of questions respondents are asked. However, the more important point is that families define crises differently. Some families will define a crisis event in terms of broken routines, changing role requirements or bothersome demands. Other families, in contrast, will define the loss of a child as a matter to be "taken in stride".

roles and positive affect are able to adjust more efficiently and effectively (Hansen and Hill 1964).

A third factor, less commonly assessed in research, is the overall goals of the family unit, typically defined by the parents (Bossard and Boll 1950; Farber 1964; Handel 1972; Carisse 1972). Family goals reflect on the nature and frequency of contact with relatives and non-family persons, involvement in community institutions and organizations, life-style preferences and commitments, openness to information and exposure to mass media, orientations to marriage and family priorities, and related factors. The empirical evidence concerning the influence of family goals is yet unclear. However, by implication, the effects of various types of goals on family adjustment seem apparent. Families oriented to the autonomy and freedom of each individual family member, for example, may be expected to be more detached and unconcerned under conditions of stress. Families with spouse-centered goals, in contrast, would typically reflect a basic commitment to spousal gratification and a preponderance of couple rather than family activities. Family-centered goals would typically assign priority to the relatedness needs of children and will tend to de-emphasize spousal needs, interests, and concerns. In consequence, the definition of a crisis will vary with family goals. Moving to a new community and thus requiring a change in schools for their children will reflect less of a crisis event for spouse-oriented families than it would for families with family-centered goals. Similarly, individual-oriented families will experience minimal crisis in the event that a spouse assumes a new position requiring extended periods of separation.

Considerable research has also been carried out with respect to the transition out of and into roles. This literature is relevant to the adjustment of the family to crisis events because crisis typically involves the loss or gain of roles as well. Rather than review all of this literature in detail, the summarizing and integrating work by Burr (1972) will be employed. Burr identified six basic factors which have a significant influence on role tran-

sition. The direction of the relationships are indicated with a + and -.

Ease of transitions into roles

- 1.+ Role clarity (amount of information about role prior to entry)
- 2.+ Anticipatory socialization (amount of training about new role)
- 3.+ Definiteness and/or importance of procedure in transition
- 4.+ Degree to which roles facilitate goal attainment
- 5.+ Degree of role strain in preceding roles
- 6.- Degree of normative change required in new role.

By implication, the ease of transitions out of roles would be facilitated by the absence of role clarity, training, a public transition procedure, dissatisfaction with goal attainment, excessive role strain (such as role conflict, role incompatibility), and excessive role demands associated with the role.

It is emphasized, however, that role transition is typically conceptualized as an individual problem of adjustment and tends to ignore issues in couple or family adjustment. For example, while a husband may find the movement into a new role, such as a new job in a new community, quite uneventful, his wife may have considerable difficulty adjusting because of differing conceptions toward the roles previously occupied. Even so, these differences can be analytically distinguished and their inter-relationship examined empirically.

The preceding analysis has largely emphasized the internal characteristics of family adjustment to internal and external stressors. It has been suggested that the transition to new roles is inherently both an individual and family event affected by both individual and family attributes and by the characteristics associated with the new role itself. It is also important therefore to briefly note the importance of community response to new role occupants, to new family units and to families experiencing crisis. It is apparent

that the family is seldom a social island. The community in which the unit resides, as well as accessible friends and relatives, can be a valuable resource defining and facilitating coping strategies or in helping to remove or reduce the intensity of the irritant. Hansen and Hill (1964) specify four different types of community response to crisis events which typically affect families: therapeutic, social welfare, repressive, and persecutive. Therapeutic responses might include the provision of housing or financial aid in a disaster like fire or the provision of counseling services to families with marital and parenting problems. The provision of aid to unwed mothers, families with inadequate incomes, etc. are illustrative of the social welfare response. Repressive responses tend to emphasize the control of dissent or verbalizing dissatisfactions through veiled threats such as the loss of a job, social isolation and related tactics. Similarly, persecutive responses reflect acts of discrimination or social distance on the basis of race, ethnicity or creed. In limiting their analysis to the response to crisis-potential events, Hansen and Hill failed to deal adequately with the fact that a community can induce family problems of crisis potential. It is apparent that both repressive and persecutive responses can induce internal family crises or existing internal family problems can be facilitated. Similarly, the absence or inadequacy of therapeutic and social welfare services, inadequate recreational entertainment, and occupational opportunities, inadequate housing and transportation, geographical isolation (without compensatory community amenities or inexpensive means of contact with "the outside world") and many other community factors, whatever their justification, can either facilitate existing family problems or induce internal family conflict.

The preceding section (4.2) identified the importance of time as a factor in family relationships and suggested that work roles are the predominant determinants in time allocation and distribution. It may also be suggested that one's employment situation can play an instrumental role in responding to and inducing family crisis. Company policies with respect to low interest loans, sick

leave pay, maternal and paternal leave provisions with guaranteed reinstatement, provisions of extended holidays, subsidy programs for housing, flexible work hours, and related factors can provide support to families during problematic periods while at the same time facilitating family adjustment. In contrast, company policies which ignore marriage and family concerns in promotions, transfers, holiday schedules, work schedules, hiring programs, fringe benefit provisions, work conditions, and related factors may exacerbate existing problems or induce greater family conflict.

4.4. SUMMARY

The basic findings of this section are summarized in Figure 4. It is emphasized that the materials available, although representing different analytical and empirical domains in family analysis, are interrelated. For example, the adjustment of wives and children to mobility are aspects of family adjustment to new roles. Similarly, as indicated in the summary, the capacity of the family to adjust to crisis events is similar to transition in families. These findings, along with those of the materials on mobility, resource communities, and native communities, will be integrated in Section 8.

Adjustment of wives to mobility

Joint decision with husband to move
Involved in planning of move
Exploratory trips to new community
by both husband and wife
Wife's friends in new community
same as husbands
Informed of husband's job
Friendships prior to move
Ability to establish new friends easily

Adjustment of children to mobility

Positive parental attitudes toward
new community
Positive adjustment of child prior
to move

East of transition into new roles

Role clarity
Training
Definiteness and/or importance of procedure in transition
Degree to which roles facilitate goal attainment
Degree of role strain in preceding roles
Minimal change in role demands

Adjustment of families to "crisis" (new roles)

Flexible role organization
Satisfying interpersonal family relationships:
commitment to marriage
democratic problem solving
adequate communication
husband-wife similarity in role definition

Crisis defined as moderate
Facilitative community response
Facilitative response of employer
Access to kin, if important
Realizing family goals
Acceptable work schedules
Acceptable non-work time opportunities

Figure 4. Summary of findings on family impact.

5. CHARACTERISTICS OF RESOURCE COMMUNITIES

The materials reviewed in the preceding sections have emphasized the general issues in geographical mobility and family well-being in social impact analysis. As will be seen, these data are directly relevant to understanding and explaining social patterns in resource development areas. The focus of the report now turns to research on resource communities in northern development areas of Canada in particular. There are few studies that deal directly with social impact issues and, as Riffel has pointed out (1975), there are little data on individual and family well-being.

The following review, as in each of the sections to follow, emphasizes materials that are most relevant to family impact analysis.

5.1. MOVING 'NORTH'

5.1.1. Reasons for moving

Moving from one area to another is a common attribute of the North American psyche. The review of the literature on geographical mobility in Section 3 demonstrated that most move for one or more of six reasons: transfer, status or income aspirations, inadequate housing, housing dissatisfaction, dissatisfaction with neighborhood, or the nomadic spirit. Moving to isolated, frontier, and somewhat hostile (e.g. climate) areas, however, would seem to be a decision of a different order. This section reviews the limited research available.

Of the research available, Jackson and Pouchinsky (1971) provide the most definitive information on the reasons for migration

¹It is important to note that the research on resource communities to date is not representative or conclusive. The minimal information available may be thought of as illustrative of general patterns. Material on the Fort McMurray area is to be discussed in Section 7.

to the North. The study is based on a random sample of 121 miners and a non-random sample of 55 professionals living in four northern mining communities. Miners identified four major reasons for leaving their community of origin, typically smaller rural communities: job dissatisfaction, a job without a future, inadequate housing, and the escalating cost of living. The selection of the community of destination was based on their perception of better job opportunities, better recreational facilities, better standard of living, a slower pace of life, and the recommendations of others. About half of the migrants sought advice from relatives outside their immediate family and 71 percent consulted both family and friends in making the decision to move. One in four obtained a job before moving; most obtained a job within a month after arrival. Previous mobility was not a unique characteristic of these migrants, compared to movers elsewhere, but some 30 percent had moved five or more times previously. The more mobile immigrants had a history of job instability.

Professionals left their previous community for similar reasons as miners but they also specifically mentioned an inadequate social life. The reasons for selecting the community of destination were identical to those for miners. Although about 50 percent consulted with others in making their decision, few consulted with their family, most talked with friends and people at work. Miners, in contrast, did not consult with fellow employees and consulted actively with their families. Only 4 percent of the professionals did not have a job before they moved.

In a similar but less sophisticated study of migration to three company towns in northern British Columbia, Porteous (1976) interviewed a random sample of married residents concerning their opinions as to why people came to their communities. Most of the residents believed that there were three predominant reasons: (1) the drive to get rich quick; (2) the newcomers couldn't make it elsewhere; and (3) attempting to carve out a new way of life. A non-random sample of professional people in various northern communities in Alberta (VanDyke 1975) believed that boom

towns are a collection area for people looking for exceptional economic gains and who have been unsuccessful in other communities. Both Riffel (1975:31) and Lucas (1971:47) also report that the prime motive in moving to resource development areas is economics. In Matthiasson's (1969) study of residents in Fort McMurray (Matthiasson 1971), the most prominent reason for moving to this resource town was employment (given by 77 percent of the sample). The next reason given was a new life (only 19 percent). Most of the sample (52 percent) had moved five or more times prior to coming to Fort McMurray.

It would seem apparent that the predominant reason for going North, from the perspective of the worker, is employment. The migrant is looking for a better job and a higher income. Behaviorally, the migrant sees these two aspects of job getting as interdependent. His disposition toward preceding occupational situations is structured in terms of his hope for the future. Local opinions toward the motives of migrants, however, emphasize money and lack of success in preceding jobs. These would appear to be more stereotypical than fact, just as the migrants reasons may be more aspirational than realistic.

Although I have not reviewed the literature on single workers in the North, it would appear obvious that the intentions of the single male migrant are distinctly cash-oriented and temporary-stay oriented. This would likely be perceived similarly by employers, locals and the migrants themselves.

5.1.2. Characteristics of movers

Immigrants into resource development communities in many respects do not differ from movers in general. According to Riffel's (1975) review of the literature, he concluded that movers tend to be young married workers with young and growing families. Unmarried migrants are typically single males. Few single females migrate to frontier communities. Due to the fact that resource communities are typically constructed near native settlements, there is a higher number of native migrants into these 'new' towns.

Riffel (1975: 12-13) suggests that the characteristics of migrants vary in terms of the relative maturity of town development.

Prospecting to survey stage - short term, summer, single male workers; if there originally, native people in majority.

Industrial and town construction - mostly single men, some young married workers with families; natives in minority.

Industrial operation and community improvement - increasing number of young married workers; decreasing number of single males.

Industrial and community operation - young married workers in majority.

Community maturity - Balanced population structure in terms of age and sex.

These basic findings are confirmed by Porteous (1975), Lucas (1971) and others. The study by Jackson and Poushinsky (1971) of migrants to several northern mining communities in Ontario found certain similarities in this pattern (e.g. younger married workers, ethnically diversified, and typically immigrants within Canada). However, due to the maturity of these mining communities, the sex ratio was nearly equal and the migrants tended to be from rural areas, i.e. rural migrants move to the North because there are more jobs available than in major urban centres. In a recent study of mature resource communities (Doyle et al. 1976) - Whitehorse; Yukon, La Ronge, Saskatchewan, and Lynn Lake, Manitoba, it was found that over 75 percent of the respondents were married, and were born in Canada. Most had children and were nuclear families. Nearly half had changed residences within their community and had moved to the community itself within the past five years.

In fact, it would appear that little is known about the characteristics of movers or their reasons for moving to resource development areas. While job, neighborhood or housing dissatisfactions may explain general patterns of geographical mobility, it is emphasized that resource communities are unique destination points for the typical urban dweller. The significance of these

issues will become apparent in the sections below.

5.2. PROBLEMS AND SATISFACTIONS IN RESOURCE COMMUNITIES

The existence of community satisfaction, regardless of what kind of community, likely depends on the relative quality of life. The meaning of this concept is yet unclear. Riffel (1975:4), in his review of quality of life in resource towns, defines the concept as "the level of well-being of the residents and ... the suitability of the town environment." In an earlier paper, however, he emphasized the importance of equal opportunity and by implication assumes this is an elementary part of well-being (Riffel, 1972:9): "the basic notion of equality of opportunity is that it is morally, socially, and economically indefensible to allow social and economic obstacles to impede the development of human capacities."

In an informative paper, Gerson (1976) outlines the basic issues in quality of life analysis. He suggests that there are two competing orientations. The individualist tradition emphasizes the degree to which an individual succeeds in accomplishing his desires despite the constraints of the environment. The transcendental orientation concerns the degree to which an individual carried out his place in the social order. These competing traditions are negotiated, wherever possible, in achieving an acceptable quality of life for all concerned. Gerson identifies four interrelated central quality indexes.

1. Money. It is argued that money is not the sole criterion of life, it is only an element. Income itself tends to be divorced from the context in which it is acquired and the history of the people receiving it. In order to assess the importance of this element, Gerson suggests that the sources of money, its adequacy, the degree of savings and possibility of savings, and debt be explored.
2. Time. The role of time budgets, rhythm, pace, schedule and flexibility with respect to work and non-work roles are emphasized. A recent paper by Chapin (1971) argues that quality of life is primarily an issue of discretionary time at the disposal of the individual.
3. Sentiment. Sentiments have to do with the exchanges

between people with respect to the value of affect in both the constraint to give and the resource to receive. The losses and gains in sentiment are emphasized in assessing the quality of life.

4. Skills. Gerson, in this case, is concerned with the relative abilities, availability of training, flexibilities in job description demands, and related factors that influence the definition of quality of life.

These distinctions highlight individual dimensions of quality. It is well also to emphasize the family dimensions to quality of life. Both time and sentiment issues relate to the family but they do not capture the essence of this unit of emotional intimacy. The resolution of each of these issues for the individual may still leave unresolved the possible dissatisfactions of other family members with the quality of life in the community. The internal dynamics of marriage and family relations and the articulation of family needs with respect to health, education, recreation, home management, and various social services are also quality of life matters. Although not all will have families and others will find life fulfilling apart from their families (e.g. divorce), it remains apparent that the family remains the basic institution for the majority and the shape of quality of life dispositions is heavily affected by the extent to which the relations with one's intimates are facilitated. In this sense, concerns about money, time, sentiment, education, health, recreation, housing, social services, etc. are sorted and sifted by family members in defining the quality of life.

It is apparent also that achieving an adequate quality of life has varied meanings to differing people in differing situations. Historically speaking, for example, moving west meant the opportunity to establish a new life frequently against overwhelming odds. There were no jobs waiting and no companies that might provide work. The typical motif was to live and make do with the land, climate, and the sometimes unfriendly natives in the area. Most who pursued the frontier dream hoped to make it through sheer determination. Family members shared a kind of

excitement in the dream and struggled toward the goal with a basic unity of effort. Quality of life questions in impoverished areas, in contrast, are defined in terms of a kind of enduring futility. Most seem to share in the quandary of little opportunity for change and believe there is little anyone can do about it. Families tend to drift through their existence with a kind of resignation to the inevitable.

Quality of life issues in resource development areas are of a unique order. Although a frontier area, and even the frontier spirit is the prevailing mood, the people who come are typically used to the "good life." Typical migrants come from communities where the culture is relatively urbane (affluent, amenities, recreational and entertainment options, impersonal when desired). Even rural migrants to resource communities typically have lived on the edge of the urbane life style due to easy access. Accordingly, when people move to resource development areas, their dissatisfactions with job or income in their communities of origin notwithstanding, they also carry along some not too obvious "baggage." Such migrants are able to make downward quality of life comparisons: "things are better back home after all." In a similar sense, native migrants, as will be demonstrated later, frequently leave a community with a profoundly different culture. To many of them, this culture becomes inherently preferable after exposure to the culture of the "intruder." In contrast to the non-native migrant, however, the return is really a point of no return because the community of origin is no longer what it was.

It is important in the analysis to follow, therefore, to underscore the differing definitions of quality of life in assessing the problems and satisfactions of resource development communities.

5.2.1. Problems in resource communities

The descriptive evidence available would suggest that the problems of resource development communities are unique, partly in nature and partly in frequency of occurrence. Whether the problems typically identified are in fact unique and the implications

are as far reaching as supposed is largely a matter of the supporting evidence and conjecture.

1. Resource development areas typically involve the establishment of single industry communities.

Large corporations move into these areas and, regulated by government requirements, begin to extract and process energy resources on a massive scale. Energy exploration on this scale involves considerable risk and expenditures; accordingly, the emphasis is on corporate profits. Most residents describe both companies and government personnel as lacking social expertise, proceeding in an unplanned disorganized manner, and ignoring their social responsibilities to the people they employ (VanDyke 1975; Porteous 1976). A common complaint within these communities, particularly by local governments, is the relative absence of self-determination. Citizen participation in planning and development is practically non-existent (Campfens 1972). Dependence on single industry development creates an unstable and transient economy due to the recognition that "boom towns" are frequently also "bust towns" (Lucas 1971).

2. Resource development requires the large scale movement of goods and people.

Most boom towns experience a massive influx of people. Fort McMurray, for example, grew from a population of 2,614 in 1966 to an estimated population in 1977 of nearly 17,000. The people who come are from many backgrounds with respect to both ethnicity and social class. Porteous (1976) found that most residents in his sample thought that this was a positive feature. Although people came from differing backgrounds, there was more social equality in resource communities. Residents in other communities, however, tended to emphasize the problems created by diverse backgrounds (VanDyke 1975; Parsons 1970). The boom character of resource towns frequently necessitates "instant" demand for housing, business establishments and town offices. In the early stages of development (typically during the construction period), mobile structures are common.

3. Resource communities typically have inadequate amenities.

Riffel's review (1975) indicates that there are few recreational programs and facilities, inadequate entertainment options, and only limited counseling and various assistance services to families. Schools are typically overcrowded, the extensive use of mobile units notwithstanding. Mobile housing is deemed inadequate by most of the residents.

4. Resource development typically occurs in geographically isolated areas.

Resource communities, particularly during the construction phase, have only limited contact with the outside world. Generally, travel and transportation out of resource areas to other parts of the world, including one's community of origin, is costly, time-consuming and inconvenient (Riffel 1975). The difficulties of geographical isolation, particularly in the North, cannot be underestimated (Lucas 1971). Even though there is a highway between Fort McMurray and Edmonton, and daily air service, the distance and costs make it impossible for most to leave the city regularly. Local professionals blamed isolation for much of the depression and loneliness among local residents (VanDyke 1975).

5. Personal problems are facilitated in resource communities.

Informants in the Fort McMurray area believed that crime such as assault, suicide, mental illness, alcohol and drug abuse are more common, indeed intensified by life in resource towns (VanDyke 1975).

Riffel's review (1974) suggests that the incidence of mental illness is most common among unemployed housewives. Their husbands are removed for a considerably extended period of the day due to commuting time and work schedules. Female employment is difficult to obtain. Housing is small and confining. The phenomenon of cabin fever is identified in nearly every reference dealing with social impact and mental illness (Riffel 1975; Van Dyke 1974; Lucas 1971; Nickels and Kehoe 1972; Abbot and Kehoe 1972). Psychological problems, indeed, appear to be common in

resource areas. Nickels and Kehoe (1972) describe a variety of behavior disorders and stress reactions resulting from unsettled and changing social structures. In their Whitehorse study, they found that while social needs were fulfilled, the needs of autonomy, esteem and self-actualization were typically unfulfilled. In a similar study by Cram (1972), of 228 mine workers in five geographically isolated camps in the Yukon and Northwest Territories, esteem and autonomy, need fulfillment, and self-actualization scores were consistently low. The Jackson and Poushinsky study in northern Ontario (1971) found that, among miners with high rates of past job instability and mobility, there were high levels of alienation. Among professional migrants, high rates of personal alienation were associated with high occupational level, high father's occupation, attaching strong value to having things to do, concern about recreational facilities, and concerns about climate. However, it may be pointed out that psychological stress isn't the exclusive province of resource communities. Abramson (1968) found that among rural to urban migrants 4 of 5 experienced problems in social integration and 6 of 10 experienced psychological stress. In an unusual and innovative recent study (Nickels and Ledger 1976), an attempt was made to link "cabin fever" with drug prescriptions and time of year used. The study concludes that "during the winter most northerners rather than merely white females have all kinds of problems rather than merely psychological ones, and even the psychological problems which do occur are much the same as those found in southern Canada." It is found that both men and women have "cabin fever" during the winter months. Unfortunately, the study did not attempt to control for the duration or frequency of husband absence.

Although most agree on the significance of psychological adjustment problems in the North, there is disagreement on crime. While the informants in the Fort McMurray area postulate more crime, Riffel (1975) concludes that crime is no more common than elsewhere and juvenile delinquency is relatively uncommon. It is reported that liquor and traffic offenses account for 75 percent of all

unlawful behavior. Although native people make up less than 25 percent of resource communities, natives appear to account for two-thirds of unlawful behavior. Native offenses more often involve crimes of violence or offenses against property, typically under the influence of alcohol. Natives are seldom involved in sexual offenses or traffic violations.

One of the more unique problems mentioned by Fort McMurray informants was the problem of personal debt (VanDyke 1975). It is suggested that residents purchase a number of conveniences and recreational luxuries to compensate for the absence of certain community amenities and isolation from the city. The end result is an unusually high personal debt ratio, per capita. No evidence is offered concerning the significance of this problem. There was no mention of this issue in any of the other literature reviewed.

A number of residents in differing resource communities believe that the type of problems described above are already inherent characteristics of the migrant and cannot be attributed to life in resource towns per se (VanDyke 1975; Porteous 1976).

6. Family problems facilitated by resource communities.

Personal and family problems go together, particularly if the individual experiencing problems is a family member. Family breakdown is typically described as the fundamental problem in resource communities. VanDyke's informants (1975) identify sexual promiscuity, the extended absence of husbands at work, the absence of things to do among housewives, and the separation of families from their kin as the main causes of family breakdown. Family income is lower in resource communities, on the average, because wives are unable to obtain paid employment. There is some evidence of lower aspirations among youth which is disturbing to parents (Riffel 1975). Lucas (1971) also reports considerable family problems created by shift work and extended work-related absences from the home.

The problem of mental health among women discussed above is not simply an individual problem, it is inherently related to marital conflict. Studies of marital conflict among military

families, though not directly related, do offer insight into the dynamics of the problem of boredom. Military families are typically found to experience culture shock precipitated by losing familiar signs and symbols. Military service is said to spawn boredom by making it quite easy and familiar for families to remain in their shelters (McNeil and Zondervan 1971). Boredom creates, in a self-fulfilling way, the desire to avoid outsiders and outside contacts. As boredom increases, social and emotional isolation also increases. In these circumstances, wives turn to their spouses in a desperate way. Their approach and behavior pattern is distinctly dependent. Due to active associations of husbands on the job and related interpersonal settings, husbands are repelled and angered by the increased dependency of their spouses. The more angered they become by the dependency behavior of their spouses, the more dependent their wives become.

The corollary in resource communities seems obvious. The wife, unable to obtain employment, stuck in a small and confined space, separated from familiar symbols, alone for several extra hours each day, finding little of interest to do in the outside community, turns in on herself and clings to the only familiar thing she has, her husband. He is repelled or impatient lacking an understanding of her situation. There isn't any adequate empirical evidence of these patterns in resource communities, but it would seem likely that mental illness, marital infidelity, marital conflict, divorce, or moving "back home" are expectable consequences if these patterns do exist.

7. Resource development appears to have a detrimental effect on native workers and native communities.

Due to the scope of this literature, this issue will be discussed in detail in the next section.

5.2.2 Turnover and community satisfaction in resource communities

According to Riffel (1975:9) the most striking demographic feature of resource towns is the high rate of labor and population turnover: "turnover rates in excess of 200 percent in the construction phase and over 60 percent once an industry is in production is common."

The major study of turnover was conducted among 196 mining companies by MacMillan et al. (1974). Only 67 of the companies responded. The average turnover rate for all responding companies weighted by employment size was 80 percent (42 percent separation and 38 percent hiring). According to MacMillan et al. the turnover rate in the mining industry is relatively low compared to the average for all industries. Whether turnover rates in resource towns are, in fact, distinctly higher than in other areas once the plants are in production is unclear from the evidence I have examined.

Even so, it is apparent that turnover rates are costly to companies and there are inevitable social costs to individuals and communities. MacMillan, for example, estimated that the average cost of turnover per employee was \$584 for separations and \$428 for hirings. For the mining industry as a whole, this would amount to an annual cost of more than \$36 million. Reducing turnover rates by as little as 1 percent would save the average mining industry more than \$4000 (MacMillan et al. 1974: 71-75). Jackson and Poushinsky (1971), in their study of mining communities, emphasize the distinctive goals of companies, individuals and the community. The corporate goal is to extract profits from the operation; the community goal is to provide services required by residents; and the individual goal is to maximize the achievement of individual values. Accordingly, as they rightly suggest, the overall goal of the northern community is one which maximizes community satisfaction and minimizes out-migration.

From a company perspective, several factors appear to be correlated with low turnover rates.

MacMillan's study analyzed characteristics associated with low turnover rates in mining companies, based on responses obtained from company officers. Job stability was significantly correlated with age, proportion married, proportion Canadian, proportion unionized, reduced commuting time, and obviously, the longer one stayed on the more likely he would continue. Wages, work conditions (i.e. working underground), and the proportion of the work force that were males were significantly related to

high turnover rates. In this study, the number of community services had no effect on quit rates.

The study of Jackson and Poushinsky (1971) assessed the social psychological characteristics of satisfaction and the likelihood of leaving the community, based on the responses of the miners and professionals employed in the mining industry. Among miners, community satisfaction was found to be significantly related to having friends in the community, satisfaction with the recreational facilities, entertainment options, and the schools. Community dissatisfaction was related to the climate, unsatisfactory fulfillment of values, higher education level, personal alienation, and past mobility and job instability. Miners dissatisfied with the community expected to be gone from the community within five years. Among professionals, community satisfaction was significantly related to age, high education, high participation in voluntary associations, high work satisfaction, and the value attached to job security, things to do, and shopping. Community dissatisfaction was correlated with the status of the father's occupation, community size at birth, personal dissatisfaction, the belief that one's values were unfulfilled, and dissatisfaction with housing. These variables were found to explain 74 percent of the variance, an unusually powerful statistic for most social science research. Those professionals who expected to leave the community within five years were typically planning to have more children, had higher occupational levels, placed greater value on salary, and were more concerned about entertainment and medical facilities than were those who expected to stay. Those professionals who expected to stay were older, had higher education levels, were distinctly satisfied with jobs and community, were concerned with job security and satisfied with the recreational facilities.

One of the more pacesetting studies of social impact in the North was just recently published (Nickels, Sexton and Bayer 1976). The study was conducted in Lynn Lake, Manitoba, a copper and nickel mining community of 3500 persons (1971 census). At present, this community has an uncertain future and is facing the

the phase down of its mining operations. Data were collected from a non-random sample of 24 couples, 48 persons, between October 1970 and May 1971. Nine members of the sample dropped out for reasons of disinterest, moving away, etc. Several different types of questionnaires, rating forms and psychological tests were administered. Each couple was visited several times over several months for the purpose of data collection. Even though the sample is small and non-random, the data collection procedures were quite sophisticated and the analysis procedures more quantitative than most studies of northern residents to date.

The findings suggest significant differences between males and females. Among females, higher levels of discomfort (neurotic anxiety) were associated with significantly lower levels of satisfaction with town, duties, job, finances, living quarters, neighborhood, neighbors, friends, spouse, oneself, outlook for the future, and total satisfaction. Discomfort accounted for 46 percent of the variance in life satisfaction. Females were found to distinctly require social contacts and community involvement to be satisfied with life in this frontier community. Indeed, shy and retiring females were found to have severe problems adjusting to the North.

For males, in contrast, the two most powerful predictors of life satisfaction were education and intelligence. Either lower intelligence and lower levels of education or both were significantly associated with higher satisfaction with duties, job, neighborhood, neighbors, oneself and future outlook, as well as with overall satisfaction. The less gregarious, less out-going more introverted males were distinctly more satisfied with life in Lynn Lake.

The intention to remain in the community for males was significantly correlated with introversion and satisfaction with town, job, and finances. Just as the employment of the male was the predominant reason for family immigration, satisfaction with employment is the predominant factor influencing whether a male intends for he and his family to stay. The best predictors of

staying for females were their levels of satisfaction with the financial situation for their families and their overall psychological adjustment to life in the North.

Spouse satisfaction scores were obtained from both males and females. The mean level of spouse satisfaction, on a scale from 1 to 7, was the highest of all dimensions of satisfaction for males (5.84), and second highest for females (5.70). Satisfaction with child scores was also higher than other dimensions of satisfaction. Accordingly, correlations between spouse satisfaction and other dimensions of satisfaction were significant. For females, for example, spouse satisfaction was unrelated to work satisfaction. This finding is expectable if there is an absence of stress in the marriage relationship. Marital and family ties are not influential, in the perception of an individual, in one's disposition toward non-family factors (such as work, community, climate) unless one's domestic relationships are distinctly dissatisfying. Unfortunately, even though data were obtained from both husbands and wives, no attempt was made to compare the responses of specific spouses. Further, spousal and parent-child relations were not adequately examined in the study.

Although weather factors represented only a small part of explained variation in satisfaction and staying, both male and female evaluations of weather were more favorable when the days were warmer (in temperature), wetter (in humidity), and calmer (in wind speed).

Two related studies of satisfaction and turnover were conducted by the Center for Settlement Studies in three northern communities in 1971 and 1972: Whitehorse, La Ronge, and Lynn Lake. The sampling procedure varied in each community, typically involving the random selection of households. In the first study, interviews were conducted with the adult home at the time of the visit. The second study, conducted in 1972, involved a mail-back survey questionnaire - modified version of the original interview instrument. The response rate varied from 28 to 36 percent. A quality of life instrument was developed, which the authors recommend for

use in future investigations by others.

The report edited by Nickels (1976) contains three reports, two of which deal specifically with satisfaction and turnover in the three communities (Doyle et al. 1976; and Nickels and Sexton 1976). In general, analysis of the data from the quality of life inventory indicates that residents were most satisfied with scenery, neighbors, and relations with fellow employees on the job and off the job. They were least satisfied with the cost of housing, cost of food, and cost of travel. With respect to the intention to stay, "stayers" tended to be older in age, lower in education level, lived much of their lives in only the one community (at least five years or more), and were home owners. Nearly 1/3 to 1/2 of the respondents, however, were either unable or unwilling to comment on their intended length of stay (cf. Doyle et al. 1976).

The second report specifically emphasized the impact of quality of life factors on residents' intentions to remain in the resource community. Twenty-four factors were employed to ascertain the degree of explained variation in expected length of stay. These factors in total explained 45 percent of the variation. Five of the 24 variables explained 39 percent of the variation. The best predictor of staying was simply the number of years already in the community - the longer one stays, the more likely that one will stay longer. This factor explained almost 18 percent of the variation. The second major variable was home ownership. This factor explained an additional 7 percent of the prediction of staying. Climate and geographical isolation, social life and community activities, and lower education level were the other major predictors of staying. The authors suggest that residents staying in resource communities will be facilitated by (Nickels and Sexton 1976:143):

1. capturing the interests and involvements of new arrivals early;
2. assisting new arrivals in the purchase of a home as soon as possible after they arrive;

3. encouraging residents to take advantage of the satisfying aspects of climate and geographical location;
4. encouraging residents' social life and community involvement by providing interesting and stimulating social opportunities; and
5. providing residents with stimulation to match their education levels.

This study, in all three of the communities studied, found no evidence that people stay in the North because of financial and occupational attractions. Quality of life factors were found to be more important. However, it is well to emphasize that, at least in the case of finances, most northerners have little basis for dissatisfaction.

After reviewing the literature on quality of life and turnover in resource communities, Riffel (1975) concluded that the predominant reasons for the high rate of turnover included: the isolation of the town, the inhospitable climate, inadequate housing, inadequate services and facilities, the predominance of single men, the absence of female companionship, inadequate educational and medical services, few opportunities for employment for married women, difficult working conditions, and the limited opportunities for promotion. The importance of housing in keeping employees in the Yukon and the Northwest Territories is strongly emphasized in the conclusions of Moss (1969). He suggests that the key factor in employee turnover is that "people are not willing to move into second class rental housing located in drab, unplanned, and poorly landscaped areas". He argues in favor of owned housing in that tenants have no financial stake in the community and will typically contribute little to its improvement.

While Moss argues that the key factor in community satisfaction among married employees is housing, Riffel(1975:61) suggests that "probably the most important reason leading an individual worker to leave a resource town is because his family is not happy with life in the town." It is apparent, of course, that these two factors are interrelated, not mutually exclusive. It

would also seem trite to conclude, from the existing evidence, that these factors overshadow all others.

5.3. SUMMARY

The data reviewed in this section are summarized in Figure 5. In contrast to the research on geographical mobility and family impact, the materials reviewed in this section are more descriptive and suppositional in nature. Many of the findings are based on the opinions of local professional people in resource communities (e.g. VanDyke 1975), the opinions of residents about the characteristics of immigrants (Porteous 1976; Parsons 1970), the opinions of company officers about turnover problems (MacMillan et al. 1974), or the impressions of experts as derived from literature reviews and related evidence (Riffel 1975; Moss 1969; Lucas 1971).

Studies of the more mature resource communities are most relevant to areas that have entered the active production phase.¹ A number of these studies are reported in this section. The migrants in the Jackson and Poushinsky study (1971) were typically married and looking for a better situation compared to the rural communities from which they typically came. This study, unfortunately, did not attempt to obtain data on family life and related issues. The recently reported research of the Centre for Settlement Studies represents, typically, both well-conceived and well-conducted analyses of life in northern communities. These studies clearly document the profound importance of quality of life measures in predicting relative community stability, again in relatively more mature resource communities.

There are important differences with respect to the quality of life in resource communities during the construction and production phases. The extraordinary demand for workers in

¹Research on immigrants has been conducted in the Fort McMurray area. This material will be reviewed in Section 7.

mass during construction in isolated communities simply necessitates a majority of single employees. The complexities of attracting families and keeping them, to communities still unformed and undeveloped, belabours the imagination. At the same time, even so, studies of mature communities suggest relatively clear principles concerning both satisfaction and staying. It would seem that the suggestions of Nickels and Sexton (1976), for example, could also operate effectively in construction-oriented resource communities. In this sense, the secret would appear to lie in both planning and massive financial commitment.

The next section summarizes the issues in native communities related to resource development.

Reasons for moving
(as perceived by movers)

Job dissatisfaction
 Job without a future
 Inadequate housing
 Escalating cost of living
 Inadequate social life
 (unique to professionals)
 Seeking better job
 Seeking higher standard of
 living
 Seeking slower pace of life

Reasons for moving
(as perceived by residents
about movers)

Unsuccessful elsewhere
 Seeking a new life
 To get rich quick
 Better job and better income

Characteristics of movers^a

Young, married couples
 Small, young families
 Single males
 Canadian residents
 Higher proportion native
 than to urban areas
 Non-natives from more urban
 areas
 Natives from close-knit
 communities with a
 different and already
 eroding culture
 Consulted with relatives and
 friends about move
 Didn't have job before move
 Professionals: had job,
 consulted with work
 colleagues and friends,
 not relatives

Problems of resource communities

Single industry
 Companies and governments
 de-emphasize social concerns
 Lack of self-determination
 Mass movements of people
 "Instant" facility needs
 Inadequate amenities: entertain-
 ment, recreational facilities
 and programs, schools over-
 crowded, temporary and inade-
 quate housing
 Geographically isolated: trans-
 portation costly, time consuming,
 and inconvenient
 Personal problems: mental illness,
 alcohol abuse, psychological
 stress, lower self esteem and
 autonomy, crime (liquor and
 traffic offenses), personal debt,
 sexual promiscuity
 Housewives' problems: few employ-
 ment opportunities, cabin fever,
 few things to do - boredom
 Family problems: extended
 absence of husbands, marital
 conflict, marital infidelity,
 divorce, lower aspirations among
 youth
 Disillusionment among natives

Figure 5. Summary of Findings on Characteristics of Resources Communities.

^a The characteristics of movers are influenced by the stage of resource development.

Satisfaction with resource communities

Friends in the community
 Satisfaction with recreation facilities, entertainment options, and schools
 Adequate housing
 Owned housing in attractive, planned neighborhoods
 Among professionals: older, high education, active in voluntary associations, work satisfaction, job security, things to do, adequate shopping facilities
 Attractive scenery
 Satisfaction with neighbors
 Satisfaction with fellow workers on and off the job
 Satisfaction with climate and isolation
 Number of years in community
 Active social and community involvement
 Females: satisfaction with financial situation for family; psychological adjustment
 Males: lower education levels and lower intelligence scores; introversion, satisfaction with employment

Dissatisfaction with community and turnover

Preceding mobility and job instability
 Inadequate wages
 Unfavorable working conditions
 Climate
 Unsatisfactory fulfillment of values
 Higher educational level (miners)
 Geographical isolation
 Inadequacy of housing
 Inadequate services and facilities: professionals were particularly concerned with recreation, schools, and medical facilities
 Predominance of single men combined with absence of female companionship
 Limited opportunities for promotion
 Plans to have more children (professionals)
 High occupational status (professionals)
 Marriage and family problems
 Rental housing
 Inadequate social and community involvement
 Females: psychological dissatisfaction, inadequate social outlets; inadequate financial situation for family
 Males: higher education level and intelligence scores, extroversion

Job stability

Older
 Married
 Canadian
 Union members
 Short commuting time
 Good wages
 Favorable working conditions

Figure 5. Concluded.

6. RESOURCE DEVELOPMENT AND NATIVE COMMUNITIES

Resource development typically occurs in areas of Canada where either native Indians or Eskimos have lived for generations. As such, the movement of industry, government, and masses of people into the native environment represents an intrusion, whether welcomed or not, into native culture and organization. Even if natives do not become involved in the work force or life-style of the resource community, the ecology and bio-physical structure of their habitat, their sources of water, food, and livelihood, and the pattern of their collective and communal lives are altered. Riffel (1975) reports that the average resource community is about 25 percent native. The effect of resource communities on their native residents and on natives in the hinterland of resource development is the focus of this section. The characteristics of native culture and personality, demographic and quality of life characteristics of native people, the effects of employment on natives, and the issues in utilizing natives in job programs associated with resource development are considered.

6.1. NATIVE CULTURE AND PERSONALITY

The literature on native socialization, culture and personality is far too broad to review in this report. The first intention is to merely establish, what would appear to be unambiguous, that native conceptions of life vary widely from non-native people and likely have a significant impact on employment habits, and behavioral patterns in resource communities. Second, to suggest that both employment patterns and community behaviors also reflect on the on-going native struggle in coping with a dying culture over which the native has little control.

The following comparative list of characteristics is drawn from the descriptive work of several studies (Helm 1960; Hawthorne 1967; Callihoe 1975; Bowles 1975). The distinctions between native Indians and native Eskimos are not identified partly because the literature on northern development tends to ignore the differences and partly because the commonalities are brought

into bold relief in response to resource development.

<u>Native culture</u>	<u>Non-native culture</u>
constraint in relations with others tending toward emotional isolation	relatively forward in relations with others tending toward aggressiveness
fear of aggression from others	little fear of aggression
repression of own hostile impulses	pride in expressing hostilities
free agent mentality in the sense of self-determination and self-sufficiency	similar mentality except combined with a drive to please others to the extent of conformity
avoids or withdraws from sources of anxiety	tries to cope with anxiety
goals are group oriented	goals are individual oriented
past-present oriented	future oriented
nature is seen as part himself and supernatural	nature is seen as something to conquer
nonverbal	verbal
opposed to staring	direct eye contact
loose; short handshake	firm, aggressive handshake
non-possession oriented	private property conscious
pragmatic, patient	right way, impatient
acts only after seeing how to do it	trial and error, experimental
communal, collective	individual

The contrast between the self-determination of natives and non-natives is of particular importance. The most explicit understanding of this difference is with respect to agreements. When natives make agreements (Bowles 1975:8):

... it is accepted that the present interest may take precedence over the original arrangement and that a person has the right to judge which should claim his attention. This may extend to formal agreements such as rental payments, loan repayments, or credit installments. To be rigidly bound by agreements and promises is antithetical to maintenance of control over one's own actions and affairs.

From earliest childhood, natives regard non-interference in the affairs of others as appropriate, even moral, and react to attempted coercion with disgust and bewilderment. Due to this disposition, natives tend to personalize the positions they hold. Holding a position of authority such as to be an RCMP officer would be incompatible with their understanding of their relationships to others. Natives do not think in categories; they see their actions, regardless of category, as reflecting their personal disposition toward others (Bowles 1975; Hawthorne 1967).

The response to the culture and concerns of native people, according to Riffel (1972), has not been facilitative. Riffel argues that the social institutions of non-natives tend to alienate, reject or discriminate against native peoples. Second, due to the response of society, the self-concept and personal evaluations of competence among native people have been eroded. In consequence their heritage has been lost and replaced by a demeaning self-image. Third, the cultural differences between natives and non-natives simply are not employed in the delivery of services. The goals of the natives, it is suggested, are unclear, and even where they are articulated, the means to reach them are not readily available, partly because of the carriers created by society and partly also because the native believes the effort is futile.

It may be emphasized, however, that the issues in the contact between native and non-native culture in resource communities are neither this simple nor are they this one-sided. Culture shock is stress-inducing but does not need to lead to cultural genocide. It would appear evident from the literature reviewed on family impact, that there are ways to ease the transition and facilitate the stabilizing of native culture in the long run. These issues are to be discussed in Section 8.

6.2 QUALITY OF LIFE AMONG NATIVES

The demographic and quality of life profile of native peoples reveals significant disparities compared to the non-native

characteristics.¹

1. Family. Natives have a higher birthrate, larger families, more children under the age of sixteen, few older people (above the age of 65), and nearly twice as many illegitimate births. Native people tend to marry younger and faster, have a higher rate of divorce and separations, and a larger number of desertions. More than half of the families have more than six members.

2. Physical well-being. Death rates and the proportion of still-born children are higher than among non-natives. There are 70 infant deaths per 1000 persons compared to only 26 in the total population. The age at death, on the average, is nearly half that of non-natives. While medical services are free, few have access and/or distrust white medical care.

3. Personal adjustment. In general, natives have higher rates of alcoholism, criminal behavior, delinquency, and prostitution. Migration from rural to urban and back to rural areas is common. Dependency on welfare is ten times the national average.

4. Housing. Riffel reports a survey in Manitoba which found: 76 percent of Metis homes had electricity compared to the 99 percent national average; only 52 percent had telephones; and only 11 percent had running water compared to the national average of 96 percent. Housing itself was small, an average of 585 square feet (54 centares), half the size of the average house. Most of these were limited to 3 rooms. Accordingly, distinctly larger families live in less than half as much space as the average Canadian.

5. Knowledge and skills. Riffel notes the findings in the Hawthorne study (1967) that fewer than 10 percent, between the ages of 16 and 18, were in school. Less than 5 percent of the total native population had completed grade nine. A study by Ekistic

¹This section is heavily based on the summary of demographic and empirical materials on natives by Riffel (1972). Statistics reported are based on 1965 vital statistics data for Treaty Indians, various statistics from other sources and various reports.

Design in Fort MacKay (1975) found the average education level to be grade six.

6. Legal justice. Although native people make up only 3 percent of the population of Winnipeg, 27 percent of all persons arrested in 1969 were native Indians. Similarly, while 7 percent of the Manitoba population is native, native Indians make up 45 percent of the total population of correctional institutions. It is repeatedly demonstrated that 75-90 percent of native crimes are alcohol-related.

7. Employment security. In a survey of 1000 families in Manitoba, reference not provided, it was found that 27 percent were on welfare, 4 percent unemployed, 16 percent seasonally employed, and 37 percent were employed full-time. Among those employed full-time, however, 84 percent earned less than \$4000 a year. Unemployment and welfare is ten times the national average among natives. In a 1965 study of 200,000 registered Indians, 75 percent earned less than \$2000 a year.

I have not attempted to review more recent data in this report but it is predictable that these patterns of life remain much as they are reported in Riffel's 1972 paper. There are undoubtedly modest improvements in the quality of life standards of native people but it would also seem apparent that national averages have also improved for the total population.

The key dimensions associated with the above statistics lies in the impact of employment in resource development areas available to native people. Any evidence of improvements in employment programs, training opportunities, or increased satisfactions among natives may be significant factors in predicting quality of life changes among native peoples. The research on these issues is considered next.

6.3 NATIVE PROBLEMS IN RESOURCE DEVELOPMENT AREAS

Studies of the impact of resource development on native people are not consistent. One major research study of the social and economic impact of the proposed arctic gas pipeline (reported

in six volumes by Gemini North Limited 1974) on native people tends to emphasize the negative consequences, though the evidence is viewed cautiously. The other major research study supported by Gulf Oil Company seems to suggest that the consequences are generally positive (Hobart and Kupfer 1972-1973; Hobart 1973-1974). Both of these studies are reviewed in detail below.

6.3.1 The Arctic pipeline study

The Arctic pipeline study is a review of existing statistical data sources and various reports. New data were apparently not collected. Volume six of the study evaluates the effects of short term employment on natives. Natives were found to abandon their small scattered camps for town. The leaders in the various Eskimo communities were often those most inclined to obtain work, thus leaving their communities without leadership. The short term injection of cash permitted an inflated and unrealistic living standard. The short term cash return and the job itself created unrealistic expectations. The skills learned were not of any value following the construction period; natives were forced to return to the old life having acquired a taste for a new living standard.

The second volume provides an extensive analysis of existing data on social impact along the path of the pipeline. They emphasize in their introduction to the data that while there are distinctly more problems in development areas, it is difficult to show what proportion of the increase is directly attributable to the development itself. Even so, development is directly or indirectly blamed for each of the two basic problems among natives discussed below.

1. Alcohol abuse is the major social problem in the North. Alcohol consumption is related to about half of all deaths from injuries, accidents and violence, the most common causes of death in the Northwest Territories. Nearly 90 percent of all violations of the ordinances of the Northwest Territories involve the Liquor Ordinance. One-third of the inmates in Yellowknife are convicted of crimes involving liquor. The total liquor sales in the Northwest Territories amounts to \$137 per capita compared to \$80 for

Canada as a whole. Profits from the sale of liquor are the single biggest source of revenue to the Northwest Territories Government, generating a net profit of nearly \$3 million in the fiscal year 1971-1972. Drinking is part of the culture, a way of life to the northerner.

Several interrelated problems associated with alcohol abuse are identified. Over-consumption of alcohol by parents leads to the neglect of children. It is reported that most child thefts involve food, likely due to the inadequate provision of food by parents. Family breakdown, wife beating and child abuse typically involve alcohol abuse. Indeed, 98 percent of child neglect cases involve alcohol. It is argued that alcohol abuse is heavily influenced by inadequate housing, stress, feelings of deprivation, isolation, high living costs, apathy, inferiority, and pressure from friends and relatives to drink. The provision of cash income acts as a direct stimulant to drinking episodes. Gemini North argues that natives were introduced to "binge" drinking by trappers and miners historically. Due to the restrictions, natives developed illicit drinking habits. The report predicts that with additional cash inputs into the area, if the pipeline is further developed, alcohol abuse and alcohol related problems will increase.

2. Housing is the major economic problem. Housing is both inadequate and insufficient to meet the demand. Housing is defined as a factor in infant death rates, tuberculosis, and emotional stress due to overcrowding. A house which is poorly ventilated, lacks adequate daylight and suffers from high humidity is a favorable medium for the growth of tuberculosis bacteria. This disease is also facilitated by overcrowding. Pneumonia, the major cause of post-neonatal death, gastrointestinal diseases, and respiratory infections are also caused by poor housing conditions.

Most native housing is without plumbing, running water or piped sewage systems. Water is typically trucked in and stored in tanks. While southern Canada uses an average of about 227 litres of water per person per day, the typical availability and consumption of water in native housing areas is approximately 23 litres per capita

per day. Several communities have far less; certain communities such as Inuvik have far more than the Canadian average. Contamination from sewage is common. Gastroenteritis, hepatitis, bacillary and Shigella dysentery are of chronic proportion in several Eskimo settlements. The rate of bacillary dysentery in the Northwest Territories, for example, is eight times the rate for all of Canada. Hepatitis is five times as common in the North as in the rest of Canada.

It is also argued that overcrowding encourages people to go to bars. Natives who can't find housing, having left their native communities, are unable to obtain work. Racial tensions are created by the fact that most whites typically have better housing than the natives. The rate and scope of development is said to create inflationary housing and urban congestion.

6.3.2 Gulf employment study

Hobart and Kupfer (1972-1973) conducted a study of Inuit employees of Gulf Oil in Coppermine, the Northwest Territories. The study is based on interviews with 134 persons including employees, their wives if married, and older children. The interviews were conducted by Inuit interviewers, of the same sex as the interviewee. Interviews were also conducted with 38 whites who lived in or had knowledge of the Coppermine area. In addition, records of several companies and various statistical data were reviewed.

1. The work situation. Consultations with native leaders and information meetings for natives interested in applying for work were employed systematically in advance of the hiring of 54 Inuit men. The Inuit employees were flown by airplane to the job site, typically worked 14 days, 12 hours a day, and were flown back for a 7-day stay at home. Most worked out well in laboring roles that were highly structured and adequately supervised. The native workers, however, had considerable difficulty with truck driving, swamping and roughnecking work roles. Although Gulf administrators didn't think things progressed as well as they had hoped, they were generally happy with the performance and habits of the Inuit employees. There was little prejudice shown toward the Inuit by fellow white

workers. Problems were common when supervisors were not sensitive, outgoing, respectful or appreciative. A number of concerns for the work situation were created by the Inuit worker such as expecting advancement too quickly, carelessness in equipment handling, lack of dependability in more than one job, and resentments by white workers when Inuit work violations were ignored by supervisors. The culture of the traditional Inuit was a significant factor. The men resisted asking questions of their supervisors out of a fear of ridicule and a general failure to understand the overall work program. Even so, Gulf Oil supervisors perceived these as minor problems and believed they could be readily solved.

The interviews with both the Inuit men and their spouses revealed that they appreciated the job and nearly all were planning to return to the work force in the forthcoming year.

2. Effects on community. The employment with Gulf increased the cash flow into Coppermine by 75 percent. Although the average earnings were about \$3000, nine of the men made more than \$5000. The money was not saved; indeed, it was spent on Skidoos, guns, and related equipment. The 35 children interviewed were asked about their reactions to their father's employment. About 45 percent said they were happy with the new clothes, 57 percent mentioned more candy and soft drinks, 31 percent mentioned more food and money, and 25 percent mentioned more equipment.

Fewer Inuit men were involved in hunting as a result of employment. Community activity however was more active. Gambling and alcohol use increased, liquor use in particular increased by 29 percent during the year. The effects of drinking sprees, which typically occurred shortly after getting back from the work period, are unclear. There is some evidence of more fighting, including domestic fighting, and more woundings. Adultery was apparently more common due to the extended absence of husbands. Although these problems did increase as a result of the Gulf employment, they were considered minor by most. The Settlement Council generally saw the employment as a positive influence in the community. Wives and children reported few disruptions or worries. Loneliness was the

most common complaint. Whatever the problems, both children and wives strongly supported the work program.

3. Effects on family life. Over half of the employed Inuit had five or more children, the majority had no schooling at all, had been full-time trappers, and had not been steadily employed in non-trapping activities. The workers were distinctly satisfied with their work, bosses, fellow workers of both races, the food provided, etc. They collectively disliked the plane trip but understood its necessity with respect to their jobs. About half of the men worried a little about their wives and families during their extended absence, but the general posture was one of non-worrying.

Of the 55 Inuit men who worked for Gulf, 41 were married. Of these, 37 of the wives were interviewed. Most of the wives indicated that they wanted their husbands to work for Gulf (82 percent). The typical reason was money. When asked what they did not like about their husbands working, 77 percent indicated no dislike at all; 94 percent indicated that there were no problems. The remainder indicated that they were lonely. Nearly 75 percent of the wives wanted their husbands to work for Gulf in the coming year for sure, 18 percent said maybe. The children of the employed Inuit were also interviewed. They similarly were greatly satisfied with their fathers' employment. Their reasons, like their mothers, were distinctly money oriented. Of the 35 children, nearly 50 percent said they were lonely in their father's absence but all 35 wanted their fathers to return to work in the coming winter. Boys aspired toward the type of work their fathers were involved in and distinctly did not mention traditional Inuit occupational activities.

In general, the above evidence is impelling. Although there were certain negative consequences, the general effects of Gulf Oil employment among Inuit men and their families in Coppermine were positive for both the community and family life. Hobart (1973-1974) was able to conduct a follow-up study of Coppermine workers and also to compare work effects in two other Inuit communities, southern and Delta. Even though the situation in Coppermine was basically positive in 1972-1973, the situation improved in the

following year. Liquor use declined 12 percent and there was decreased evidence of violent woundings. Reactions from all concerned continued to be positive with respect to work conditions, effects on the community, and family life. The problems of the work situation improved markedly. Inuit men moved into more responsible jobs such as swamping and roughnecking and experienced few difficulties. The labor force from Coppermine increased from 55 to 71 men.

The situation among the Inuit from southern and Delta areas, however, was somewhat different.

4. Southern Inuit workers. Information was obtained from 370 southern workers; a total of 391 were employed by Gulf Oil. Interviews were conducted with 92 Inuit workers. Southern workers were more skilled, more experienced and worked for longer durations. The turnover rates among southern workers were high. The typical reasons identified were recreational opportunities in the camps, concerns about being absent from families, and concerns about income and fringe benefits. These workers were typically quite informed about inequities in work conditions and areas which might be improved. Southern workers disliked the cold in the Arctic and clearly preferred more recreational opportunities in camp including the availability of alcohol under controlled conditions. They worried about their families and wanted work schedules revised so as to permit more time with their families even though there would be adjustments in income. Older, married workers with children generally stayed with their jobs and performed their jobs more effectively. Although they expressed considerably more concerns than Coppermine workers, and even though the turnover was high, most southern workers indicated that they wished to return to the job site and were satisfied with the job situation.

5. Delta workers. Data were obtained from 49 workers from the Mackenzie Delta communities, including 34 interviews. Over 50 percent of the Delta workers quit within two weeks. Among those interviewed, these workers were distinctly the most critical of the employment situation. Their complaints as well concerned the work

situation with respect to recreational opportunities and wages, and concerns about separation from their families. Due to the absence of trapping activity, there was an inadequate meat supply. Stable, effective Delta workers were older, married, with specialized job training though typically with little formal education. Over 90 percent of those interviewed thought the employment was good for their communities and life style ambitions. Most planned to work for Gulf again the following winter.

Data on liquor use, health conditions, and domestic problems are not reported for either the southern or Delta workers. The high turnover rates and dissatisfaction with working conditions Hobart attributes to issues of maturity and extended contact with white culture. It is by implication probable that these workers have higher expectations for the work situation than Coppermine workers and are experiencing more problems with adjustment to rapid cultural change. However, the information on these Inuit groups is inadequate to accurately assess the community, employment and family situations.

6.3.3 Native employment issues in other studies

Most of the other studies of native adaptation to employment in industry have been conducted in the Yukon. These studies generally show that employers tend to think of natives in negative ways such as being shiftless, irresponsible, unreliable, or lacking in drive (Bowles 1975:15). Likewise, natives tend to show distrust and suspicion of employers and are hesitant to answer questions for fear that the answers might be used against them (Hunter no date). Hobart's studies (1972-1973) also found some hesitation among natives in providing information. Even so, natives have generally provided information and it is generally found to be articulate and insightful. Natives typically want to work, are basically satisfied with work conditions, the problems notwithstanding. Further, not all studies show a negative disposition among employers towards natives. Hobart's study of Gulf employers, for example, revealed candid and understandable concerns but a basic appreciation and respect for the native worker.

An interesting study by Smith (1974) on the employment attitudes of native students and their teachers' guesses on these attitudes found considerable disparity between the predictions of the teachers and the aspirations of native students. The teachers drastically underrated the student's evaluations of scientific, professional and managerial occupations and jobs like heavy duty equipment operators. They overrated the student's evaluation of menial, unskilled and semi-skilled occupations. Though these were high school students, a considerably unique achievement level compared to natives in other areas, it seems apparent that teachers simply are not aware of the increasing awarenesses of the native. The Yukon situation indeed may reflect favorably on the eventual consequences of continued resource development. Maturity in resource areas would appear to be related to increasing native adjustment and a decrease in native problems.

In a study of 89 Indian males on job acceptance and retention in the Yukon (Lampe no date), it was found that 94 percent wanted high-paying jobs, 81 percent wanted job regularity (one year +) and 80 percent wanted to live close enough to their jobs so that they could commute daily. Non-urban native employees preferred jobs lasting less than a year, working with other natives exclusively and native supervision. Urban native employees, in contrast, tend to prefer jobs of longer duration, did not mind working with non-natives, and preferred non-Indian supervision. As above, Yukon public servants underrated the commitment of native to jobs, the location of work, and the importance of income. They did, however, accurately predict native concerns about poor employment and supervision.

Hunter's study (no date) of 67 native employees in the Yukon found concerns among natives about the failure of employers to understand their culture. There was some resentment of the rigid scheduling of work activities. This resentment was related to the feeling that, if they were prepared to give up wages, employers should be acceptant. In general, they wanted to be better trained but felt that the existing education system did not facilitate relevant training.

It would seem that the Yukon situation reflects favorably on the eventual, largely positive, consequences of continued resource development. Relative maturity in resource development seems related to increasing native adjustment and a decrease in the problems associated with resource development. In general, it would appear that employment opportunities are viewed favorably by natives in the long run and, even though their culture is changed and problems are common in the short run, natives themselves come to prefer the changes. The most apparent issue is not the fact of development intrusions but the manner in which they occur. The Gulf Oil situation, for example, seems to reflect an intelligent commitment to minimizing the problems and facilitating native involvement and adjustment.

Similarly, Syncrude (Callihoe, 1975) is approaching native employment in the Fort McMurray area with a determination to minimize negative effects and maximize the opportunities for both employment and training in a climate of support and concern. Their procedures reflect intelligently on native culture, the mistakes of other employers, and a genuine commitment to monitor their native employment programs.

6.4 SUMMARY

The issues and findings reviewed in this section are somewhat inconsistent. However, by implication, it is apparent that the contradictions are artifacts of the biases of the researchers and respondents, the relative maturity of resource development in the differing areas, and the type of data employed in reaching conclusions.

The findings are summarized in Figure 6. Realistically, resource development will proceed. Accordingly, the issues concern how it proceeds, and whether industry and government work together in minimizing the negative effects and maximizing the effort to facilitate native adjustment. The literature suggests that resourceful resource development is difficult in both procedure and consequence, short-run negative consequences are inevitable -- long-run detrimental consequences are inevitable in the absence of

Attributes of traditional
native culture

Constraint in relations
with others
Fear of aggression from
others
Repression of hostilities
Free agent mentality
Avoids or withdraws from
anxiety situations
Group oriented goals
Past-present oriented
Nature seen as part of
himself and as super-
natural
Nonverbal
Non-possession oriented
Pragmatic
Patient
Does things when showed
what to do

Current demographic characteristics

High birth rates
Large families
Few older people
High illegitimacy rates
High divorce rates
High infant mortality rates
Average age at death below 40
High alcoholic rates
Dependency on welfare
High crime and delinquency rates
Prostitution
Inadequate housing
Little education
High arrest and incarceration
rates
Low income

Native problems and employment
concerns in resource development:

Negative, seemingly inevitable
consequences

Cash creates inflated and unreal-
istic goals and living standard
Short-term employment has disas-
trous consequences including:
Alcohol abuse
Violent crimes
Neglect of children
Wife and child abuse
Inadequate housing
Health problems
Inflationary housing and
urban congestion

Figure 6. Summary of Findings on Resource Development and Native Communities

Resolvable consequences (depends on ingenuity
of employer, government assistance and
native leadership)

Limited job adaptability
Exaggerated expectations for advancement
Carelessness in equipment handling
Resentments or rejection by white workers
Increased alcohol consumption leading to some
wife and child abuse, and more child neglect
Extended separation from families
Inadequate work conditions such as recreational
opportunities and entertainment
Inequitable wages and income
Community organizational problems due to
extended absence of men
Distrust of employers
Increased marital infidelity
Commuting time to place of employment
Inadequate supervisory skills

Positive consequences* (depends on maturity
of resource development, ingenuity of
employer and government, and native
leadership)

Cash available to improve standard of living:
more food, amenities, better housing
Satisfaction with work situation
Marital stability and satisfaction
Family satisfaction
Native employment in supervision and related
skilled and better paid occupations
Reasonable access to employment situation
Realignment and refinement of heritage
Higher educational achievement
Average quality of life achievements

*It is not assumed that these consequences
are necessarily "positive." The issue is
whether the native defines these or other
changes as positive. If not, then provision
must be made for natives to retain the tra-
ditional life style for those who prefer it.

Figure 6. Concluded.

carefully executed native programs, and the end consequences can be favorable. The establishment of and provision for alternative life styles within native communities and among natives in resource towns will need to be an explicit goal. In this sense, natives who prefer the traditional life style should be able to pursue this option as readily as those who aspire to change.

7. RESOURCE DEVELOPMENT AND SOCIAL IMPACT IN FORT McMURRAY

Preceding sections have addressed the general issues in mobility and family impact, first with respect to general societal conditions, and second with respect to northern development. The purpose of this section is to establish what is known about development and social impact in the Fort McMurray area. The first sub-section emphasizes a review of existing demographic and statistical materials relating to process and change. The second sub-section summarizes material on various problems and satisfactions with life in Fort McMurray.

7.1 DEMOGRAPHIC PROFILE

According to the comprehensive inventory of Census Division 12 in 1961 (Schultz 1966), northeastern Alberta was a region of special development potentials and problems. It was a way of life much unlike the rest of Alberta. It is described as a largely rural area (nearly 80 percent lived in the country or towns of less than 1000 population) with a predominantly stagnant population. While the population for the province as a whole grew nearly 42 percent between 1951 and 1961, the population in Census Division 12 grew less than 19 percent. Families were distinctly larger than families in the rest of Alberta. Nearly 67 percent of the population were Roman Catholic compared to less than 30 percent in the province as a whole. Farm workers constituted nearly 50 percent of the labor force compared to a provincial average of 21 percent. The average income of non-farm families and non-farm persons was distinctly lower than each of the other census divisions. Northeastern Alberta had higher infant mortality rates and a lower ratio of students, 15 years and older, in school.

This profile is changing in northeastern Alberta, largely due to developments, once only a developmental potential, in Fort McMurray and surrounding area. In 1951, the population of Fort McMurray was 900 persons. This was the year the community officially became a town. Nine years later, with the acquisition of Lease 86 by Great Canadian Oil Sands, the town began to grow. Since that time, population growth has been relatively dramatic. The changes

in the Fort McMurray area will alter the entire fabric of life in Census Division 12, concomitant with expanding resource development throughout the region. What was a rural and stagnant area, is fast becoming the centre of activity in the Province of Alberta.

The following discussion employs demographic data to assess the processes of change in Fort McMurray. Given the limited scope of this inquiry, comparative data sources will not be employed.

Table 71 presents population data, and the percent of increase, beginning in 1961. As is apparent, the population has increased by a minimum of 6 percent, and as much as 47 percent, every year except in 1963. The current estimated population of 16,885 persons is more than a 300 percent increase in just 15 years. Continued growth of a similar order is anticipated. Ekistic Design (1975), for example, estimates that by mid-1978 the urban population of Fort McMurray will be nearly 24,000. Knight (1976) estimates that the population could be closer to 31,000 by the time the Syncrude plant is operational. Within ten years, assuming continued development of energy resources, the population could reach nearly 55,000, and as much as 100,000 in the foreseeable future. The population of Fort McMurray has increased more than five times between 1961 and 1971. It has increased nearly 3 times in the five-year period since 1971 and could double again by 1978. Census materials are available for 1961 and 1971 permitting an in-depth review of the structure and process of the changes in population. Whether similar patterns apply to the current decade must await the provision of data from the 1976 and 1981 census.

Table 72 shows that there was a marked increase in the male population of Fort McMurray in 1966 between the ages of 20 and 34. The largest increase of 1966 was in the number of females, aged 20-24. The population pyramid of 1971 indicates that the population was considerably younger. There was about a 9 percent increase in children between the ages of 5 and 19, including both males and females, indicating that families began to migrate more actively between 1966 and 1971. This pattern is further documented in Table 73. The number of families where the head was under 25

Table 1. Population growth by percentage gain, Fort McMurray, 1961-1975^a

	POPULATION	PERCENT GAIN
1961	1,110	
1962	1,186	6 %
1963	1,186	none
1964	1,303	10 %
1965	1,804	38 %
1966	2,515	39 %
1967	3,387	35 %
1968	4,984	47 %
1969	5,943	19 %
1970	6,132	3 %
1971	6,681	9 %
1972	7,147	7 %
1973	8,148	14 %
1974	9,542	17 %
1975	13,393	40 %
1976 (est.)	16,885	26 %

^a Based on data supplied by the Department of Municipal Affairs, Government of Alberta.

more than doubled in 1971, compared to 1961. Similarly, the proportion of families where the head was 25-34 years of age increased 18 percent.

The families living in Fort McMurray in 1971, on the average, had fewer children than their 1961 counterparts (2.28 compared to 2.63 children - see Table 4). However, the number of families with only two children increased markedly which is also indicative of a basically younger family unit in 1971 compared to ten years earlier.

These data offer support to the evidence presented in earlier sections. Younger, smaller families are more inclined to migrate both to other areas of town as well as to resource communities.

The marital status, of the males and females in Fort McMurray, for 1961 and 1971, is presented in Table 5. In 1961, nearly 62 percent of the male population and 57 percent of the female population was single. The majority of these in both cases were under the age of 14. This situation prevailed in 1971, though the overall single population decreased for both males and females about 4 percent. The proportion of the male population in a married status increased about 6 percent in 1971, somewhat less for females. The proportion of the widowed population decreased markedly for both males and females in 1971. Although there was a small increase in the number of divorced males in Fort McMurray over the decade, there was a sharp increase in the number of divorced females. Indeed, a recent comparison of the change in divorced population between 1961 and 1971 for all of the census divisions in Alberta reveals that northeastern Alberta had the highest increase (see Figure 7). The increase in the divorced population was 340 percent compared to 311 percent for the Edmonton region (Census Division 11). It is likely that much of this increase is directly attributable to the larger number of divorced persons in Fort McMurray.¹

¹ It may be emphasized that vital statistic data on divorce rates for the Fort McMurray area could not be obtained. Apparently, they are available for specific areas in a province but, to this point, have not been released and there is some resistance to doing so.

Table 2. Population by age and sex, Fort McMurray, 1961, 1966 and 1971.^a

Age and sex				Percent Change 1961-66		Percent Change 1966-71		
<u>Males</u>								
0-4	110	17.1	229	15.6	-1.5	560	15.7	+ .1
5-9	87	13.5	166	11.3	-2.2	505	14.1	+2.8
10-14	77	11.9	150	10.2	-1.7	425	11.9	+1.7
15-19	49	7.6	105	7.1	- .5	310	8.7	+1.6
20-24	31	4.8	116	7.9	+3.1	325	9.1	+1.2
25-34	69	10.7	253	17.2	+5.1	680	19.0	+1.8
35-44	78	12.1	184	12.5	+ .4	400	11.2	-1.3
45-54	43	6.7	127	8.6	+1.9	215	6.0	-2.6
55-64	53	8.2	89	6.0	-2.2	110	3.0	-3.0
65-69	15	2.3	23	1.6	- .7	15	.4	-1.2
70 +	33	5.1	29	2.0	-3.1	30	.8	-1.2
Totals	645		1471			3575		
<u>Females</u>								
0-4	86	15.9	194	17.0	+1.1	545	16.6	- .4
5-9	80	14.8	162	14.2	- .6	550	16.7	+2.5
10-14	66	12.2	117	10.2	-2.0	370	11.2	+1.0
15-19	54	10.0	90	7.9	-2.1	275	8.4	+ .5
20-24	24	4.4	146	12.8	+8.4	350	10.6	-2.2
25-34	68	12.6	161	14.1	+1.5	620	18.8	+4.7
35-44	61	11.3	125	10.9	- .4	315	9.6	-1.3
45-54	62	11.4	84	7.4	-4.0	160	4.9	-3.5
55-64	22	4.1	39	3.4	- .7	60	1.8	-1.6
65-69	7	1.3	16	1.4	+ .1	25	.8	- .6
70 +	11	2.0	9	.8	-1.2	20	.6	- .2
Totals	541		1143			3290		
Percent of total population								
male	(54.3)		(56.3)			(52.0)		

^a Prepared from data supplied by Population Research Laboratory, Department of Sociology, University of Alberta, from Statistics Canada census tapes, 1961 and 1971.

Table 3. Families by age of head, Fort McMurray, 1961 and 1971.^a

Families by age	1961 Census		1971 Census	
	N	Percent	N	Percent
Under 25	13	5.7	185	12.5
25-34	54	23.8	620	41.9
35-44	65	28.6	380	25.7
45-54	41	18.1	195	13.2
55-64	37	16.3	85	5.7
65 +	<u>17</u>	7.5	<u>30</u>	2.0
Totals	227		1480	

^a Prepared from data supplied by Population Research Laboratory, Department of Sociology, University of Alberta, from Statistics Canada census tapes, 1961 and 1971.

Table 4. Families by number of unmarried children, 0-24 years of age, Fort McMurray, 1961 and 1971.^a

Families by number of unmarried children	1961 Census		1971 Census	
	N	Percent	N	Percent
No children	46	7.7	275	6.7
One	46	7.7	285	8.4
Two	33	5.5	420	12.4
Three	30	5.0	260	7.7
Four	29	4.8	165	4.9
Five +	<u>43</u>	7.2	<u>75</u>	2.2
Total families	227		1480	
Total number of children	598		3375	
Average Family Size	2.63		2.28	

^a Prepared from data supplied by Population Research Laboratory, Department of Sociology, University of Alberta, from Statistics Canada census tapes, 1961 and 1971.

Table 5. Population by marital status for males and females, Fort McMurray, 1961 and 1971.^a

Marital Status by Sex	1961 Census		1971 Census	
	N	Percent	N	Percent
Males				
Single -14	274	42.5	1485	41.8
Single +15	124	19.2	550	16.0
Married ^b	227	35.2	1475	41.5
Widowed	16	2.5	15	.4
Divorced	<u>4</u>	.6	<u>25</u>	.7
Totals	645		3550 ^c	
Females				
Single -14	232	42.8	1460	44.4
Single +15	76	14.0	305	9.3
Married ^b	217	40.1	1455	44.3
Widowed	16	3.0	45	1.4
Divorced	<u>0</u>	-	<u>20</u>	.6
Totals	541		3285 ^c	

^a Prepared from data supplied by Population Research Laboratory, Department of Sociology, University of Alberta, from Statistics Canada census tapes, 1961 and 1971.

^b Includes separated.

^c The discrepancy between these totals and Statistics Canada data cannot be rectified.

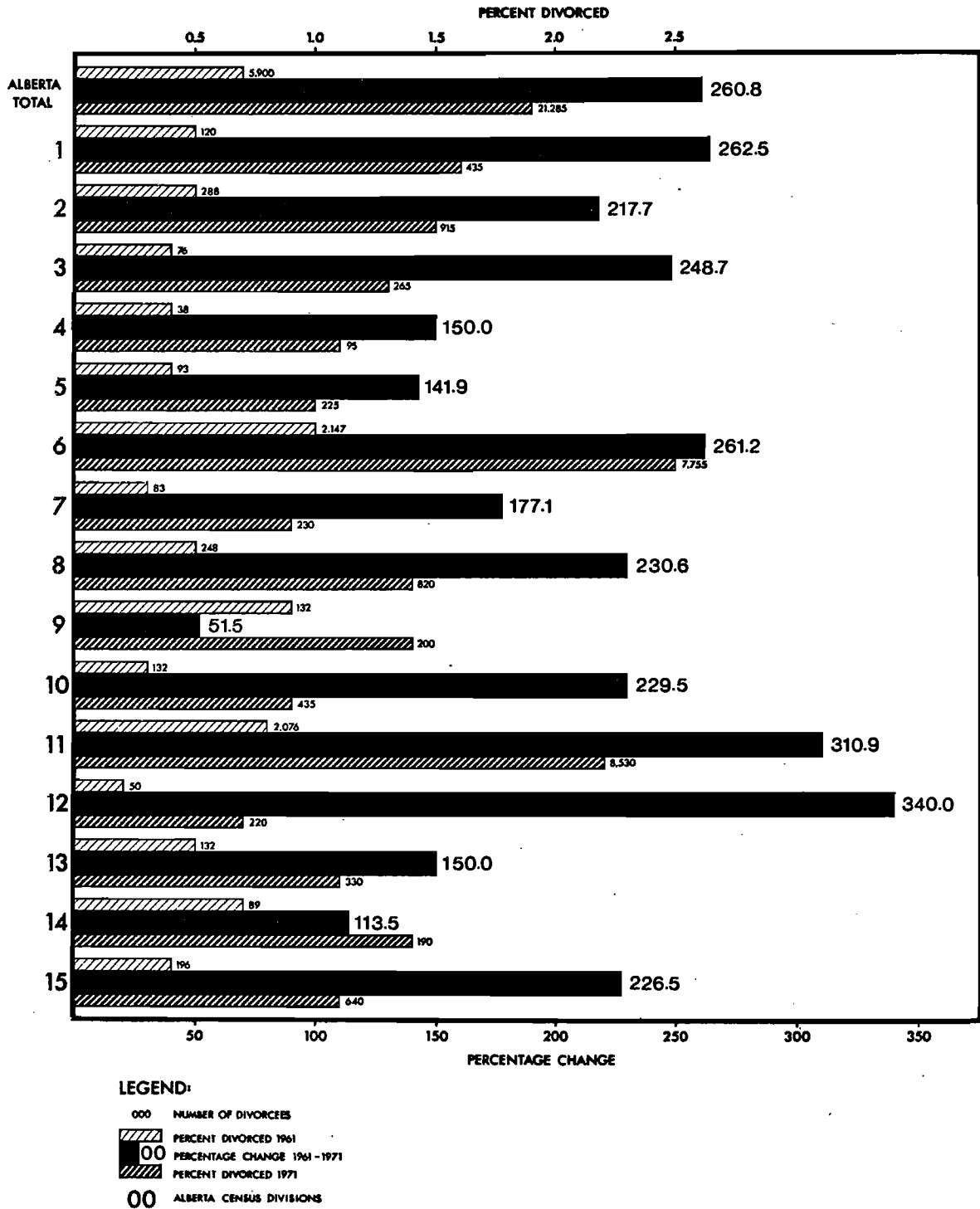


Figure 7. Divorced population, Alberta, 1961-1971. (Reprinted from P. 40 of Wayne McVey, Population Trends in Alberta. Historical Review and Assessment for the Future, Stage 1, 1971, prepared for Advanced Education and Manpower, Government of Alberta, 1976.)

The marital status of the labor force is presented in Table 6. Although there are more families in Fort McMurray in 1971, there is only a very modest increase in the proportion of married male employees (71 percent in 1961 to 73 percent in 1971). There is, however, a radical change in the proportion of married female employees in 1971 (72 versus 48 percent). The reasons for these patterns are not empirically clear, nor can they be with present data. Several important factors, however, can be identified. In the first place, it can be established by employing data in Tables 5 and 6, that more than 92 percent of all males 15 years of age and above were employed in 1971. This represents an improved employment situation of about 20 percent over 1961, as around 72 percent of males over 15 were employed in 1961. The situation for females, however, was considerably different. About 20 percent of all females, 15 years of age and older, in Fort McMurray in 1961 were employed. In 1971, nearly 40 percent were employed. This indicates that the employment situation was markedly improved during the decade. Nearly half of the females employed in 1961, however, were single.

The second factor is of greater importance. In 1961, less than 11 percent of the married women were employed (30 of 217). By 1971, nearly 37 percent of the married women were employed (520 of 1455). This is a significant change and one that would not be predicted based on the widely stated assumption (Riffel 1965; Van Dyke 1975) that married women cannot find employment in resource towns. Indeed, among married women in Canada as a whole, only 33 percent were employed outside the home (Larson 1976:34). It is unknown whether the proportion of employed married women has maintained this pattern over the more recent five-year period in Fort McMurray.

The mass immigration of people into resource towns typically necessitates temporary housing. In addition, the instability of resource development is associated with the preference to rent rather than own accommodation. Table 7 presents data on dwellings by type and tenure for 1961 and 1971. As can be seen,

Table 6. Labor force by marital status for males and females,
Fort McMurray, 1961 and 1971.^a

Marital Status by Sex	1961 Census		1971 Census	
	N	Percent	N	Percent
Males				
Single	68	25.6	465	24.2
Married ^b	188	70.8	1410	73.2
Widowed /	10	3.8	40	2.1
Divorced	—	—	—	—
Totals	266	—	1925	(72.8)
Females				
Single	31	49.2	170	23.6
Married ^b	30	47.6	520	72.2
Widowed /	2	3.2	15	2.1
Divorced	—	—	—	—
Totals	63	—	720	—

^a Prepared from data supplied by Population Research Laboratory, Department of Sociology, University of Alberta, from Statistics Canada census tapes, 1961 and 1971.

^b Includes separated.

most dwellings were owned in 1961 (70 percent). By 1971, there was an apparent decline in house ownership (to 55 percent) but it was not as marked as might be predicted. Similarly, while more than 90 percent of all dwellings were single detached units in 1961, the housing demand turned distinctly to temporary housing in the form of apartments (13 percent) and mobile homes (18 percent). One cannot visit Fort McMurray today without observing a flourishing construction industry and the mass distribution of mobile homes throughout the town and on the periphery of the town. Housing permits for 1000 new homes were issued in 1975 and another 1000 units in 1976. It is likely that present building is well behind the housing demand, at least as projected by Chan and Webb (1975).

In general, the population profile described above appears to correspond to typical conceptions of the resource community. The only major exception is the number of married women employed outside the home. If it were not for widespread assumptions to the contrary, one might predict that the active support and service industries associated with single industry development have continued to provide employment opportunities for the married female. It might be argued that a massive immigration of single women would snap up most available jobs. However, on the surface this seems unlikely in view of the more likely job stability of the married female. Further data are distinctly required to adequately assess the patterns of female employment in Fort McMurray.

The next sub-section turns to various studies of Fort McMurray concerning the problems and satisfactions associated with life in this particular resource town.

7.2 PROBLEMS AND SATISFACTIONS IN FORT McMURRAY

7.2.1 Resident opinions

There has only been one survey, to my knowledge, that has attempted to obtain representative opinions from residents concerning the quality of life in Fort McMurray. The study was conducted in 1969, two years before the census data was collected which was discussed earlier in this section. Every fourth household was sampled.

Table 7. Dwellings by type and tenure, Fort McMurray, 1961 and 1971.^a

Tenure and Type	1961 Census		1971 Census	
	N	Percent	N	Percent
Tenure				
Owned	212	70.4	900	54.9
Rented	<u>89</u>	29.6	<u>740</u>	45.1
Totals	1301 ^b		1640 ^b	
Type				
Single detached	276	90.2	1030	62.0
Single attached	40	9.8	120	7.2
Apartment	-	-	215	13.0
Mobile home	<u>-</u>	-	<u>295</u>	17.8
Totals	316 ^b		1660 ^b	

^aPrepared from data supplied by Population Research Laboratory, Department of Sociology, University of Alberta, from Statistics Canada census tapes, 1961 and 1971.

^bUnable to determine source of discrepancy.

The final sample consisted of 233 males and 235 females. No attempt was made to obtain data from both husbands and wives. The director of the study made three assumptions about the community:

1) relative homogeneity in socio-economic status; 2) a basic similarity in expectations; and 3) that residents will expect compensation for areas of perceived deprivation accruing from living in resource communities.

Nearly 70 percent of the sample had a high school education or less, 14 percent of which had only completed grade eight. Eleven percent had technical training beyond high school, 8 percent had some university training, and 4 percent had graduated from college. From this evidence, it would seem that there is little justification to assume socio-economic homogeneity. Given the findings of Jackson and Poushinsky (1971), the opinions of professionals may be significantly different from those of non-professionals in Fort McMurray.

The director of the study has published two reports (Matthiasson 1970, 1971). The first report is based on the response of residents to those things "making life enjoyable," in "need of improvement," and brief word descriptions of life in Fort McMurray. It was found that the highest priority was given to entertainment and recreation, income, adequate housing, and relatively easy access to Edmonton. The lowest priority was given to retail facilities. Several areas were identified as needing to be improved. Improved transportation to Edmonton was top priority. The other important areas of improvement included communications, medical facilities, entertainment and recreation. The responses of males and females did not significantly differ. The only exception was that women ranked medical facilities as the major priority for improvement. The words used to describe life in Fort McMurray reflect both satisfaction and frustration: friendly, expensive, challenging, and isolated.

The second report (1971) specifically examined issues in turnover. Well over 50 percent of the sample had moved more than five times prior to coming to Fort McMurray. Only 10 percent had

moved once previously. About 35 percent of the sample expected to stay more than five years. Nearly 40 percent expected to be gone within two years. The majority said they moved to Fort McMurray because of employment opportunities (77 percent). The second most important reason for coming was held by less than 20 percent, to obtain a new life. With respect to dissatisfaction and leaving, only 25 percent were distinctly dissatisfied. The most prominent reasons had to do with weather and related conditions or unfulfilled expectations. About half were specifically satisfied with labor-management relations, local government, union activities, working conditions, opportunities for advancement, salaries, fringe benefits, vacation time, and job security. Nearly one-fourth of the sample did not respond to questions concerned with motivations for staying or leaving. One of the surprising findings was that women were more satisfied with the life style in Fort McMurray than the men.

In general, this study seems to reflect a posture of realistic appraisal among residents with a heavy emphasis on basic satisfaction with work roles. Community concerns emphasize isolation and amenities, both of which are expectable problems in boom resource towns.

Most of the data collected in this study remain unavailable, in either published or report form. The data itself are severely limited in three respects. First, they are out of date. The population has increased three-fold since 1969. Community concerns and problems have become distinctly more visible, at least according to the opinions of community leaders (see Van Dyke 1975). Second, the data obtained are of a primitive and relatively discursive form. The study is not framed within a theoretical perspective which both informs and delimits the specification of the most important issues and their interrelationship. Third, there are several interrelated methodological inadequacies which variously reflect on the quality of the data collected.

1. The variant opinions of professionals, skilled and unskilled laborers were not assessed. In addition, no

attempt was made to compare native and non-native concerns.

2. Data were not obtained from both husband and wives. Comparative data of this kind are essential in assessing problems of adjustment, given the different issues facing men and women in resource communities.
3. In order to accurately assess social impact in resource communities, it is essential to obtain data in at least two time periods. The importance of this procedure will be discussed in the next section.

The other major study in Fort McMurray (Van Dyke 1975), involved the collection of opinions from a non-random and non-representative sample of professional persons such as teachers, RCMP officers, social workers, and clergy. Largely informal interviews were conducted in the interest of obtaining expert opinions on the various types of social and personal problems characteristic of resource communities. This study was conducted more recently (1975), and likely reflects on certain of the changes since 1969. The opinions, collectively, probably reflect both strongly held biases and unique insights into the meanings of life in Fort McMurray. Which of these possibilities is the more viable explanation for the results obtained can only be a subject for conjecture. The accuracy of certain of the opinions, at this point, can only be minimally assessed with existing data sources.

In general, the opinions of the experts reflect high levels of agreement concerning problems in Fort McMurray. These include exploitation by industry and government, the refusal of industry to accept social responsibilities, the emasculation of local government and initiative by the provincial government, geographical isolation, the confrontation of peoples of differing national and ethnic groups, a meeting place for failures from other communities, high levels of transience and temporicity, inadequate physical amenities such as recreation and housing, overcrowded schools, extended work periods and household absence among employed men, and inadequate employment opportunities for women. These characteristics are said to cause or influence various social and

personal problems to a greater degree than in other communities. These problems include personal debt, mental illness, household boredom and related psychological stress conditions, family breakdown, sexual promiscuity, marital infidelity, alcohol and drug abuse, and criminal behavior. It is also assumed that welfare problems are intensified and native culture is undermined. Family breakdown, in particular, was assumed to be a significant social problem. Typical arguments on the reasons for family breakdown emphasized sexual promiscuity, extramarital affairs, the development of loose sexual attitudes, separation from neighborhoods where others can exercise personal control over one's behavior, differences in expectations between husbands and wives, the extended absence of husbands, inadequate community and employment opportunities for wives and children, child neglect, inadequate sources of identification for the young, and easy credit (Van Dyke 1975: 145-151).

A follow-up exploratory study of resident opinions on these and related matters is now being conducted by Applied Research Associates in the Fort McMurray area. It will be important to establish whether the opinions of the experts are shared by those most affected by resource development.

The study of criminal justice services needs by Graham, Brawn and Associates (1975) also conducted a public opinion survey of 75 persons in the Fort McMurray area. The technique was an open-ended interview of a random sample of a list of community members serving on various organizational boards and committees. The average length of residence was 6.5 years. Fifty of the persons interviewed lived in Fort McMurray. The other 25 persons lived in Fort Chipewyan, Fort McKay, Anzac and Janvier. Group interviews (discussions) were also conducted with high school classes in grades 10, 11 and 12. The results are reported in Appendix F of their report.

The findings are reported in descriptive form without reference to the percentage holding certain opinions. The desirable features of Fort McMurray were defined as the small-town atmosphere, closeness to nature, and the marked employment opportunities. The

type of problems identified are similar in content and scope to the findings of other discursive studies. With respect to housing, most thought there was not enough and it was overcrowded. The lack of planning was emphasized. Considerable concern was expressed about the inadequacy of native housing. Schools are described as over-crowded and providing inadequate counseling services. Strong feelings were expressed about the total inadequacy of medical services, and the shortage of doctors and dentists. The youth, in particular, complained about the inadequate recreational facilities and services available. Most agreed concerning the need for large department stores and supermarkets. Most also agreed that the over-crowded conditions and other social constraints were leading to increasingly higher levels of family discord. Some felt that alcohol abuse occurred because there was not enough to do while others believed that boom towns attract people with a hard-drinking life style. They typically described the community of Fort McMurray as being made up of three types of people: 1) a small core of active and committed residents; 2) those out to make a fast buck who will remain for a year or two; and 3) a large group that are apathetic and bewildered. Generally, they regarded the RCMP with respect and did not think things were out of control. They were collectively concerned about growing violence.

Research of this kind is useful in formulating and identifying issues and concerns, as experienced and perceived by residents. As such, they provide direction to the development of analytical models and research designs that can effectively measure cause and effect variables and their interrelationships. The conduct of explanatory studies permits the establishment of ongoing social indicators and procedures to monitor and regulate social change. In the absence of quantitative explanatory research, however, government policy must depend on personal opinion rather than probabilities or predictive odds - measurable approximations to facts.

7.2.2 Evidence of community problems

This sub-section focuses on the available evidence of social and personal problems for the town of Fort McMurray.

1. Selected vital statistics. Selected vital statistics have been tabulated for 1961, 1966 and 1971-1976 as available. Nearly all of the data reported in Table 8 are based on unpublished materials. The birth rate was unusually low in 1961 but considerably above average in 1966. Since the high birth rate in 1972 (37.1) the number of births per 1000 population has stabilized between 28 and 25. There would seem to be an apparent trend toward a somewhat lower birth rate. The birth rate is considerably above the Canadian rate (e.g. in 1973 the Canadian rate was 15.8 compared to 28.0 in Fort McMurray; see Larson 1976:29).

The rate of natural increase clearly demonstrates that the birth rate exceeds the number of deaths and therefore represents a marked annual increase in the population quite independent of immigration.

The marriage rates do not seem logical. They were extremely low in 1961 and jumped to a high of 7.8 marriages per 1000 population in 1972. In 1973 they decreased sharply. In general, the rates are considerably below the national average which has varied between 8.3 and 9.2 during the 1968-1973 period (Larson 1976:29). The rates in Fort McMurray probably reflect several factors: a higher incidence of common-law marriage, marriages occurring prior to immigration, or simply taking place in other areas of the province.

The literature on resource communities tends to emphasize the problems created by rapid development. Tables 8 to 10 permit the assessment of certain types of problems. The percent of all live births involving illegitimate births is clearly above the national average. Nine percent of all live births have been illegitimate in Canada since 1971 (Larson 1976:29). In contrast, the rate in Fort McMurray has varied from a low of 9.8 percent in 1972 to 16.1 percent in 1974. As with the marriage rate, the percentage of illegitimate births has been irregular. There was a

Table 8. Selected vital statistics, Fort McMurray, 1961, 1966, 1971 to present data obtained, as available.

	Live Births ^a	Rate of Natural Increase ^d	Marriage Rates ^c	Illegitimate Births ^b	Rate of Therapeutic Abortions ^e	Rate of Gonorrhoea ^a
1961	16.0	9.3	2.5	-	-	-
1966	35.6	31.8	6.1	-	-	-
1971	34.3	29.2	5.7	12.0	2.3	6.0
1972	37.1	34.7	7.8	9.8	1.8	3.5
1973	28.0	25.4	5.0	10.5	1.8	8.0
1974	26.7	-	-	16.1	2.4	6.6
1975	27.0	-	-	10.8	1.6	9.3
1976	25.4	-	-	14.8	-	-

^a Compiled from unpublished data provided by the Research and Planning Division, Department of Health and Social Development, Government of Alberta. Rate is the number per 1000 population.

^b Compiled from unpublished data as above. Rate is the percent of all live births.

^c Compiled from unpublished data from the Bureau of Vital Statistics. Rate is number per 1000 population.

^d Compiled from unpublished data from the Bureau of Vital Statistics. Rate is the number of births over deaths per 1000 population.

^e Compiled from unpublished data provided by the Alberta Hospital Services Commission. Rate is the number of therapeutic abortions per 1000 population.

Table 9. Gonorrhoea for males by age and marital status, Fort McMurray, 1970-1975.¹

Marital Status and Age of Males	Incidence of Gonorrhoea by Year													
	1970		1971		1972		1973		1974		1975		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<u>Age</u>														
10-14	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-19	2	-	6	22.2	3	20.0	6	15.4	10	21.7	14	15.6	41	18.2
20-24	3	27.2	12	44.4	7	46.6	14	35.9	15	32.6	35	38.9	86	38.2
25-29	4	36.4	5	18.5	3	20.0	8	20.5	9	19.6	17	18.9	46	20.4
30-34	-	-	-	-	-	-	4	10.2	6	13.0	11	12.2	23	10.2
35-39	-	-	-	-	-	-	-	-	3	6.5	4	4.4	9	4.0
40-49	-	-	-	-	-	-	3	8.0	2	-	5	5.5	10	4.4
50 +	-	-	-	-	-	-	2	-	-	-	3	3.3	7	3.1
Unknown	-	-	-	-	-	-	-	-	-	-	-	-	3	1.3
<u>Totals</u>	11		27		15		39		46		90		225	*
<u>Marital Status</u>														
Single	6	54.5	18	66.7	12	80.0	27	69.2	32	69.6	70	76.1	165	72.3
Married	3	27.2	4	14.8	2	13.3	7	17.9	8	17.4	10	10.9	34	14.9
Widowed	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Divorced	-	-	-	-	-	-	-	-	-	-	-	-	-	.4
Separated	-	-	2	-	-	-	3	7.7	3	6.5	3	3.3	13	5.7
Common Law	-	-	-	-	-	-	-	-	2	-	3	3.3	5	2.2
Unknown	-	-	2	-	-	-	2	-	-	-	4	4.4	10	4.4
<u>Totals</u>	11		27		15		39		46		92		228	*

¹ Compiled from unpublished data provided by the Research and Planning Division, Department of Health and Social Development, Government of Alberta. Note: Percentages are not provided for cells with less than a frequency of 3 cases.

* Discrepancies are apparent in the data provided. If there was just one case reported, this case is not included in the table to insure anonymity.

Table 10. Gonorrhoea for females by age and marital status, Fort McMurray, 1970-1975.¹

Marital Status and Age of Females	Incidence of Gonorrhoea by Year													
	1970		1971		1972		1973		1974		1975		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<u>Age</u>														
10-14	-		-		-		-		-		-		2	1.9
15-19	3	37.5	7	50.0	4	40.0	13	50.0	8	47.0	12	37.5	47	44.3
20-24	3	37.5	3	21.4	4	40.0	6	23.0	3	17.6	13	40.6	32	30.6
25-29	-		3	21.4	-	11.5	3	11.5	3	17.6	3	9.4	14	13.2
30-34	-		-		-		-		-		-		3	2.8
35-39	-		-		-		-		-		-		-	.9
40-49	-		-		-		-		-		-		-	.9
50 +	-		-		-		-		-		-		-	.9
Unknown	-		-		-		-		-		2		5	4.7
Totals	8		14		10		26		17		32		106	
<u>Marital Status</u>														
Single	5	62.5	8	57.1	8	80.0	19	73.1	13	76.5	20	62.5	73	68.9
Married	2		2		-		4	15.4	-		6	18.8	16	15.1
Widowed	-		-		-		-		-		-		-	.9
Divorced	-		-		-		-		-		-		3	2.8
Separated	-		-		-		-		-		-		3	2.8
Common Law	-		-		-		-		-		-		5	4.7
Unknown	-		-		-		-		-		2		5	4.7
Totals	8		14		10		26		17		32		106	

¹ Compiled from unpublished data provided by the Research and Planning Division, Department of Health and Social Development, Government of Alberta. Note: Percentages are not provided for cells with less than a frequency of 3 cases.

significant decrease between 1971 and 1972, and 1974 and 1975. In contrast, there was a sharp increase between 1973 and 1974 and between 1975 and 1976. The pattern of therapeutic abortions between 1971 and 1975 are similar to those for the province as a whole. They do not indicate that the pattern in Fort McMurray is unique or higher than elsewhere.

Venereal disease rates are presented for 1971-1975. The rate is based on the total number of unconfirmed and confirmed cases among both males and females per 1000 people for each of the years identified. Comparable data for other areas of the province are available but have not been acquired for this report. The most apparent evidence is that the rate reached the highest point in 1975. Informal interviews with certain informants lends support to the likelihood that the number of cases increased dramatically in 1976. A more detailed examination of venereal disease is permitted by Tables 9 and 10. Looking first at the age factor, the majority of males with gonorrhoea over the six-year period, are 20-24 years of age (38.2 percent). Most females, in contrast, are between the ages of 15-19 (44.3 percent). These patterns are consistent for each of the years examined. As would be predicted, the majority of both males and females acquiring gonorrhoea are unmarried (72 percent and 69 percent, respectively). The number of married males and females treated for venereal disease over the six-year period averaged about 15 percent. Among married males, there appears to be a general decrease in disease-inducing sexual contact over time (from 27 percent in 1970 to 11 percent in 1975). Among married females, however, there appears to be modest increase in venereal disease during this time period. The frequencies, however, are far too small to conclude that any real trend exists. In general, this data does not reveal marked social disorganization.

In general, the data for Fort McMurray indicate that birth rates, the rate of natural increase, and illegitimacy rates are higher than the national average. Marriage rates, in contrast, are lower. The number of therapeutic abortions are similar to the rest of the province.

Whether information concerning venereal disease is of any value in assessing the frequency and nature of marital infidelity, prostitution, or other supposed attributes of life in resource towns is only surmise. More direct measures of sexual interaction would need to be employed if this variable is deemed important in reviewing marital problems, adjustment, and mental health.

2. Alcohol abuse and criminal behavior. The major review of existing evidence by Graham Brawn and Associates (1975) demonstrates that alcohol-related offenses outstrip all other offenses combined. Although natives in Fort McMurray represent about 25 percent of the population, they account for 63 percent of all persons arrested or incarcerated. In 1974, of 1201 persons in jail, 832 or 69 percent were there for reasons of intoxication. Court records for 1974 reveal that over half of the 2068 cases heard were alcohol-related. Forty-three juveniles came before the court in 1974. Of these, 67 percent were between the ages of 14-16, half of the juveniles were female, and two-thirds of them were native. Most of the juvenile cases were alcohol-related. Of the total number of persons arrested during 1974, 1120 were male and 81 were female. RCMP officers report a reluctance to charge females because of the lack of adequate facilities to house them. They also expressed concern about increasing prostitution among young females. Of the 90 persons on probation, 43 percent had resided there less than a year. Based on these factors, this report argues that "there can be little doubt that the situation in Fort McMurray places an undue strain on family life, and in particular, upon youth (p.30)." The Graham, Braun report indicates that, as of the end of 1974, there were 26 RCMP stationed in Fort McMurray - 21 urban and five rural with plans for three additional staff. There was one judge, one family court counselor, one probation officer serving 100 cases, and six lawyers. The jail has capacity for eight male and four female offenders, as they report, distinctly inadequate given the case load.

The above evidence clearly suggests that criminal activity is distinctly related to alcohol abuse. A calculation of

alcohol revenue between 1965 and 1975, supplied by the Liquor Control Board, reveals that the amount of money spent on alcoholic beverages has dramatically increased (see Table 11). This is a rough indicator of actual alcohol use, in that there may be an inflationary factor in the cost of alcohol products. As can be seen alcohol sales increased between 1965 and 1967, consistently decreased to 1970, and continued to increase to 1975. Between 1974 and 1975, alcohol consumption nearly doubled.

Table 11 attempts to more accurately measure whether alcohol use has in fact increased by determining the per capita usage of both liquor and beer. It is apparent that alcohol use, per capita, was the highest in 1966 and 1967. Per capita alcohol use then, rather dramatically, declined systematically to 1970. The per capita use of alcohol has continued to increase systematically to 1975. The current expenditure, however, remains more than \$29.00 per capita below 1966. The information available also indicates that the per capita expenditure for liquor, as opposed to beer, has increased consistently from a low of 65 percent in 1967 (\$133.08 divided by \$204.98) to 79 percent in 1975 (\$124.58 divided by \$157.61).

There is apparent evidence that alcohol use is increasing in Fort McMurray. The trend toward the purchase of liquor is unclear. It could mean an increase in hard drinking. Or, in contrast, it could reflect an increase in social drinking as in cocktail parties and related events. The fact that alcohol use is strongly related to crime, particularly among natives, is therefore a matter of increasing concern. Little is known from existing research in Fort McMurray about the effect of alcohol use on marriage relationships, parent-child relationships or child abuse. These, and related factors, bear further consideration.

3. Health services. Marino (1976), under the auspices of Ekistic Design, examined existing health problems and services in Fort McMurray. It is suggested that the incidence of health problems will vary from national norms due to the nature of economy and industry in resource communities. Shift work and rotation professions

Table 11. Alberta Liquor Control Board revenues, Fort McMurray^a, per capita sales^b.

Year	Liquor	Beer	Total	Actual Sales
1965-66	\$125.87	\$60.80	\$186.67	\$ 469,466
1966-67	133.08	71.90	204.98	694,244
1967-68	87.43	43.39	130.82	652,022
1968-69	73.77	33.17	106.94	635,517
1969-70	68.99	28.53	97.52	598,007
1970-71	73.73	28.57	102.30	683,432
1971-72	88.79	30.44	119.23	852,124
1972-73	95.62	28.95	124.57	1,015,013
1973-74	106.56	30.42	136.98	1,307,087
1974-75	124.58	33.03	157.61	2,110,966

^a Source, Liquor Control Board, Annual Report.

^b Based on data supplied by the Liquor Control Board and determined by the population statistics for each year. Due to the fact that the population follows the calendar year, rather than a fiscal year, the baseline employed is the population of the calendar in which the fiscal year ends.

facilitate psychosomatic disorders. Similarly, the dangers in operating heavy equipment, and the fire and explosion hazards in handling petrochemicals increase the probability of accidents. For example, the number of accidental deaths in 1973 was 2 1/2 times the national average. Due to the higher birth rate, more obstetric and pediatric services are needed. In 1973, 38.5 percent of hospital care was for children compared to 13 percent or less in other centers.

At present there is one hospital in Fort McMurray. Construction has begun on a 300-bed addition. With respect to health professionals, based on a listing of public service resources dated October 5, 1976, there were three medical clinics with eight doctors, a single health unit, two dentists, two chiropractors and one optometrist. Most residents have been variously concerned to bitter about the inadequacy of the medical facilities.

4. Schools, housing, and services. The public school system in 1975-1976 operated two elementary schools, one junior high and one senior high, with a total enrollment of 2,019. The separate school system had one elementary school and one junior high with an enrollment of 1,082 (based on Marino 1975). Information provided by the town of Fort McMurray in 1976 indicates that there is one additional public school and two additional separate schools; apparently a fourth is under construction. A new high school is planned to be located close to Keyano College. The complaints about overcrowded schools have been widespread in the opinion surveys. It would seem that the construction of schools will not be able to keep up with the massive increase in population to occur in the next 2-5 years. Knight (1976) estimates that nearly 4,000 children will arrive in Fort McMurray within the next two years.

Housing is apparently critical. Over 1000 units are being constructed each year; mobile homes dominate the landscape. It is unlikely that the housing shortage will be resolved in the foreseeable future. The construction industry simply cannot keep up with the projected demand (cf. Chan and Webb 1975). Conventional housing costs are 25 percent higher than in Edmonton. A 60-foot

(18.3 metres) serviced lot averages \$29,000. Complaints about housing have been largely based on mobile home housing, housing costs, the quality of construction, or the amount of housing available.

Syncrude, in particular, is doing everything possible to provide housing to their employees. Up to \$33,500 is provided as an interest-free loan as a down payment on a house. Mortgages at 10 3/4 percent are provided for 25-year terms. Syncrude guarantees that they will buy back the house plus whatever the cost of improvements should the employee desire to leave Fort McMurray. Should the prices go down, the employee is guaranteed the amount of his investment in the house.

Counseling and aid services are available through government agencies including Preventive Social Services, Alberta Social Services, and Native Counselling Services. The Alcohol and Drug Abuse Commission has a local office. At present there are no psychiatric and psychological services available for marriage and family problems. The case load is apparently high in existing agencies (Ward 1973).

There are few recreational and entertainment options. At present, there is one theatre, one ski hill, cablevision, and one indoor swimming pool. Interest classes and clubs are active and well received. Figure skating classes, for example, are turning people away. A multi-million dollar MacDonald Island Recreation Complex is proposed to be completed in 3-4 years.

7.3 SURROUNDING NATIVE COMMUNITIES

As reported above, natives constitute about 25 percent of the population of the Fort McMurray area and have a higher frequency of alcohol use, are more frequently arrested, and are more often incarcerated.

7.3.1 Fort MacKay and Anzac

There are two native communities within commuting distance - Fort MacKay and Anzac. Janvier is some distance south without road access to Fort McMurray.

Fort MacKay is located 72 km north on the Athabasca and MacKay River crossing. Ekistic Design (1975) predicts major oil development to the east and north of Fort MacKay. Indeed, Ekistic Design has recommended a new town across the river from Fort MacKay. This recommendation will be hotly contested by Fort McMurray, however, so it is unclear at present what will occur. However, oil sands development is inevitable. When it happens, life in the small community of Fort MacKay will be radically altered.

The present population of Fort MacKay is 250 persons.¹ Most of the population is Treaty Indian (145), 95 are Metis, and 15 non-natives live in the community. There is a surplus of females in the 10-25 age group and a surplus of males in the 25-34 age group. Accordingly, the young women in the community tend to marry older men. In legal terms, most of the families live common-law. These marriages are apparently more successful than the "legal" ones. The average education level in the community is grade six. The average family has five or more children. According to verbal information received, 35 of the men presently work in various levels of oil sands industry.

The community has one telephone, two septic tanks, and one school for grades one-nine in poor condition with about 50 children attending. A new school is planned. There are 29 housing units, most with outdoor privies, and most have electricity. Mail is received twice weekly. A nurse visits the community once a week, a physician once every two weeks. At present, there are no recreational facilities in the community. In the opinion of some observers, alcohol abuse is quite common in Fort MacKay and social disorganization is prevalent.

Anzac is located on the southeast shore of Gregoire Lake, about 50 km from Fort McMurray.² The population within the community proper was 133 in 1974, with about 19 more in the immediate neighborhood. Of the 154 residents, 10 are non-natives, 30 are

¹ Most of this discussion is based on Ekistic Design's profile of Fort MacKay (1975).

² Discussion based on Ekistic Design's profile of Anzac (1975).

Treaty Indians and 114 are Metis. There are more females than males between 20 and 65 in age, and more males than females aged 5-15.

There were 30 houses in the community without water or toilet facilities in 1974. At the time of the Ekistic study, there were only two septic tanks. Several wells have apparently been drilled for the use of the residents. Prior to this alteration, lake or spring water was used. Several families were hoping to build new homes. At the time I visited Anzac, there was one well-designed and spacious log house recently completed and another under construction.

There were two telephones at the time of the Ekistic study. Mail service was not available to the town, residents were required to obtain their mail in Fort McMurray. There was talk of this being changed but to my knowledge Anzac does not yet have a post office. The local school was closed in 1974 and all children are bussed to Fort McMurray. The old school is used for a preschool program funded by Preventive Social Services. At present, there are no recreational facilities other than a hockey rink during the winter and access to the lake. Generally, Anzac appears to be a relatively stable community.

I was unable to locate information on the community of Janvier.

7.3.2 Native employment

According to a study by Syncrude (Callihoe 1975), there is a potential native work force in northeastern Alberta of 3051 natives - 1768 males and 1283 females. The characteristics of this potential work force are described as follows: 80 percent are either unemployed or employed part-time; 47 percent are aged 20-35, 20 percent 16-19 years; 23 percent have some high school education, 40 percent have some education in junior high school. Syncrude concludes that there are around 540 native males that might be employed, based on those below the age of 36. No reference is made to the probable number of employable females.

Exploratory trips were made to several resource

communities by employees of Syncrude, to identify and evaluate existing programs for hiring natives. They visited areas in the Mackenzie corridor, the Northwest Territories, Manitoba, New Mexico and Arizona. Based on their examination of the issues and problems in native employment, and a recognition of the significance of native culture, Syncrude has developed a training and employment program without precedent. The program is distinctly family-focused with respect to relocation, housing, and counseling. It emphasizes specific policies including:

1. the provision of support services to relocated families;
2. the development of alternative housing arrangements that are less costly;
3. recruitment in consultation and cooperation with Native Outreach and Band and Settlement Councils;
4. education upgrading programs in cooperation with Keyano College;
5. guarantees of employment to natives who enroll in upgrading program, otherwise qualified, and who satisfactorily complete the training;
6. a training program for Syncrude supervisors concerning native cultural traits and behavioral patterns; and
7. a native training and counseling program in basic life skills, family, marriage and alcohol counseling, and social and cultural training.

The effectiveness of this program is yet to be established. However, it is noteworthy that Syncrude has underwritten a program of this scope. If successful, it will represent a significant means of reducing and minimizing the negative impact of rapid development on natives in the Fort McMurray region.

7.4 SUMMARY

This section has selectively reviewed existing data and opinions about the characteristics of and satisfactions with life in Fort McMurray. Additional data in the Quarterly Statistical Review (published by the Division of Research and Planning, Alberta Social Services and Community Health, Government of Alberta) should

also be reviewed to provide a more comprehensive statistical description.

A recent study by Hunsberger and Nickels (1976) illustrates the importance of the studies in existence and the need for additional research. Hunsberger and Nickels analyzed turnover of workers and residents in resource communities which publish Householder Directories. The communities included Fort McMurray, Alberta, Yellowknife, Northwest Territories; La Ronge, Saskatchewan; Flin Flon and Lynn Lake, Manitoba. Over a five-year period (1967-1972), Fort McMurray was found to have the lowest percentage of stayers (33 percent). There was a continuous sharp drop, indeed sharper than for the other four communities, for the first four years. The fifth year represented a leveling off year by comparison to the preceding four years; even so, out-migration was greater in the fifth year for Fort McMurray than in the other communities.

It is well to emphasize that Fort McMurray is very much a boom town. Both Whitehorse and Yellowknife have acquired considerable maturity. The future of the mining community of La Ronge very much depends on further government involvement. Similarly, Lynn Lake and Flin Flon are facing a phase down period. Accordingly, the turnover rate in Fort McMurray may be expected to be considerably higher than in the other communities.

In fact, little is known about social impact in Fort McMurray. Most of the existing material reflects an exploratory examination of opinions about the problems created by resource development and their consequences. As suggested in the summary of the findings in Figure 8, these opinions sometimes do not square with the evidence. Even so, the research available is suggestive and can facilitate a rigorous examination of yet unexplored issues as well as the interrelationships among the fundamental variables in social impact.

The next section attempts to tie together the findings into a concrete and useable approach to research in the oil sands area. Integration of the material is achieved through a conceptual profile of the interrelationship of the central issues. The section

Expectations and Satisfactions

Small town atmosphere
Closeness to nature
Employment opportunities
Friendly
Challenging

Characteristics

Boom population growth
Young, small families
Single Males
Divorced females
More married female
employees (1971)
Half in rental housing
High mobile housing
High birth rate
High rate of natural
increase
High turnover rates

Problems

Evidence:

Inadequate counseling services
Geographical isolation
Inadequate housing: not enough,
overcrowded, temporary, lack of
planning
Inadequate schools: overcrowded,
inadequate counseling
Inadequate medical facilities
Inadequate transportation to Edmonton
and elsewhere (this has improved)
Inadequate entertainment and
recreation

Opinion:

Unfavorable climate
Unfulfilled expectations
Too expensive
"Meeting place for failures"
Emasculation of local government
Industry lacks social conscience
Inadequate employment opportunities
for women
Extended absence of husbands from home
Industrial exploitation

Consequences

Evidence:

Low marriage rate
High illegitimacy rates
Increasing venereal disease
High alcohol use and abuse
More alcohol-related crime
Greater accident risk
Greater need for pediatric,
obstetric medical care

Opinion:

Household boredom
Personal debt excessive
Mental illness
Marital conflict
Family breakdown
Sexual promiscuity
Marital infidelity
Child neglect
Greater youth problems

Figure 8. Summary of findings, Fort McMurray area. (It is emphasized that the research reviewed covers an extended time period. The rapid growth in Fort McMurray precludes a definitive judgment on patterns and processes. As Fort McMurray grows and changes, both opinions and the evidence itself changes.)

also contains the recommendations and a tentative outline of a relevant research design and research program.

8. SUMMARY, INTEGRATION AND CONCLUSIONS

It would be redundant to attempt a detailed summary of the materials reviewed in this report. Instead, a comprehensive, visual summary of the basic issues and findings of each major topic reviewed has been provided at the end of each section.

The first purpose in this final section is to critically review certain of the empirical and methodological issues that have become apparent in the review of existing data. Second, to summarize by identifying the most general variables (or issues) which will need to be systematically employed in any comprehensive assessment of what is happening and why it is happening to movers, residents and leavers in the Fort McMurray area. The last subsection will briefly specify a tentative research proposal and draw the implications of this exploratory review of literature in the form of recommendations with respect to government policy, research policy, research projects and programs.

8.1 PROBLEMS WITH EXISTING RESEARCH

The existing research is informative and suggestive. Numerous issues and concerns have been identified in considerable detail. The data cover a wide range of locations and sources of information. On the surface, it would seem that enough is known about social impact and human environment concerns to proceed with the implementation of various policies and dormant programs, by both industry and government. Indeed, certain rather creative programs are already in operation (e.g. Callihoe 1975). On closer examination, however, it becomes apparent that there is much yet unknown and certain inherent problems with much of the existing research. Selected aspects of these concerns are identified below.

1. Little social impact research. In reality, there has been very little research on social impact and human environment issues. The accuracy of this statement, of course, depends on one's definition of social impact. If the term is defined in terms of alcohol consumption, turnover rates, criminal activity, problems in native employment, or degree of community satisfaction, there is sufficient information available. If, in contrast, the focus

is on the issues that informants identify as significant personal and social variables, or if there is concern about interpersonal relationships within families, or even the structure and frequency of community participation, the conclusion will be different. Practically any basic variable in social impact can be shown to be of only limited value in assessing its significance in social impact. Alcohol abuse, for example, is widespread. What kinds of people do and do not drink? The pat answer is natives. How are the drinking habits of natives related to family relationships? Under what conditions do natives regulate the intake of alcohol? Are there certain psychological or relationship factors which facilitate control and abuse? Again, the pat answer to these questions is the intrusion of white man's culture. What about the interpersonal relationships of specific natives with specific non-natives under differing conditions? I would argue that little is known about the social and psychological factors that inhibit and facilitate drinking patterns in resource communities among both natives and non-natives.

Another common assumption is that females catch a bad case of "cabin fever" in resource communities. This is mentioned in nearly every study by informants describing the problems of others. The single study which hoped to test the validity of the assumption (Nickels and Ledger 1976) failed to obtain support. The study did not attempt to assess several important factors: e.g. the number of hours the woman spent in the house each day, the number of hours her husband was absent per day, whether her behavior and attitude were symptomatic of the fever, whether other members of the family perceived the wife or mother to be psychologically ill, etc.

In general, there has been little substantive research of any kind on the adjustment of the family unit to life in resource communities. Hobart's (1972-1973) study of native employment obtained minimal information on family dispositions toward the absence of and employment of the father. Similarly, Nickels, Sexton and Bayer (1976) obtained one Likert-type scale response on spouse satisfaction. Neither of these studies permits an in-depth assessment of

family impact issues. Few of the variables identified on pages 23-25 and in section 4 have been considered to this point in social impact studies in the North.

2. Marked redundancy in research. One of the more impelling conclusions that might be made about existing research in northern communities is the amount of redundancy. A description of the problems of life in the North, collected in many differing communities in British Columbia, northern Manitoba, northern Saskatchewan, Fort McMurray, the Yukon, and the Northwest Territories reads like a broken record. The same problems are identified everywhere. They are identified, but not studied. Similarly, the sources of community satisfaction and dissatisfaction are identified in most studies. The differences between communities are minor. The similarities are major. These are important matters and should not be treated lightly. Several important studies have been conducted on the sources of satisfaction and dissatisfaction (e.g. Jackson and Poushinsky 1971; Doyle et al. 1976; Nickels and Sexton 1976). These are pace-setting and sophisticated studies. The next step in research is to establish first, whether these problems actually exist, and second, the social psychological dynamics of problem development and resolution in resource communities. Similarly, how is community satisfaction related to the resources of individuals and families. In a paper published some years back, Dietze (1968) expressed concern about the lack of information exchange among universities, professionals and research agencies. He suggested that communication is mandatory to prevent duplication of effort. The Centre for Settlement Studies in Winnipeg, in the judgment of this writer, provides an excellent example of careful planning and coordination of research procedures, designs, and ethics (Siemens, Peach and Weber 1970). Although they were not systematic, to my knowledge, in identifying research questions, projects, and sequencing of the overall research program, their groundwork in coordination is unusual. The Alberta Oil Sands Environmental Research Program, as well as the many other departments of environment, may well need to seriously review coordination and redundancy in

existing and planned research programs.

3. Sufficient descriptive research. Considerable field data are now available from both opinion leaders and residents in resource communities. The current field study in Fort McMurray will flesh out and complete this profile of information. It must be recognized however that opinion data are of limited value in explaining patterns and processes in society. Exploratory field research helps define the type of issues to be examined, but it remains for more sophisticated research designs to establish the interconnections and sequential relationships among variables. Policy development and implementation depends on knowing causes and effects. Accordingly, it is now propitious to support explanatory research programs.

4. Insufficient theory. The existing research on resource communities employs little if any theory. One or two studies have tested "hypotheses" (e.g. Nickels and Ledger 1976), and a few have referred to various theoretical traditions. No attempt, however, has been made to systematically test any theoretical tradition that might be applicable to issues in resource areas. This is a significant inadequacy in view of the many theoretical models which have direct relevance including role theory, systems theory, culture contact and assimilation, even Marxist theory. Even a surface observation of the certain existing findings on moving North, staying and leaving, clearly fits traditional role transition theory in social psychology. For example, the finding that the amount of information families have, wives in particular, about the community of destination prior to their move facilitates adjustment in the new community, is a clear example of role clarity. Role clarity is a more abstract and higher order concept than amount of information. Accordingly, successful mobility becomes, in part, the successful transition into a new role. The absence of role clarity, similarly, has a significant influence on the exit out of roles. Role clarity is only one of several fundamental dimensions of role transition. If role transition theory, alone, had been employed by researchers in the study of adjustment and satisfaction in resource communities,

our predictive knowledge and ability to explain immigration and emigration would be considerably greater. Similarly, both industry and government might have acted in terms of this explanation of human phenomena early in resource development and, in so doing, reduced turnover rates and enhanced the quality of life among residents in resource towns.

Theory organizes and delimits a field of study. It gives credibility to the selection and interconnection of variables and, if supported by research, facilitates explanation and prediction. There is always the danger of imposing theory on reality, or allowing theory to bias how one interprets the data obtained. In this sense, explanatory and theoretically oriented research should not occur until sufficient exploratory research has been conducted to both inform and give direction to conceptual refinement. I believe that the data reviewed in this report lend themselves to the development of a theoretical approach to social impact in the North. The testing of the model will enable both explanation and prediction with respect to the relationships between resource development and individual and family well-being.

5. Imprecise measurement. A number of questionnaires and interview schedules have been developed, typically without reference to the instrumentation of other studies of social impact in the North. To this point, no study has attempted to assess the reliability or validity of any of the instruments employed. Until these tests are conducted, we cannot be sure that the answers to questions on community satisfaction, for example, are in fact measuring the actual dispositions of the respondent. It has been well demonstrated that the way a question is worded, the asking of certain questions rather than others, or even the failure to obtain both behavioral and subjective dimensions of the information sought has a marked effect on the validity of the information one acquires.

Although I have not attempted a systematic review of how each concept or idea was measured, the questionnaires and interview schedules I have looked at in general do not represent tight or definitive conceptual measures. The existing instruments, the

quality of life questionnaire developed by Nickels (1976) in particular, represent a useful beginning. It is timely to now further refine these instruments. Further thought should also be given to the use of various innovative measurement techniques such as systematic observations or field experiments.

6. Measurement of cause and effect. Most studies mention, but do not elaborate, the dangers in drawing the conclusion that rapid resource development causes social and personal problems. Even so, most studies tend to draw this conclusion, the dangers notwithstanding. In fact, the evidence suggests that the residents of resource communities themselves have strongly divided opinions on the cause. Some argue that the people who come to resource towns bring their problems with them; others blame industry; still others blame inept government. It seems evident that all of these factors may have a causal influence on personal and social problems in resource towns. The conditions under which these and other factors have an influence on individual and family well-being, however, is a complicated question. In general, causal questions cannot be addressed by descriptive studies. Cause and effect analysis requires the testing of explanatory theory and costly, complicated research designs.

An accurate assessment of cause and effect relationships typically requires both random sampling and time-related designs. The simplest but more inadequate procedure is to draw one stratified random sample of people who have been in a resource community for less than six months, and a second stratified random sample of people who have been in the same resource community for two or more years. This technique enables comparisons that are interesting, informative, and representative. However, it is impossible to assess whether the changes, if there are any, are due to the effects of various attributes of the resource community, or due to the differences inherent in the characteristics of the respondents themselves. Did the two-year-plus sample have the same attitudes and behaviors of the six-month-or-less sample, eighteen months earlier? Will the new arrival sample have the same characteristics

as the more mature sample eighteen months later? One way to improve this design is to obtain similar samples from comparable communities in differing stages of resource development. This would represent, in fact, a significant improvement in the design and fewer methodological concerns will be violated in the assessment of influence. However, the haunting question of cause still remains. What is the process of change actually experienced by a random sample of new arrivals over the duration of their community sojourn?

The more complex and more accurate procedure is the longitudinal research design. In this case, the minimum procedure would be to draw a stratified random sample of new arrivals in two communities at differing stages of resource development. These samples would then be "followed" and studied at a second time period deemed theoretically significant. An improvement in this design might include drawing the sample prior to the move of the new migrants into the community and obtaining data from them prior to the move, shortly after they arrive (say 4-6 months), and about two years later. This procedure will also permit a dynamic analysis of comers, stayers, and leavers. A longitudinal design of this form, it may be emphasized, also requires the testing of sound theory and the use of both valid and reliable instruments.

Given the massive influx of families into the Fort McMurray area as Syncrude enters the production phase, the designs described above are uniquely timely. The failure to support a quantitative study of considerable scope at this stage of resource development will be an extraordinary mistake with respect to policy development, meeting and resolving social and personal problems, and scholarly insight.

7. Solutions to problems. Although considerable opinion data have been collected on problems, satisfactions and dissatisfactions in resource communities, it is of interest that little information has been obtained from the citizens of communities concerning ways of solving the problems and their dissatisfactions. "John Public" does have something to offer to the policy makers

with respect to how money should be spent, where it should be spent, etc. Snider (1976) has rightly emphasized the importance of citizen participation in planning and decision-making. He suggests that everyone participates. The political issue is whether the participation occurs early and therefore reflects consultation and involvement; or whether participation occurs too late and becomes protest, or in the extreme, violence. Similarly, Campfens (1972:60) emphasizes that at present there is a "lack of significant developments in the creation of mechanisms that permit meaningful citizen participation and joint-planning at local, regional and provincial levels between government agencies and northern people."

One place to begin the active inclusion of citizens in resource development is to actively solicit their opinions about the resolution of the problems in resource communities.

8. Untapped indicators. The comprehensive review of literature for this report also revealed that most of the existing demographic and statistical data regularly collected by various public and private agencies remains untapped. There is a vast, yet unmined resource of information (McVey 1976). These indicators include, for example, divorce and marriage rates, grounds for divorce, birth and death rates, morbidity, life tables, illness, hospitalization, suicide, venereal disease, illegitimacy, drug use, child abuse, rape, therapeutic abortions, alcohol use, criminal and juvenile deviancy, incarceration rates, etc. The list is endless. Some of these have been casually identified and reported for the Fort McMurray area but most remain unexplored. The importance of research on these indicators, the establishment of their relationships to more subjective indicators such as acquired in survey research, and their utility in the ongoing monitoring of change seems apparent.

8.2 SUMMARY AND INTEGRATION

The terms of reference for this report requested, among other things, a statement concerning what is happening in the Fort McMurray area, why it is happening, and what can be done about it.

These questions have been answered in this report in detail. The model to be presented below provides a visual and analytical statement of the what and why of social impact in resource development.

It may be emphasized that this section represents a primitive summary and integration of the extensive materials reviewed in this report. Due to the complexities and time consumption associated with traditional theory construction techniques, such as processes of definitional reduction, elaboration and simplification, the following analysis takes a more intuitive and logical route. This procedure is inherently less time-consuming and the gains are useful and suggestive, though not necessarily definitive nor precisely fair with respect to the numerous factors "touched upon" in the various studies and ideas reviewed.

It is also recognized that the literature rather deliberately included in this report covers a wide range of conceptual and empirical material. To a large extent, the material reflects differing traditions and concerns. Even studies in the North, for example, are conducted in different habitats, in sometimes profoundly different cultural settings - though these are underemphasized and understated in the existing research, and at differing stages of development. Further, communities vary by access, type of resource development, public and private involvement, and degree of native and non-native contact. Even so, these factors are variables in well-conceived research designs. Once the more fundamental categories of issues are defined, variables of this type should readily "follow" - it should be assumed that these are essential variables.

The discussion to follow identifies five major issues and the basic variables within each. Figure 9 illustrates their interrelationship. Figures 10 and 11, to follow later in the section, illustrate how these basic variables may be treated more definitively with respect to family well-being. The models will only be minimally discussed in this report, in that the scope of this study is already far beyond reasonable expectations. Hopefully, the opportunity will be provided to expand on these

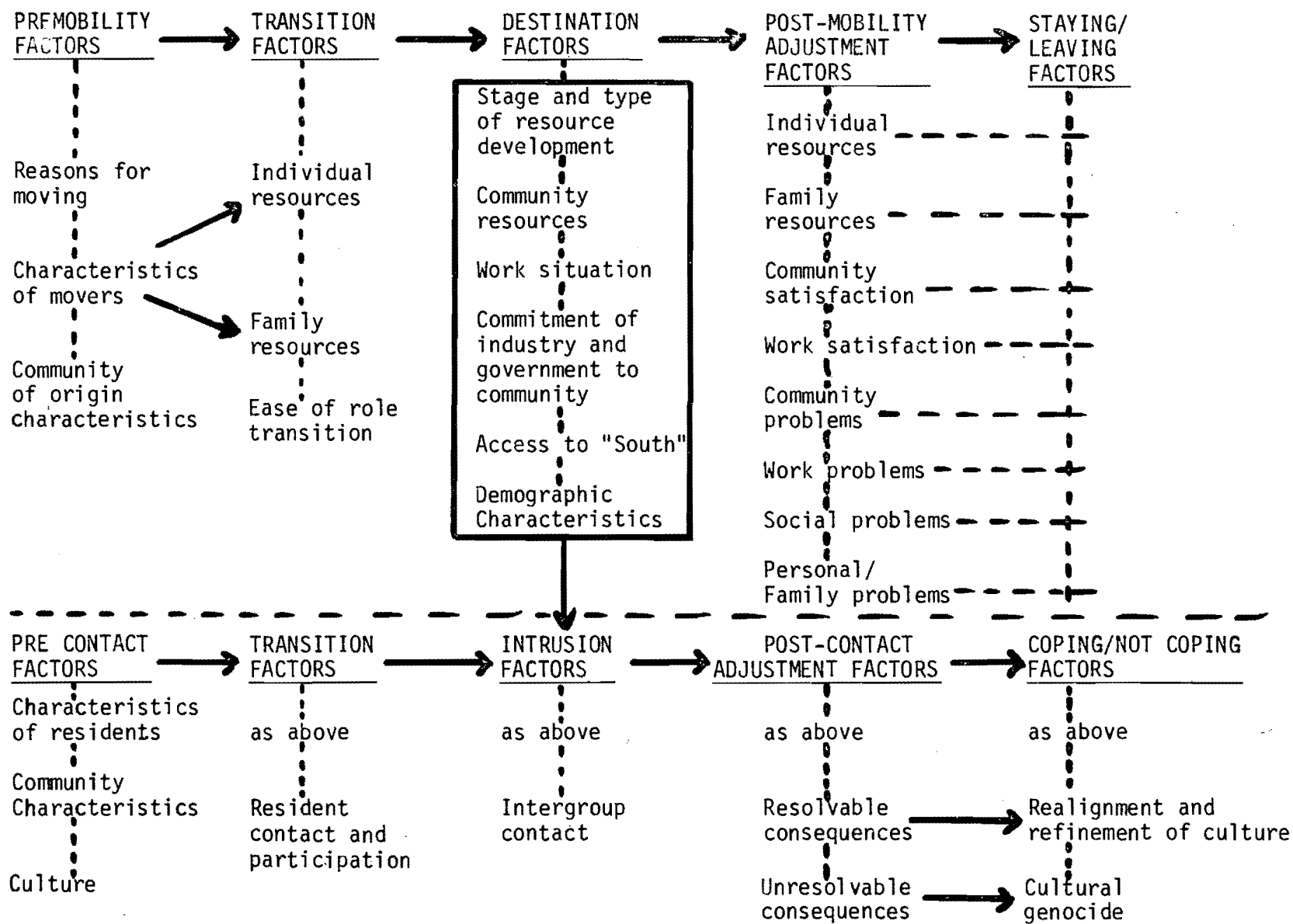


Figure 9. Basic issues in the impact of resource development on individual and family well-being.

theoretical statements in connection with research in another study.

It is also suggested that theoretical material in the next few pages should be thought of as a scheme to organize and "file" existing data, conceptually. Although the propositional or explanatory content of the approach is implicit, no attempt will be made to explicitly identify how the theory predicts process and change in resource communities.

1. Model of social impact. Figure 9 defines the basic issues in the impact of resource development on individual and family well-being. Five fundamental issues are identified and linked in sequence: premobility, transition, destination, post-mobility adjustment, and staying/leaving. It is assumed that resource development has a causal influence on individual and family well-being. However, the characteristics of individuals and families vary; accordingly, their response will influence the degree of effect that social impact has on the development of personal or social problems. In other words, people in resource communities can influence the degree to which resource development has an influence.

The sequential linkage of each of the five factors is self-evident in view of the inherent time-linkage of each factor. Premobility inherently precedes the characteristics of contact with the potential place of destination - transition factors. Similarly, it is assumed that staying and leaving factors are influenced in a sequential manner by each of the preceding four factors. However, much like human development, each of the "stages" of time-sequenced factors are cumulative. Accordingly, the characteristics of premobility are carried forward in assessing and determining the degree of impact of the transition factors. Likewise, arrival in the community of destination involves the addition of a new set of factors, yet unexperienced, which influence and are influenced by the combination of both premobility and transition factors. These three factors are accumulated and together, in varying ways and under differing conditions, influence post-mobility adjustment factors.

As for the in-migrant, five fundamental factors are identified and linked in sequence for the resident: precontact, transition, intrusion, post-contact adjustment, and coping/not coping. In this way, the model distinguishes those who move into the resource community from other areas and those who are affected in the area by the intrusion of outsiders. Accordingly, the community of destination for the in-migrant is also the resource community of intrusion to the existing residents in that community, and residents in surrounding communities. The research evidence clearly suggests that the effects are more pronounced on natives than non-natives. From a theoretical point of view, native-or-non-native is one of several fundamental variables in assessing intrusive communities. Similarly, to use the term intrusive does not imply coercive, the absence of consultation, exploitation or other terms. These are also variables in assessing the influence of intrusive communities. The intrusive community is defined as a community where the population of immigrants exceeds the population of residents, and the disproportionate ratio of immigrants to residents increases relatively rapidly.

The variables identified for each factor, which is in fact a more abstract variable, are tentatively intended to represent the basic variables which will need to be measured in order to explain the relationships between resource development and individual and family well-being. It is also apparent that these variables are composed of important indicators, too numerous to specify here but which are reflected in the analysis in preceding sections. Hopefully, these indicators can be developed into scales designed to measure the more abstract variable, e.g. community of origin characteristics.

The definition of most of the variables will be self-evident from the analysis in preceding sections. Two of the variables were not explicitly discussed earlier. Individual resources has reference to the psychological characteristics, knowledge, skills, intelligence, values and status of the individual. Family resources specifies the age, sex, and size composition

of the family, its status, past mobility, goals, level of role organization, and the relative scope and quality of interpersonal relationships, etc. Should the model be employed in any research program, each variable would need to be operationally defined. Multiple regression analysis might be employed within each time period and path analytic and time series analysis with respect to each stage of factors.

2. Family system response. Figure 10 illustrates the value of using a systems model in interpreting and assessing the interactional processes of a family unit in response to the conditions of life in resource communities. With respect to Figure 9, the family system response illustrated in Figure 10 would occur at the fourth and fifth stages, post-mobility adjustment and staying or leaving. This model illustrates the time period from the initial confrontation with the demands of the new community and related characteristics (see ENTRY) to the ultimate effect on family cohesion and leaving or staying (see EXIT). Though the diagram is self-explanatory, it will be helpful to briefly describe the basic processes. First, families that are able to respond positively to the modification of roles, who generally accept the structure of the revised relationships, and who have sufficient psychological, social and financial resources to adjust to these new demands (or opportunities) will typically experience little difficulty in adjusting to the life style of resource communities. Indeed, it is likely that family cohesion will be increased by the mutual recognition that the adjustment was made with relative ease.

Second, families which resist a modification of existing roles will more likely experience family conflict. If the family system is unable to resolve the conflict through the modification of existing role expectations, family cohesion may be expected to decrease. It is likely that each new problem will add irritation to the wound. Where modification of roles does occur, as a result of the conflict, the modification will need to be acceptable to all or most of the family members - the spouses in particular; if not, family conflict will be reactivated. These processes may eventually

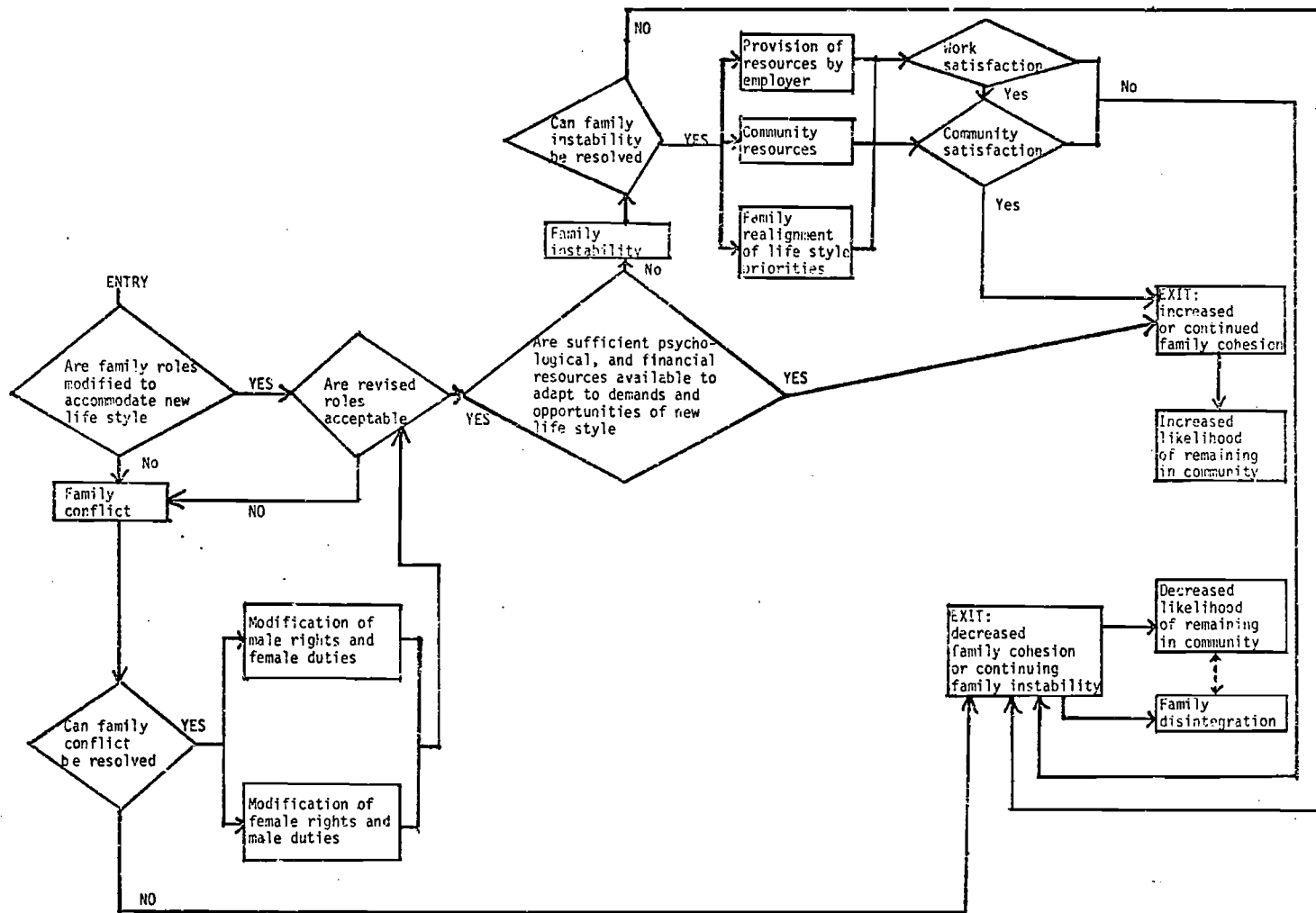


Figure 10. Family system response to quality of life in resource towns

lead to the acceptance of the revised role system or to decreased family cohesion and the eventual leaving of the resource community.

Third, achieving an acceptable system of role relationships, however, does not necessarily insure the availability of adequate psychological, social or financial resources to adjust to the new demands or opportunities of resource communities. A wife, for example, may agree to the role changes necessitated by the prolonged absence of her husband but lack the psychological resources to deal with this change. Similarly, the family may sense the need for greater community involvement but may lack the social skills to relate to their neighbors. Or the costs of the new life style may exceed the financial resources of the family. Typically, these concerns will be unanticipated by the family in moving to the new community and will consequently lead to family instability (a larger concept to reflect confusion, decreasing cohesion, and a conflict of frustration). The employer may reduce these problems through special programs, fringe benefits such as housing allowances or transportation costs, or inputs into the community to improve the available facilities. Similarly, the community (intended to mean any level of government or private services) may provide special services, programs, build special facilities, subsidize recreational and entertainment options so they can be enjoyed at lower cost, etc. Assuming a basic strength and persistence within some family units, the instability itself may marshal recuperative resources and lead to a redefinition of family priorities and commitments. Any of these three, in various combinations of relative importance, can result in satisfaction with work and community life and lead to increased family cohesion. Alternatively, the issues may not be resolved and lead to a decrease in family cohesion. Depending on the nature and consequences of the internal family system conflict, the resolution may mean family disintegration, such as divorce. In such cases, parts of the family may remain in the community while others return to their community of origin. It is most likely, however, that most families in such situations will be the leavers, not the stayers.

It is apparent in the above description of family system response that families will indeed respond differently to life in resource communities. There is considerable research evidence, some of which has been reviewed in this report, to the effect that there are three basic factors which influence the type of response. This response includes the dynamic characteristics of response over time as illustrated in the systems model. The three factors influencing the form of family response include (see Table 12): families with flexible versus rigid role relationships (Hansen and Hill 1964; Bott 1971); families with individual, spouse or family-centered goals; and basically positive or stressful interpersonal relationships. Rigid role relationships refer to relatively segregated divisions of labor between the spouses - one would expect little sharing or overlap in role responsibilities. Flexible roles, however, are indicative of considerable overlap and mutual participation in the various tasks of running the family "organization." Individual-centered goals would reflect a basic commitment to the autonomy and independence of each spouse. Such relationships would be relatively open and somewhat unresponsive to the dependency moods of the other spouse. Spouse-centered goals would reflect a basic commitment to spousal gratification and a preponderance of couple rather than individual or family-oriented activity. They will be inclined to do things together and go places together. Family-centered goals, in contrast, typically assign priority to the relatedness needs of children and may frequently require a realignment of adult interests and commitments in the interest of more effectively fulfilling the needs of children. These goals are not necessarily mutually independent. They are related but the relative focus will be more intense and determinative in one area over the others.

Table 12 illustrates the interconnection of these three dimensions of family variability. As can be seen, twelve differing types of families are identified. The configuration of characteristics identified by relating these variables enables the prediction of the likely response of each family type to the contingencies

Table 12. Typology of varying family response to quality of life in resource towns.

Relationship resources and role organization	<u>FAMILY GOALS</u>		
	Individual Centered	Spouse Centered	Family Centered
Flexible roles, Positive relationships	A	B	C
Flexible roles, Stressful relationships	D	E	F
Rigid roles, Positive relationships	G	H	I
Rigid roles, Stressful relationships	J	K	L

of living in resource communities. Again, given the scope of this report already, these predictions cannot be specifically developed here. One family type is briefly illustrated below.

The Type C Family. A family unit with flexible roles, relatively positive relationships, and distinctly child-oriented will be quite resilient even in the face of a highly problematic situation in the resource community. Living in a mobile home, the excessive absence of a husband due to demanding work schedules, the relative inadequacy of community sponsored programs and recreational facilities, and high costs will have an impact on Family C. This family will "make do", spend more time creating interesting things to do for and with their children, wives will assume a more active and involving role in the household and in spending time with the children, husbands will cut out previous extracurricular activities associated with work and other involvements so as to spend more time with his family. Whether this family will be stayers, however, depends on their satisfaction with these adjustments over an extended period of time. If little relief is in sight, they will likely leave but not until they have given it their best. Should the work situation itself, however, turn out to be unsatisfying, this family may leave quickly in order to re-establish a better situation for their children.

8.3 RECOMMENDATIONS

Based on the comprehensive review of literature on geographical mobility, family impact, resource development communities, native communities, and the Fort McMurray area, a number of recommendations may be identified. Two notes of caution, however, should be mentioned. First, literature reviews per se are not conducive to recommendations concerning policy. At best, they can reflect on the adequacy of existing data and the type of data that should be obtained in the future. Given the overwhelming descriptive nature of existing research, its relative inadequacy with respect to fundamental issues in social impact, and the general neglect of theoretically oriented research designs, policy recommendations with respect to what should be done in Fort

McMurray to solve the problems cannot be made. Second, the recommendations to follow are partly based on the review of literature itself and partly based on my own opinions regarding the Alberta Oil Sands Environmental Research Program. I have not attempted to arrange the recommendations in any order of priority.

1. A central reference registry of all government or government-sponsored papers and reports should be established.

Such a procedure would reduce the difficulty in identifying relevant materials quickly in determining the parameters of a research project. Infinite hours, it seemed, were spent checking and cross-checking references in numerous government libraries. A central reference card file, preferably with an annotation of the content, or at least an abstract, of materials might be placed in whatever the Government of Alberta Library turns out to be. This registry should also conduct a regularized and systematic search of consulting firms, research centres and related agencies with the objective of soliciting references. Each reference card should contain the location of the paper or report and the means by which it may or may not be obtained. It would also reduce the scope and complexity of literature review projects.

A related, but more ideal, procedure should also be employed. Copies of all unpublished papers and reports, and other documents, which given government departments consider to be of importance and general value should be placed in this central library. In reality, this is a relatively modest step toward facilitating research activities.

One possible and somewhat attractive option is to specifically cooperate with the Oil Sands Research Centre of the Alberta Research Council in insuring that their computerized data files include all government reports and papers. At present, their data system emphasizes the physical sciences, earth sciences, transportation and surface water, the atmospheric sciences, and industrial and engineering concerns. They have very little social impact data.

The endless compiling of bibliographies by differing departments of government serves little purpose. Existing bibliographies overlap for markedly differing reasons that frequently have little to do with specific research projects funded by a given department.

In general, the approval of this recommendation would help to reduce redundancy in research programs within specific departments and between departments of government. It would also reduce the scope and complexity of literature review projects such as this one.

2. The Alberta Oil Sands Environmental Research Program should support a single longitudinal quantitative research study on the relationship between resource development and individual and family well-being in the Fort McMurray area.

The reasons for this recommendation are detailed in Section 8.1 Existing research has not really assessed social impact. Considerable opinions have been collected about personal and social problems in resource development areas, but these problems have not been studied in depth. Social impact issues have been addressed selectively and in a cursory manner. Existing research has not employed theory to advantage. To this point, the research literature enables a description of life in resource communities but cause and effect relationships cannot be established.

In the interest of correcting certain of these problems and in conducting research that can be useful in policy development and implementation, it is recommended that a research program over an initial two-year period be funded. The characteristics of the research project are tentatively and briefly described below.

1. The samples. Stratified random samples should be drawn from three populations: recent immigrants to Fort McMurray; recent immigrants to a more mature resource community; and natives living in Fort McMurray, Anzac and Fort MacKay. The first two samples should be stratified to insure a representative sample of both professional and non-professional employees.

2. Time-frame. Each of these three samples should be studied in two time periods. The first sample would, in the case of immigrants, be drawn from the population who have lived in the community for less than one year. This sample would be followed and studied again 18 months later. Those who have left, broken up, or whatever, would be contacted in whatever community they have moved to. The sample in the more mature community need not be newcomers. The key lies in interviewing this sample 18 months later as well.

Similarly, a random sample of natives would be drawn from the areas identified. The concern here, being they have already lived in the area, is to establish baseline information. The native sample would also be interviewed 18 months later.

In order to provide comparative native data, the more mature resource community sample will need to include natives to be studied in the two time periods as well.

3. Special-sample. Given the fact that Syncrude is not yet in the production phase but is moving several families a week to the area, it is recommended that a non-random sample of hired employees who have not yet moved be contacted and interviewed before they move. This procedure would need to rely on names provided by Syncrude, and as they become available, make immediate contact with the new employees in their community of origin.

This sample should also be followed through the arrival and adjustment process. Accordingly, interviews would be conducted for a second time within six months of their arrival, and again 18 months later.

4. The respondents. Data should be obtained from both the husband and wife and the eldest child if in grade seven or above.

5. Issues and variables to be measured. This report presents a model of the basic issues and the variables which will need to be measured. Each of these factors and variables should be included in the instruments and procedures developed for the

study. A pretest of the instruments will be necessary.

6. Multidimensional instruments. The study should not be limited to an interview alone. Other procedures such as field experimentation and the recording of verbal and nonverbal observations should be considered. It may be determined that they are not necessary.

7. Statistical analysis. Step-wise multiple regression, path analytic, and time-series analysis techniques should be employed in testing the interrelationships among the variables and their interconnection over time. The research model is uniquely conducive to this format.

8. Funding. Initial funding should be guaranteed for a two-year period to enable the collection of data in the first time period, its analysis, and the preparation of the first report. Funding for the second two years may be contingent on satisfaction with the results of the first study, within reasonable limits. The second period would begin with the collection of the second wave of data shortly after the beginning of the fiscal year. The more complicated analysis of this data lies in comparing the data over the two time frames, analyzing the results, and designing the policy implications.

The above proposal is a natural conclusion to the nature of the data reviewed and integration in this report. It is suggested that the theoretical model is uniquely relevant to defining and explaining the central issues in individual and family well-being in resource communities. This proposal reflects my best judgment on the type of research which should now be funded. It would be unfortunate if the work of this exploratory review of the literature is shelved and in the end neither informs nor influences the Alberta Oil Sands Environmental Research Program.

The proposal, as defined above, is distinctly tentative in nature. Further development of the research design and the instruments to be employed might well constitute the first phase of the funding period.

3. Several smaller demographic and indicator studies should be funded in conjunction with the major quantitative study. Deliberate procedures must be established in coordinating and integrating these smaller research projects with the major study.

There is considerable existing demographic data, vital statistics data, and data collected by various agencies which has not been systematically studied. This wealth of data is in several domains including health and illness, schooling, housing, recreation use, counseling services, labor force data, household and family census data, illegitimacy, divorce, alcohol and drug use, crime rates, and incarceration data, etc. (cf. McVey 1976). This is valuable information. Baselines need to be established in each substantive indicator area. A systematic data recording and monitoring procedure should be set up to facilitate the rapid compilation and analysis of change in these indicators. It is recommended that a computer storage and retrieval system either be established by the Alberta Oil Sands Environmental Research Program for existing demographic and statistical indicator data or an agreement be reached with existing computer facilities (e.g. Health and Social Development) concerning data input, storage, and access.

It is also recommended that the researchers associated with the major quantitative study be consulted concerning the parameters and scope of these smaller indicator studies. This will serve to eliminate overlap and insure the linkage of these data sources to the data being obtained in the survey. A research committee might be set up composed of the researchers in each of these projects to facilitate information exchange on a regular basis.

The content of these smaller studies should not involve the review of literature, *per se*, but should rather be distinctly concerned with obtaining the data available. These data should be organized and summarized and the data collection procedures and ready access be improved.

4. A research study of work camps is an important, untapped social setting in resource communities. A study then of organization, interrelationships, problems, and turnover should be seriously considered.

Finally, one of the more interesting and yet untapped areas of social impact inquiry is the work camp. Little information is available on the organization of work camps, the frequency and nature of interpersonal relationships in the camp, or with the local community, the kinds of problems and satisfactions encountered by workers, and the reasons for turnover. What conditions might facilitate, for example, a camp worker becoming a stable community resident. Although workers tend to be single males, an increasing number of single females are getting jobs and living in camps. It is commonly assumed that the single male worker descends on the local resource community, along with his peers, looking for unattached or available female companionship. The work camp is a significant area of social interaction. It certainly falls within the terms of reference of the Alberta Oil Sands Environmental Research Program. It is a propitious time to study this aspect of social impact in depth.

8.4 CONCLUSIONS

This study has involved a far-reaching and comprehensive review of existing research, in both published and unpublished form, on the relationship between rapid development and individual and family well-being. The research has been summarized and critically reviewed with respect to social impact issues and methodological concerns. Based on the data available, and existing theoretical traditions, a theoretical model of the basic factors and variables in social impact research has been developed. This model not only organizes the existing materials; it also suggests a definitive and substantive research program. The major recommendation growing out of this study is that a longitudinal research study be funded in the forthcoming year which employs the variables identified in this report.

It is hoped that this report will be useful to the work of the Program and that the implications and suggestions growing out of the study will have an influence in the shaping of the research commitments and projects of the Alberta Oil Sands Environmental Research Program.

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10. AOSERP RESEARCH REPORTS

1. AOSERP First Annual Report, 1975
2. AF 4.1.1 Walleye and Goldeye Fisheries Investigations in the Peace-Athabasca Delta--1975
3. HE 1.1.1 Structure of a Traditional Baseline Data System
4. VE 2.2 A Preliminary Vegetation Survey of the Alberta Oil Sands Environmental Research Program Study Area
5. HY 3.1 The Evaluation of Wastewaters from an Oil Sand Extraction Plant
6. Housing for the North--The Stackwall System
7. AF 3.1.1 A Synopsis of the Physical and Biological Limnology and Fisheries Programs within the Alberta Oil Sands Area
8. AF 1.2.1 The Impact of Saline Waters upon Freshwater Biota (A Literature Review and Bibliography)
9. ME 3.3 Preliminary Investigations into the Magnitude of Fog Occurrence and Associated Problems in the Oil Sands Area
10. HE 2.1 Development of a Research Design Related to Archaeological Studies in the Athabasca Oil Sands Area
11. AF 2.2.1 Life Cycles of Some Common Aquatic Insects of the Athabasca River, Alberta
12. ME 1.7 Very High Resolution Meteorological Satellite Study of Oil Sands Weather: "a Feasibility Study"
13. ME 2.3.1 Plume Dispersion Measurements from an Oil Sands Extraction Plant, March 1976
15. ME 3.4 A Climatology of Low Level Air Trajectories in the Alberta Oil Sands Area
16. ME 1.6 The Feasibility of a Weather Radar near Fort McMurray, Alberta
17. AF 2.1.1 A Survey of Baseline Levels of Contaminants in Aquatic Biota of the AOSERP Study Area
18. HY 1.1 Interim Compilation of Stream Gauging Data to December 1976 for the Alberta Oil Sands Environmental Research Program
19. ME 4.1 Calculations of Annual Averaged Sulphur Dioxide Concentrations at Ground Level in the AOSERP Study Area
20. HY 3.1.1 Characterization of Organic Constituents in Waters and Wastewaters of the Athabasca Oil Sands Mining Area

21. AOSERP Second Annual Report, 1976-77
22. HE 2.3 Maximization of Technical Training and Involvement of Area Manpower
23. AF 1.1.2 Acute Lethality of Mine Depressurization Water on Trout Perch and Rainbow Trout
24. ME 4.2.1 Air System Winter Field Study in the AOSERP Study Area, February 1977.
25. ME 3.5.1 Review of Pollutant Transformation Processes Relevant to the Alberta Oil Sands Area
26. AF 4.5.1 Interim Report on an Intensive Study of the Fish Fauna of the Muskeg River Watershed of Northeastern Alberta
27. ME 1.5.1 Meteorology and Air Quality Winter Field Study in the AOSERP Study Area, March 1976
28. VE 2.1 Interim Report on a Soils Inventory in the Athabasca Oil Sands Area
29. ME 2.2 An Inventory System for Atmospheric Emissions in the AOSERP Study Area
30. ME 2.1 Ambient Air Quality in the AOSERP Study Area, 1977
31. VE 2.3 Ecological Habitat Mapping of the AOSERP Study Area: Phase I
32. AOSERP Third Annual Report, 1977-78
33. TF 1.2 Relationships Between Habitats, Forages, and Carrying Capacity of Moose Range in northern Alberta. Part I: Moose Preferences for Habitat Strata and Forages.
34. HY 2.4 Heavy Metals in Bottom Sediments of the Mainstem Athabasca River System in the AOSERP Study Area
35. AF 4.9.1 The Effects of Sedimentation on the Aquatic Biota
36. AF 4.8.1 Fall Fisheries Investigations in the Athabasca and Clearwater Rivers Upstream of Fort McMurray: Volume I
37. HE 2.2.2 Community Studies: Fort McMurray, Anzac, Fort MacKay
38. VE 7.1.1 Techniques for the Control of Small Mammals: A Review
39. ME 1.0 The Climatology of the Alberta Oil Sands Environmental Research Program Study Area
40. WS 3.3 Mixing Characteristics of the Athabasca River below Fort McMurray - Winter Conditions
41. AF 3.5.1 Acute and Chronic Toxicity of Vanadium to Fish
42. TF 1.1.4 Analysis of Fish Production Records for Registered Traps in the AOSERP Study Area, 1970-75
43. TF 6.1 A Socioeconomic Evaluation of the Recreational Fish and Wildlife Resources in Alberta, with Particular Reference to the AOSERP Study Area. Volume I: Summary and Conclusions
44. VE 3.1 Interim Report on Symptomology and Threshold Levels of Air Pollutant Injury to Vegetation, 1975 to 1978
45. VE 3.3 Interim Report on Physiology and Mechanisms of Air-Borne Pollutant Injury to Vegetation, 1975 to 1978

46. VE 3.4 Interim Report on Ecological Benchmarking and Biomonitoring for Detection of Air-Borne Pollutant
47. TF 1.1.1 A Visibility Bias Model for Aerial Surveys of Moose on the AOSERP Study Area
48. HG 1.1 Interim Report on a Hydrogeological Investigation of the Muskeg River Basin, Alberta
49. WS 1.3.3 The Ecology of Macrobenthic Invertebrate Communities in Hartley Creek, Northeastern Alberta
50. ME 3.6 Literature Review on Pollution Deposition Processes
51. HY 1.3 Interim Compilation of 1976 Suspended Sediment Data in the AOSERP Study Area
52. ME 2.3.2 Plume Dispersion Measurements from an Oil Sands Extraction Plant, June 1977
53. HY 3.1.2 Baseline States of Organic Constituents in the Athabasca River System Upstream of Fort McMurray
54. WS 2.3 A Preliminary Study of Chemical and Microbial Characteristics of the Athabasca River in the Athabasca Oil Sands Area of Northeastern Alberta.
55. HY 2.6 Microbial Populations in the Athabasca River
56. AF 3.2.1 The Acute Toxicity of Saline Groundwater and of Vanadium to Fish and Aquatic Invertebrates
57. LS 2.3.1 Ecological Habitat Mapping of the AOSERP Study Area (Supplement): Phase I
58. AF 2.0.2 Interim Report on Ecological Studies on the Lower Trophic Levels of Muskeg Rivers Within the Alberta Oil Sands Environmental Research Program Study Area
59. TF 3.1 Self-Aquatic Mammals. Annotated Bibliography
60. WS 1.1.1 Synthesis of Surface Water Hydrology
61. AF 4.5.2 An Intensive Study of the Fish Fauna of the Steepbank River Watershed of Northeastern Alberta.

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