THE IDENTIFICATION OF ALCOHOL PROBLEMS WITHIN INDUSTRY:
A STUDY IN NORTHWESTERN BRITISH COLUMBIA

by

TED MYERS

B.A., University of Saskatchewan, 1967
M.S.W., University of Manitoba, 1971

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE
(Health Services Planning)

in
THE FACULTY OF GRADUATE STUDIES
Department of
HEALTH CARE AND EPIDEMIOLOGY

We accept this thesis as conforming
to the required standard

The University of British Columbia
July, 1978

© Ted Myers, 1978
In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the Head of my Department or by his representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of Health Care and Epidemiology

The University of British Columbia
2075 Wesbrook Place
Vancouver, Canada
V6T 1W5

Date August 21, 1978
ABSTRACT

This was the second phase of a study which examined the alcohol problem within the Kitimat-Stikine Regional District in Northwestern British Columbia. In the formative phase, demand (professional) and supply (consumption) profiles of the problem were developed. From these profiles the value of measurement of the problem from a broad behavioral base, rather than records of mortality and morbidity, for the purposes of developing preventive and treatment programs, was demonstrated. First, however, an understanding of norms for labelling behavior, and attitudes and beliefs toward alcohol abuse which was the subject of the thesis was considered necessary.

Data were collected with the use of a five-part interview schedule which allowed individuals with and without experience to respond, to demonstrate their labelling of problems and the actions taken following such labelling. One hundred and eighty-two male workers from each of three levels in seven industries and five communities were interviewed. From the literature and in pretests of the instrument, it was found that sets of organizational, personal and interactional variables required further explanation.

The data finally collected proved difficult to analyze and a systems model was used as a basis for interpretation. The information obtained confirmed
the utility of conceptualizing the "Identification Process" in three stages: Recognition, Identification/Classification, and Action-Decision/Reclassification. The inputs of stage two seemed loosely related to outputs or actions taken at stage three.

In stage two, although many unexplained extraneous events were occurring, community size and a number of related personal variables (i.e., ethnic mix, age, education) were important to the type and location of identification. In stage three it was found that when positive action was taken the organizational level was rather more important. Inaction was clearly related to the length of time an individual had lived in the north. The differential between positive action and inaction was augmented by community size and related variables.

It was concluded that there are cultural differences between small and large communities and cultural traditions in the north, which affect preventive and treatment programs. An apparent dilemma resulting from a divergence in community mores and program goals, stems ultimately from industrialization. The "culture of drinking" which was described as "a northern way of life" poses problems for northerners who wish to be part of industrialized society.

Drinking problems can be treated in both "humanitarian" and "utilitarian" ways. The industrial society calls for "utilitarian" methods which may seem alien to members of small communities and "elite groups"
of individuals who have expected to be treated differently. The egalitarian planning model, incorporating participation and self-responsibility with clearcut expectations, would appear to be the appropriate choice, protecting humanitarian interests and linking marginal groups into effective identification and treatment processes.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>One INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Background of the Study</td>
<td>4</td>
</tr>
<tr>
<td>1.2 The Present Study</td>
<td>6</td>
</tr>
<tr>
<td>1.3 The Significance of the Study</td>
<td>7</td>
</tr>
<tr>
<td>1.4 The Approach to the Literature</td>
<td>9</td>
</tr>
<tr>
<td>Two ALTERNATIVE PLANNING MODELS: OCCUPATIONAL ALCOHOL PROGRAMS IN HISTORICAL PERSPECTIVE</td>
<td>12</td>
</tr>
<tr>
<td>2.1 Hierarchical Programming</td>
<td>13</td>
</tr>
<tr>
<td>2.2 Egalitarian Programming</td>
<td>20</td>
</tr>
<tr>
<td>2.3 Present Program Content</td>
<td>21</td>
</tr>
<tr>
<td>Three CONCEPTUALIZING ALCOHOL USE AND ABUSE</td>
<td>25</td>
</tr>
<tr>
<td>3.1 Definitions of Alcohol Abuse</td>
<td>26</td>
</tr>
<tr>
<td>3.2 Disease: Clinical and Social System Perspectives</td>
<td>28</td>
</tr>
<tr>
<td>3.3 Discussion of Perspective Differences</td>
<td>31</td>
</tr>
<tr>
<td>Four THE IDENTIFICATION PROCESS</td>
<td>34</td>
</tr>
<tr>
<td>4.1 Recognition/Observation</td>
<td>35</td>
</tr>
<tr>
<td>4.2 Identification/Classification</td>
<td>36</td>
</tr>
<tr>
<td>4.3 Action-Decision/Reclassification for Action</td>
<td>38</td>
</tr>
<tr>
<td>4.4 An Effective Identification Process</td>
<td>40</td>
</tr>
<tr>
<td>Five THE MEASUREMENT OF EFFECTS OF ALCOHOL ABUSE</td>
<td>44</td>
</tr>
<tr>
<td>5.1 National, Provincial and Regional Incidence</td>
<td>44</td>
</tr>
<tr>
<td>5.2 Industrial Estimates</td>
<td>45</td>
</tr>
<tr>
<td>5.3 Estimating Cost</td>
<td>47</td>
</tr>
<tr>
<td>5.4 Direct Costs</td>
<td>48</td>
</tr>
<tr>
<td>5.5 Indirect Costs</td>
<td>50</td>
</tr>
<tr>
<td>5.6 Standardized Measurement and Cost Calculation of the Problem in Industry</td>
<td>52</td>
</tr>
<tr>
<td>Six FACTORS UNIQUE TO NORTHERN COMMUNITIES</td>
<td>55</td>
</tr>
<tr>
<td>6.1 Community Structure</td>
<td>55</td>
</tr>
<tr>
<td>6.2 Treatment and Service Resources</td>
<td>58</td>
</tr>
<tr>
<td>6.3 Sociocultural Factors and Drinking Style</td>
<td>60</td>
</tr>
<tr>
<td>Chapter</td>
<td>Section</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Seven</td>
<td>RESEARCH MODEL</td>
</tr>
<tr>
<td></td>
<td>7.1 Scope of the Model</td>
</tr>
<tr>
<td></td>
<td>7.2 Measures</td>
</tr>
<tr>
<td></td>
<td>7.3 Hypotheses</td>
</tr>
<tr>
<td>Eight</td>
<td>METHODS AND PROCEDURES</td>
</tr>
<tr>
<td></td>
<td>8.1 Setting and Subjects</td>
</tr>
<tr>
<td></td>
<td>8.2 Selection of Sample</td>
</tr>
<tr>
<td></td>
<td>8.3 Interview Schedule and Administration</td>
</tr>
<tr>
<td></td>
<td>8.4 Interviewing Process</td>
</tr>
<tr>
<td></td>
<td>8.5 Data Preparation - The Content Analysis</td>
</tr>
<tr>
<td></td>
<td>8.6 Subjective Comments and Impressions</td>
</tr>
<tr>
<td>Nine</td>
<td>DATA ANALYSIS</td>
</tr>
<tr>
<td></td>
<td>9.1 Sample Distribution on Demographic Data</td>
</tr>
<tr>
<td></td>
<td>9.2 Validation of Scenarios</td>
</tr>
<tr>
<td></td>
<td>9.3 Principal Analysis</td>
</tr>
<tr>
<td></td>
<td>9.4 Directness of Action Taken</td>
</tr>
<tr>
<td></td>
<td>9.5 Relationship Between the Dependent Variables</td>
</tr>
<tr>
<td></td>
<td>9.6 Limitations of Findings</td>
</tr>
<tr>
<td>Ten</td>
<td>SUMMARY AND DISCUSSION</td>
</tr>
<tr>
<td>REFERENCES</td>
<td></td>
</tr>
<tr>
<td>APPENDIX A</td>
<td></td>
</tr>
<tr>
<td>APPENDIX B</td>
<td></td>
</tr>
<tr>
<td>APPENDIX C</td>
<td></td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table | Page
---|---
6.1 Estimated Proportions of Ethnic Groupings for Kitimat-Stikine Regional District Based on 1976 Mini Census | 57
8.1 Location of Interview | 90
9.1 Distribution of Individuals in Sample on Socio-Demographic Variables | 100
9.2 Intervening Variable Associations with Community Size | 102
9.3 Intervening Variable Associations with Industry Size | 102
9.4 Intervening Variable Associations with Level of Employment | 102
9.5 Age Groupings by Community Size | 103
9.6 Age Groupings by Industry Size | 103
9.7 Age Groupings by Level of Employment | 103
9.8 Length of Time in North by Community Size | 104
9.9 Length of Time in North by Industry Size | 104
9.10 Length of Time in North by Level of Employment | 104
9.11 Place of Birth by Community Size | 106
9.12 Place of Birth by Industry Size | 106
9.13 Place of Birth by Level of Employment | 106
9.14 Education by Community Size | 108
9.15 Education by Industry Size | 108
9.16 Education by Level of Employment | 108
9.17 Marital Status by Level of Employment | 109
9.18 Scenario Most Likely Associated with Alcohol: Comparisons of Rankings | 111
9.19 Ranking of Problem Association (Labelling) for Scenarios | 111
9.20 Significant Rank Order Correlations of Other Labels with the Label "Drinking Problem" in Scenarios | 111
9.21 Range in Number of Each Type of Cues by Set of Cues Recalled | 115
9.22 Mean Number of Cues for Each Type by Set of Cues Recalled | 115
9.23 Significant Associations of Community/Industry Size with # of Cues | 117
9.24 Range and Mean Number of Cues Within Dimensions of Composite Variable "Community/Industry Size" When Relationship was Significant | 119
9.25 Significant Associations of Level of Employment with Number of Cues | 121
9.26 Range and Mean Number of Cues Within Categories of Level of Employment when Relationship was Significant | 121
<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.27</td>
<td>Significant Effects by Intervening Variables on Number of Cues</td>
</tr>
<tr>
<td>9.28</td>
<td>Type of Cues (showing categories) by Set of Cues when identified outside of work</td>
</tr>
<tr>
<td>9.29</td>
<td>Type of Cues (showing categories) by Set of Cues when identified at work</td>
</tr>
<tr>
<td>9.30</td>
<td>Proportions of Variance Explained (Multiple R^2) in Appearance Cues by Model</td>
</tr>
<tr>
<td>9.31</td>
<td>Proportion of Variance Explained (Multiple R^2) in Interpersonal Cues by Model</td>
</tr>
<tr>
<td>9.32</td>
<td>Size of Variation (% Points Difference) in Proportion of Cues per Unit of Industry Size</td>
</tr>
<tr>
<td>9.33</td>
<td>Size of Variation (% Points Difference) in Proportion of Cues per Unit of Community Size</td>
</tr>
<tr>
<td>9.34</td>
<td>Proportion of Variance Explained in Appearance Cues by Model</td>
</tr>
<tr>
<td>9.35</td>
<td>Size of Variation (% Points Difference) in Proportion of Cues per Unit of Level of Employment</td>
</tr>
<tr>
<td>9.36</td>
<td>Community Size by Type of First Action</td>
</tr>
<tr>
<td>9.37</td>
<td>Community Size by Type of First Action Controlling for Place of Identification (outside of work)</td>
</tr>
<tr>
<td>9.38</td>
<td>Community Size by Type of First Action Controlling for Place of Identification (at work)</td>
</tr>
<tr>
<td>9.39</td>
<td>Level of Employment by Type of Action</td>
</tr>
<tr>
<td>9.40</td>
<td>Level of Employment by Type of Action (controlling for Place of Identification (at work))</td>
</tr>
<tr>
<td>9.41</td>
<td>Distance Between Identifier and Identified by Type of Action</td>
</tr>
<tr>
<td>9.42</td>
<td>Distance Between Identifier and Identified by Type of Action (controlling for Place of Identification (at Work))</td>
</tr>
<tr>
<td>9.43</td>
<td>Categories of Direct Action Ranked by Order of Frequency</td>
</tr>
<tr>
<td>9.44</td>
<td>Categories of Discussion Ranked in Order of Frequency</td>
</tr>
<tr>
<td>9.45</td>
<td>Type of Discussion by Level of Employment</td>
</tr>
<tr>
<td>9.46</td>
<td>Types of Discussion by Age Groups</td>
</tr>
<tr>
<td>9.47</td>
<td>Linkage Proportions by Type of Cue (Selecting for Place of Identification)</td>
</tr>
</tbody>
</table>
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>The Identification of Problems</td>
<td>3</td>
</tr>
<tr>
<td>4.1</td>
<td>Schemata illustrating differences in Process and Effects of Hierarchical and Egalitarian Structured Programs</td>
<td>41</td>
</tr>
<tr>
<td>7.1</td>
<td>Treatment of Variables within Research Model</td>
<td>65</td>
</tr>
<tr>
<td>7.2</td>
<td>Primary Exploratory Relationships</td>
<td>66</td>
</tr>
<tr>
<td>7.3</td>
<td>Combinations of Composite Variable Community-Industry Size in Study</td>
<td>69</td>
</tr>
<tr>
<td>8.1</td>
<td>Map of the Province of British Columbia showing location of Regional District of Kitimat-Stikine (Region of Study)</td>
<td>75</td>
</tr>
<tr>
<td>8.2</td>
<td>Number of Industries by Community Size</td>
<td>77</td>
</tr>
<tr>
<td>8.3</td>
<td>Characteristics of Communities and Industries Studied</td>
<td>78</td>
</tr>
<tr>
<td>8.4</td>
<td>Flow Chart of Sampling and Interviewing Processes</td>
<td>81</td>
</tr>
<tr>
<td>8.5</td>
<td>Scenario Construction</td>
<td>85</td>
</tr>
<tr>
<td>8.6</td>
<td>Summary of Interview Schedule</td>
<td>88</td>
</tr>
<tr>
<td>8.7</td>
<td>Examples of content - Words and Phrases included in four major types of cue</td>
<td>95</td>
</tr>
<tr>
<td>8.8</td>
<td>Examples of Words and Phrases in Content Analysis of Direct Action</td>
<td>97</td>
</tr>
</tbody>
</table>
ACKNOWLEDGEMENTS

The support, encouragement and guidance of many has made this a treasured experience.

To the funding agencies, Non-Medical Use of Drugs Directorate and the British Columbia Health Services Research Fund; to the Regional District of Kitimat-Stikine and Mr. John Pousette; to the industries, unions and individuals who consented to participate in the study; to Dr. C.J.G. Mackenzie who sponsored the major funding for the project, I would like to express my gratitude.

To my committee: Dr. Crichton, Dr. McGill, Dr. Storm—thank you for your devotion, your wise and sensitive criticism and also for allowing me to reject, sometimes unwisely, your advice.

To Dr. McGill, who acted as chairperson throughout the study, special credit must be given. Thank you, Betty, for your constant interest in the absence of rewards.

To my fellow students who have lived through this thesis with me: the many ways in which you have shared in this celebration of life—its joys, distress and ennui—will long be remembered.

To Margaret, thank you for your inextinguishable enthusiasm for interviewing, and for many mountain top experiences while in the north.

To my family and friends outside the university—thank you for your patience; yes, and your wisdom which was always present.
Chapter One

INTRODUCTION

Alcohol abuse is reputed to be the number one non-medical drug problem in Canada (LeDain, 1970). In spite of agreement that the drug alcohol contributes to a problem, practitioners and health planners face a field which is riddled by complex and varied problem definition and interpretation. Exploration of these complexities increases the awareness of the impingement of alcohol abuse on many social institutions outside the health care system. In part, a solution to the definitional ambiguities can be found by understanding the context in which a definition is developed.

The admission that alcohol abuse is a non-medical problem in itself forces planners of health care to look beyond traditional diagnostic and treatment services. They must look towards the impact on the individual, the family, and the community, as well as its resources, when seeking a solution, or addressing requirements for the prevention and reduction of the problem (Lalonde, 1974).

It is recognized that the actors in the identification of the problem and, therefore, potential partisans in the solution of the problem, are not just the physician, nurse and patient. Several models have been developed which suggest that in the provision of health services greater responsibility can be taken by non-traditional health professionals and family members in the securing of appropriate service and in the provision of care. In fact, the individual:
himself/herself can assume more responsibility, if given appropriate knowledge and incentives, to detect, and to provide "self care" (Levin, 1976). One such model has been suggested by Roberts et al (1966) and can be seen in Figure 1.1.

Attention has recently been given to alcohol and drug abuse in the workplace (Cutler and Jones, 1972). There has developed a recognition that alcohol and drug abuse affects production. This awareness is part of a larger occupational health movement based on the belief that the successful functioning of the economic sector of a community is crucial to a stable society.* Spurring the movement on is the belief that principles of efficiency and responsibility at all organizational levels are essential to production.

There is belief that identification of alcohol abuse within the workplace provides for more effective action to counter the problems. Issues of morality, professional values and clinical stereotypes associated with alcohol abuse and influencing the identification can be replaced by more neutral concerns of work, production and cost effectiveness within the workplace. Many of the programs which have met with failure in industry have adopted traditional treatment approaches. Programs have often evolved in an ad hoc manner from the initiative of an individual, union and/or industry (Von Weigand, 1976). Programs have been introduced without a thorough understanding of the ways in which an individuals' problems are presented, the contribution of attitudes to problem definition, and differences in interpretations given the problem by the partisans.

Figure 1.1: The Identification of Problems
Recognizing that the treatment for most health problems may be within several segments of a community and that there may be more than one solution, the development of a regional plan which includes occupational alcohol programs becomes important. This is particularly important to industrial communities lying above the 54° parallel in British Columbia. In this area of Canada there are known differences in sociodemographic and geographic factors which would be expected to alter the norms in the presentation and identification of problems such as the alcohol problem.

1.1 Background of the Study

This study was conducted in the Regional District of Kitimat-Stikine which is in the northwest corner of the province of British Columbia. Both community and industrial leaders in the area have expressed concern about the problem.

Much concern has been expressed by the health service professionals and employers about the problem of alcoholism in the north and their feelings of inadequacy in handling it. Little is known about alcoholism and its incidence in the Region because statistics have not been collected, but it is seen to exist rather obviously. The existence of such heavy drinking problems is regarded by professionals as symptomatic of a deeper malaise which needs to be examined further.*

The study which is detailed in this thesis was the second of a two-phase project developed to explore alcohol abuse and to provide direction and support for a regional alcohol program. The major studies in both phases utilized a

"social systems epidemiological framework" (Mercer, 1973). Phase I was primarily formative and allowed for the refinement of methodology and approach for Phase II, as well as the development of an understanding of the process of "professional" identification of the problem. The present research focuses on the "lay" perspective and examines the process of identification of the problem within industry.

**PHASE I**

During Phase I several activities were conducted simultaneously to develop a profile of the problem. These activities included:

(a) A record analysis of alcohol related events in RCMP, Hospital and Mental Health Records;

(b) An analysis of regional mortality statistics related to alcohol consumption based on provincial vital statistics;

(c) The development of a consumption index—-from data available through major liquor distributors (including both the Provincial Liquor Administration branch, and brewery wholesale distributors);

(d) A survey of professional opinion about the problem—-including educators and school counsellors, major health and social service agency directors;

(e) Interviews with regional directors of all major social and health agencies.

This first phase allowed for development of a demand (professional) and supply (consumption) profile of the problem and provided an understanding of:

(a) The configurations of individuals who are presently being identified by the professionals of the region as having an alcohol problem;
(b) The limitations of present resources and problems in providing comprehensive alcohol treatment and prevention programs;

(c) Differences in the recording of types of alcohol-related events which occur within the region;

(d) The seasonal changes in the reported problem;

(e) The relationship between demand and supply profiles of the problem (Myers, 1976).

1.2 The Present Study

The present study followed the recommendations of Phase I and was directed toward the initial concerns about the inability to measure the alcohol problem without a clearer understanding of norms and the uniqueness of the processes of identification in the North. From the experience of Phase I, it was felt that the logical place to develop the present study was within the industries of the region. The major rationale for taking this focus in the present study, in addition to the interest expressed by personnel managers and occupational health personnel, was the belief that the norms expressed by all levels of industry would be representative of the norms of the population of the region. The approach at the "grass roots level" selected for the research was based on the assumption that the knowledge of alcohol use and abuse is not limited to a select community of scientific, health, or social service personnel. A second rationale was based on the expressed belief that a major contributing factor to the high rate of alcohol consumption and consequent abuse of alcohol in northern communities was the impact and presence of rapid industrial development.
The interest of the study was not to measure the extent of the problem but, at a more basic level, to explore beliefs about alcohol abuse, and in a 'process' framework, to determine characteristics within communities and industries which affect the beliefs and, in turn, the identification of an alcohol problem. It was felt that an understanding of the differences between the setting in which this study was conducted and those recorded in the literature would lead to clearer working hypotheses and suggestions for changes necessary for earlier identification, as well as provide clearer principles for evaluation of programs, and more individualized programs for the prevention and reduction of the problem.

1.3 Significance of the Study

The major contribution of the present study was expected to be the development of an understanding of the identification process within the industries of the region and more specifically:

(a) To develop a "working man's definition" of alcohol problems. Because of the reported differences in alcohol problems in the North, a normative definition of alcohol problems unique to the North was considered vital to the appropriate placement and focus of any alcohol problem.

(b) To produce some understanding of the differences that exist between industrial communities with unique demographic characteristics which should be considered when adapting any occupational alcohol program model.
(c) To provide an understanding of where alcohol problems can be most effectively identified (i.e., on the job or through other social interactions within the community).

(d) To develop guidelines for a regional model for both the prevention and treatment of alcohol abuse. Such a model would concentrate on linking the resources where available within industrial and community facilities.

(e) To provide some basic data for ongoing discussion of the alcohol problem within the region.

From a planning perspective, the significance of a study can be assessed on both (1) the knowledge or information gained, and (2) the approach taken in the research. The knowledge in this study will be sought through assessment and consolidation of the literature and in an exploratory study of the identification process. An understanding of process is considered vital to the measurement of the problem and, in turn, to the development of any health plan. This is stressed by Mercer, who states:

The prevalence rate for [the problem] will be relative to the content, focus, level, formalization and tolerance limits of the norms of a particular social system, and the extent to which the status of [the problem] is differentiated within the structure" (Mercer, 1973 : 51).

The approach is important to the effective implementation of a plan. In this study a modified action research approach will be taken (Skeena Manpower Development Committee, 1977). Action research is based on principles for social change—the belief that finding a solution and implementing a change
requires participation and support of persons at all levels in a system. The Action research mode is undertaken when the "need for development" has been assessed. It is therefore particularly useful in the studies relating to the alcohol problem in developing areas such as northwestern British Columbia where few prevention and treatment programs have been developed.

1.4 The Approach to the Literature

Sources of Literature Reviewed

The amount of literature relating to the "occupational alcohol problem" has grown in recent years. With this development the range in perspective related to differences in the contexts within which the literature has developed, has become marked. Two excellent reports reviewing the most prominent literature in this area were found. The first, hidden behind the intriguing title Spirits and Demons in the Workplace, by Trice and Roman (1972), raises current issues in programming. The second report entitled A Study of Occupational Alcoholism in British Columbia, by Cutler and Jones (1976), relates more specifically to programming issues in British Columbia. Both of these works show most of the literature on this topic to be American, although much of the early historical literature was developed in the United Kingdom.

Much of the literature has reflected considerably more conceptualization of the problem than empirical testing of conceptualizations. There is a predominance of articles presenting subjective impressions and case descriptions of individuals. Many of these are written in a journalistic style and were developed to stimulate industrial interest in occupational alcohol programming.
To relate all subjective impressions to the question of this thesis would require an extensive content analysis of the literature beyond the time available. Nevertheless, the importance of these sources in reflecting upon the "identification process" is equal to that of well developed methodological studies and, therefore, the statements contained therein will be assessed, in a general way, in the first few sections of this study.

The literature was reviewed for the purpose of (1) developing a context for the study, and (2) selecting an appropriate methodology. As there was an absence of well documented empirical studies relating specifically to the identification process of alcohol problems within industry and, more specifically, to industries in the north, the constructs for this thesis relied on the search for trends in occupational alcohol programs and ideological perspectives through an historical review of the literature. The primary sources included in the review of the literature were periodicals in the fields of alcohol studies, business and occupational health. When no specific reference to alcohol abuse was made in the literature, an additional search of literature in the fields of health, organizational behavior and psychology was necessary.

Overview of Studies on Identification

Numerous methodological approaches have been taken in the study of occupational alcohol abuse. Three major types of research appear in the literature: (1) Epidemiological and community treatment surveys, (2) descriptive surveys of the identified ("patient", and (3) modified laboratory studies.
Epidemiological and descriptive surveys had a noted absence of comparisons between the "identified population" and the "population at risk." One study was found which included a non-identified control group (Pell and D'Alonzo, 1970). The primary data bases for studies were medical record data of either industrial treatment programs (Glicksberg and Jacobson, 1972; Warkov et al., 1965), or community treatment facilities (Siassi et al., 1973), and data were generally retrospective. The primary subjects or informants of the studies conducted within industry were either (a) medical or occupational health personnel (Ashley et al., 1976; Glicksberg and Jacobson, 1972), (b) supervisory personnel (Trice and Belasco, 1965; Pell et al., 1973), or (c) identified "alcoholics" (Pell and D'Alonzo, 1970; Heyman, 1976).

Field studies with a community rather than an industrial focus generally had a broadened perspective of "industrial health and safety problems" (Hohn, 1973). Similarly, laboratory studies which were reviewed posited alcohol use as an intervening or independent variable related to dependent variables such as work stress (Mello and Mendelson, 1972; Rapaport, 1965).

The presentation of the subjective and objective knowledge in the review of the literature will relate to both the conceptualization of "identification" for a study model, and the setting of the study. Major sections included will be on: the planning of alcohol abuse programs seen in historical perspective, conceptualization of alcohol use and abuse, the identification process, the measurement of effects of the problem, and unique factors in northern industrial communities.
Chapter Two

ALTERNATIVE PLANNING MODELS: OCCUPATIONAL ALCOHOL PROGRAMS IN HISTORICAL PERSPECTIVE

The critical paths which the development of occupational alcohol programming follow in different countries, provinces and regions vary. Therefore, to tie a description of programs only to a chronological framework is both difficult and unrevealing. However, an understanding of the historical perspective can provide an important explanation of the basis for conflicting interests and concepts in existing programs and research and, in turn, contrasting models can be considered when comparing planning structure effectiveness.

This chapter will take a micro look at the literature and will present developments within two program planning models, namely, hierarchical and egalitarian (Friedson, 1975; Krause, 1977). Although the historical documentation does not always distinguish or separate occupational programs in this way, the words imply ideological opposites in organizational structures. When discussing programs at different stages of development, as reported in the literature, an attempt will be made to comment on policy and functional or structural characteristics of programs. Whenever possible, the impact which various participants have had on program configuration and knowledge of alcohol abuse will be interpreted in order to reflect the importance of the identification process to successful program development.
2.1 Hierarchical Programming

Initial Concerns - (The Fermentation of Interest)

There is evidence that alcohol problems were identified in industry before the creation of structured programs. As a result of interest group development and agitation, emergence of new service professionals, societal and political change, and national and international crises, the shaping of programs began. It is difficult to describe the development of occupational alcohol programs apart from the development of alcohol legislation and treatment programs in general. Although reference will be made to events in this broader context, an exhaustive focus on this area will not be possible.

The literature relates to alcohol abuse in the industrial setting over several decades. One early report from Britain in 1908 indicated: "One firm of 5,000 dismissed eight men due to excessive drinking" (Hawker, 1973).

Initially, recorded concern focused on the description of an individual's personality traits and later on the characteristics of selected occupational groups as causal agents. The maladjustment, often unexplained, was labelled as a physical deficiency or "unexplained ideosyncratic personality factors determined in the formative years of development" (Berlien, 1955: 409). What was being identified was 'drunkenness', and primarily among lower class individuals. The 'inebriate' or person with an alcohol problem because part of a dominant 'skid row' image (National Institute of Mental Health, 1968).

The 'skid row' image, which was reinforced in the late thirties and early forties, is explained by sociologists as serving a boundary maintenance function (Calahan et al, 1969). The application of this image was an easy
way out for anyone having doubts about the normality of his own drinking or alcohol abuse by significant others. The use of these labels may reflect a hangover of beliefs of the puritan-ethic period (Williams, 1972). The increased use of the labels by certain groups in society can be viewed as a defensive reaction to the freedom provided by the repeal of prohibition in the United States in 1933 (Encyclopedia Americana, 1963: 640).

Two organizations, which developed in the private sector, set the attitudes toward the alcohol problem more firmly. These were Alcoholics Anonymous, established as an organization in 1935, and the Women's Christian Temperance Union (W.C.T.U.) established as an organization in 1874, but at its prime in the 1930's. These groups, by virtue of their posited expertise on the problem, gained power and influenced programming. The W.C.T.U. was in fact a major satellite of the Prohibition Party in the United States (Encyclopedia Americana, 1963: 640). These groups, in pursuit of monies and/or support for their causes or charities, concentrated on the skid row drunk, reinforcing the 'skid row image', thus creating a more permanent image of the "alcoholic".

The contribution to the image did not come from the organizational structure itself as much as it did from the ideology expressed (Freeman, 1972). Alcoholics Anonymous, striving for structurelessness, was quite distinct from the Women's Christian Temperance Union, which strove to be part of a political structure and, in fact, succeeded. These groups were also different in that Alcoholics Anonymous was the "identified"—albeit self identified—and the Women's Christian Temperance Union were the "identifiers." In spite of these differences, the two groups set a standard for a moralistic era clearly associated
with a religious or semi-religious philosophy, which was also present in mental health programs (Von Wiegand, 1976). Although the existence of Alcoholics Anonymous and the Women's Christian Temperance Union gave impetus to development of policy, no recorded documentation was found of the actual impact on development of occupational programs with a treatment focus at that time.

The accounts of policies which were the forerunners of treatment programs show that they developed by precedent, through custom and practice rather than rational planning. The principles on which action was taken were diverse and ill-defined. Written policy referred only to alcohol possession or drinking on the company premises. Expulsion and punishment were for the most part regarded as the most appropriate treatment approaches. Individuals in more senior levels of organizations and of upper socio-economic classes in society had a greater number and more discreet options available (Murray, 1949). Preferred treatment, such as removal to back offices and relocation, but not expulsion, were common in the managerial sector. The policy-making group (top management) were seldom mentioned in written policy or procedures.

The shaping of treatment programs per se developed with government intervention and the growth of several professions during and after World War II. Many of the original programs can be related to the war effort. Without a specific interest in occupational policies, government began to develop controls affecting the larger society. For example, in Carlisle, England during the First World War, pubs were taken over by government because of
the uncontrolled drinking among munition workers. The practice of limiting drinking hours occurred at this time. Throughout Britain, the Defense of the Realm Act, 1916 established the power of local magistrates to set drinking hours. This set a precedent for similar practices of government control of drinking in Canada.

The focusing in on the problem in the military is understandable as a major portion of society's resources were being channeled into war and its aftermath. Perhaps one reason why government and military leaders could confront the problem so directly in the military was the "openness" to consumption within the military. "Alcohol had a very important part in military diet" (Moore, 1942: 224).

The first programs modelled within the military adopted a military structure—where the approach was centralized control. The initiatives which are documented in the early 1940's are indicative of government, not private enterprise interest (Barrett, 1943; Moore, 1942; Harrison, 1944; Berlien, 1955). Studies in the military in the early and mid-forties looked primarily for the problem within the lower organizational levels. There were few comparisons made even between occupational groups. Generally, the information collected was inadequate to provide any effective treatment focus.

Two professional groups, psychologists and psychiatrists, emerging in the post-war period, were leaders and gave impetus to changes necessary for development of programs with a greater treatment focus in industry. These professions had their beginnings within military structure and then were accepted into industry; hence, the origins of occupational programs with the treatment focus
we know today. Concerns expressed to military authorities by these profession-
al groups were direct. "...it is impossible to see how modern psychiatric con-
cepts can be reconciled within the military structure as it exists today" (Berlien, 1955: 406).

These professions began to document the failure of programs to be effective:

Thirteen years of prohibition, it's generally conceded, brought on more problems than were corrected, demonstrat-
ing that the alcohol problem is not to be eradicated by law or by proclamation" (Habbe, 1973: 31).

Presnall (1970: 33) stated that there had been faulty logic behind control pro-
grams:

First, there are no recruiting methods that make it possible to spot a prospective employee with early- or middle-stage alcoholism. Second, strict enforcement of company rules against drinking or intoxication on the job would eliminate only those employees in later-middle or early-late stages of alcoholism, because alcoholics are usually able to control or cover up the obvious signs of their drinking well enough to escape detection until very late in the game."

In the late 1940's, as psychologists and psychiatrists in industrial psychology developed their fields and their laboratory research techniques, we see definite program proposals. One such contribution was the change in orientation sug-
gested by Straus and Bacon (1951). It was suggested that there be concentra-
tion on job factors such as hours of work and attitudes rather than individual personality characteristics. Thus:

...working conditions or other factors associated with some occupations may create problems of social or psycho-
logical adjustment for which certain individuals find a pseudo solution in drinking; ...factors associated with
some occupations may intensify problems which might otherwise remain dormant;..." (Straus and Bacon, 1951: 241).

Transitions Within Hierarchical Programming

The period of management-dominated programming for occupational alcoholism was not so rigid that adaptations were not tried, and advances in thinking about the problem were not made (Bannon, 1975; Siegel and Schauf, 1968). Largely under the influence of psychologists, changes occurred. The actions which psychologists took were part of a "humanitarian movement" in the mental health field.

The transition from the "moralistic" era to the "humanistic" represented a primary change in approach. Control was replaced by treatment, and precedent policies were liberalized in the name of "treatment". Written policy, for the most part, continued to be nonexistent, or developed without regard for professional activity.

We felt no need for a formal statement of management policy about alcoholism since we were handling these situations as we would any other health problem (Norris, 1969: 289).

The transitions which occurred in hierarchical programming were based on a belief that early identification of a problem could be important. Unfortunately, only minor structural changes occurred, such as the passing of more control from top to middle management. The determination of whether an individual was selected for treatment, however, remained in the company's interest (Trice and Belasco, 1968).
Other modifications in problem referral routine, treatment setting, and clinical education for workers had few recorded successes. Failures, however, are well documented. There are accounts of both policy and tactical errors.

...Failures to persuade people in obvious trouble that they needed help, failures to persuade them to accept help of A.A., failures to maintain contact once established, and failures to persuade supervisors that there was a better way that worked and that they should ask for help (Norris, 1969: 289).

Ashford (1976: 82) indicates that a major error was made in conceptualizing the problem and the ideologies behind the policy:

The pendulum has swung to the other extreme where the alcoholic was regarded as the unfortunate victim of social and psychological pressures against which he was helpless to struggle over change, with reported episodes of empty promises and drinking relapses as a consequence.

In addition to weak policies, two major errors were reported in tactics of implementing the programs. The first was lack of union support:

It is axiomatic that the company that plans to install a new piece of equipment ignores the union at its peril. The same is true of the company-sponsored alcohol program. Union support at both the policy making level and the action level is an essential prerequisite of any successful attempt to treat the problem in industry (Belasco, Trice and Ritzer, 1969: 13).

The second was lack of a comprehensive program of education:

Any company program depends on the supervisor and even though he sees definite signs of a drinking problem, he may decide against using a staff service and a formal procedure. In other words, personnel and medical officers may strongly support an alcohol program, upper management may provide sound policy and the union may join wholeheartedly in the plan, but if the immediate boss hesitates, the programme will still reach the alcoholic only in his late stage (Trice, 1965: 98).
Although Trice would indicate that the educational gap was within middle management, others would argue that there was a gap within all levels of the organization:

The person who sincerely wants to help sometimes feels that he is regarded as 'moralistic, a killjoy or even a 'square' who is trying to eliminate alcohol entirely (Hemmett, 1972: 15).

2.2 Egalitarian Programming

The most dramatic changes in programming occurring within the last ten years coincided with two phenomena: the increased public awareness of lifestyle effects on health, and the growth of unionism. Several occurrences contributed to these changes.

First, the accident rate within industry increased. North American industry, possibly became sensitized by a number of spectacular disasters within industry, largely in mining, and therefore began to report accidents and injuries more accurately.

Secondly, environmentalists brought to the attention of governments, communities, and industries the potential of industry to affect the health of individuals. The interrelationships between physical environment and both physical and psychological well-being of employees were shown to be related to environmental and organizational characteristics of the workplace.

Thirdly, individuals at all levels of industry were receiving higher education, consequently creating a more vocal labour force. Accompanying this, a decrease in the wage differential between management and union brought lifestyles of management and union closer together. The result was seen in an
increase in social interaction between individuals from all organizational levels, particularly in smaller communities. There was recognition that: "There are problem drinkers and alcoholics at all levels in a business organization" (Habbe, 1973 : 49).

Several studies suggested that management was an ineffective identifier. Studies using non-managerial identifiers have shown a random distribution of alcohol problems across occupational levels (Straus and Bacon, 1951).

Trice (1962) discussed the likelihood of being identified as a deviant drinker by significant others. The likelihood of identification seems to be substantially greater for lower levels of employed in spite of the fact that the existence of problem drinking among higher level occupations was equal to or greater than among lower level occupations.

With the awareness of the "classless nature" of alcohol problems the opportunity was present within industry for shared union and management responsibility which, when effected in policy, emphasized self-responsibility. This appears to be a key to successful alcohol treatment and prevention programming within industry.

2.3 Present Program Content

The advocates of occupational alcohol programs have made bold statements about the success of recent advancements. "The greatest discovery rates, surprisingly, are to be found not in clinics and hospitals but in offices and factories" (Maurer, 1968 : 176). The claims of success do not debate in such areas as referral procedures, education and treatment measures,
the boundaries of systems of care and therapeutic alternatives. The components of the issues in these areas are summarized by Roman and Trice (1967) and are also presented in documentary pamphlets for individual programs (Wrinch, 1974; Rich and Papenbrock, 1976; Presnall, 1975). The most recent literature has focused on three prominent concepts: the Contract, Crisis Theory and Holistic Programming. The major contributions of these three concepts are discussed below:

**The Contract** - The contract allowed for the joint presence of both union and management in the development and implementation of treatment programs. The establishment of a contract between union and management provides clearly defined rules and procedures.

It will be the duty of managers and supervisors to note unsatisfactory work performance (which may or may not be due to alcoholism) and refer such employees to the medical department.

and,

It will be the responsibility of the employee to comply (Hughes, 1971: 91).

The idea of a "contract" has been extended in its application to refer to contracts between union and management, but also between the individual with the problem and the company.

**Crisis Theory** - Crisis Theory, recognized for some time to have value in social psychotherapy, has been applied to the industrial setting. The precipitation of a crisis is frequently seen as a prerequisite to the early identification, treatment, and affective behavioral change (Rapaport, 1967).

A crisis can be a valuable and delicate thing. The alcoholic needs it if he is to change. (Bissell, 1976: 2).

Crisis theory has been adapted to the industrial setting under two commonly
noted program types, "constructive coercion" and "constructive confrontation" (Heyman, 1976).

Holistic Programming - Holistic programs, sometimes called by such names as "employee assistance programs" and "troubled employee programs", integrate occupational alcohol programs into a total occupational health program (Wrinch, 1976). This holistic approach has changed the perspective in which the drinker is seen, and makes a major point that alcohol problems may not have a single cause.

Of course, alcoholism cannot be reduced to a "germ theory" simplicity any more than diabetes, as it does not lend itself to a strict 'medical model' approach any more than does a peptic ulcer..." (Bissell, 1976: 20).

It implies that there is a need for options in approach and available treatment, as well as recognition of service components at the primary, secondary and tertiary levels.

A visible prescription for health, specifically tailored to the individual's needs, strikes home for many people..." (Rickenbacker, 1976: 57).

With holistic programming, there is a more prominent interest in the family than in the individual as a treatment unit. There is also an acknowledgment that a broader range of problems affects work. Industries adopting this type of programming have accepted a greater role in the treatment and preventive health of their employees.

The three concepts which have been described need not be exclusive of each other, although accounts of programs frequently regard them as such. The difference in emphasis given in accounts of these concepts appear to
reflect a variation in focus which may be on (1) type of treatment unit (i.e., individual/family), (2) type of precipitating event considered to be a problem (i.e., drinking, social or economic, and (3) responsibility placed upon the individual (i.e., self responsibility—group or company responsibility).

Although the trend in modern occupational alcohol programming stresses individual responsibility, planning is nevertheless required to ensure that the options are available (Rickenbacker, 1973). This section of the thesis has shown that one factor which may contribute to the effectiveness of planning is representation in the planning structure of as large a population within industry as possible. A second factor which is important to consider along with the composition of planning structure is the conceptualization of the problem.
Chapter Three

CONCEPTUALIZING ALCOHOL USE AND ABUSE

The change in the usage of definitions which describe alcohol abuse within industry has not been as clearly or as frequently described as have changes in planning structure. As mentioned in the preceding section, industrial policies were set by precedent. The written policies when in existence, referred for the most part to "the act of consumption of alcohol" or the "possession of intoxicating spirits" on work premises. Where treatment for alcohol abuse has been included in occupational programs, policies, and the definitions therein were based on professionals' classifications. The involvement of a broader cross section of industry in health matters has increased the awareness of the value of a definitional base. Recently, it has been expressed that definitions of alcohol abuse are inadequate and inappropriate for the work place; that, in fact, definitions which belong to a group of health professionals should only be applied by that group within their treatment context. Although directed toward the same problem, several alternative approaches to problem definition have been suggested. For example, one industrial program manual cites the virtues (for effective identification) in naming as "work problems" what would previously have been called "alcoholism" or an "alcohol problem (Alcan: 1977)

This chapter will show the importance of developing a conceptual perspective when planning a program. Before doing this, a cursory look will be taken at the variation present within general definitions of alcohol abuse.
3.1 Definitions of Alcohol Abuse

The definitions of alcohol abuse vary greatly, both in number and types of concepts contained. There are, however, several which contain common themes.

The World Health Organization definition is possibly the most widely used and broadly conceptualized. It reflects the social, psychological and clinical aspects of the disease. The definition of an "alcoholic" includes:

Those excessive drinkers whose dependence on alcohol has an interference with either bodily or mental health, their inter-personal relations and their smooth social and economic functioning or who show the prodromal signs of such developments (World Health Organization, 1965).

and the category for "alcoholism" is:

...patients whose alcohol intake is great enough to damage their physical health, or their personal or social functioning or which has become a prerequisite for normal functioning (World Health Organization, 1970).

One of the leaders in development of the conceptual framework was Jellinek (1960 : 35) who proposed that

...alcoholism is any use of the alcoholic beverages that causes damage to the individual or society or both.

These three definitions refer primarily to the interaction between the consumption of alcohol and the functioning of an individual. A fourth definition recently developed by the National Council of Alcoholism refers to alcoholism in a more static sense:

Alcoholism is a chronic, progressive and potentially fatal disease. It is characterized by tolerance and physical dependency, pathological organic changes or both, all of which are the direct or indirect consequences of alcohol ingested (National Council of Alcoholism, 1977).
As an alternative to the above definitions, another set of definitions which is based on behavior, predominantly drinker type or drinking style, has been developed.

One of the first classifications of the behavioral definition based on drinker type has been developed by Ferguson (1969). He defines "light drinker" as an individual who consumes amounts of alcohol occasionally; a "moderate drinker" as an individual who consumes up to two litres of beer a day (perhaps with lunch or on weekends, or both) but does not admit to being grossly intoxicated, nor to his drinking being a problem; a "heavy drinker" as an individual who drinks three litres daily, is drunk most of the time at home, has lost time from work thereby, and in his behavior and other ways admits to having a problem.

Trice and Roman (1967) offer a second classification, defining "normal drinking" as drinking which does not undesirably alter behavior or interfere with effective and efficient performance of role assignments or obligations, and does not significantly alter day-to-day functions. The category of "deviant drinking" is defined as drinking behavior which both exceeds the bounds of community definition and impaired role performance. The third category, "alcohol addiction" is psychological loss of controlled drinking behavior.

A multitude of articles distinguish between 'continuous' and 'intermittent' drinking. The literature makes frequent reference to "bout", "binge", "spree", "bender", or "periodic drinking" (Hemmett, 1972). Jellinek's classification of the species of alcoholism referred to this type of drinking as "gamma alcoholism" (Jellinek, 1960).
In relating this continuum of drinking to the industrial setting, "continuous drinkers" are classified as those who drink every day without an intervening period, and "intermittent drinkers" as those who drink but who may have periods of total abstinence. "Mixed drinkers" are those who cannot be classified under either one (Ashley et al, 1976).

3.2 Disease: Clinical and Social System Perspectives

Attention to the development of programmes from a definitional perspective is seldom stressed. Selecting a definition from the multitude which exist is often carelessly done. Although the importance of having a perspective has been demonstrated in recent planning action for alcohol abuse in the workplace, the best explanation for following this course in planning has been presented elsewhere in the literature. Mercer (1973) has dealt with the importance of having a perspective for selection of a definition, in discussions relating to mental retardation. She has suggested that there are two basic perspectives which can be considered when developing a definition of a health problem, namely, the Clinical Disease Perspective and the Social System Perspective. A strong rationale for relating these same two perspectives to a discussion of alcohol abuse is the fact that both social health problems, although they have different etiologies, have etiologies which are often confused and are relative to culture and social milieu. As well, both alcohol abuse and mental retardation are problems which tend to be stigmatized and predefined in society.
The Clinical Disease Perspective

The Clinical Disease Perspective comes out of the clinical practice of medicine, and would therefore apply to most of the definitions of alcohol abuse still in use. This perspective tends to view the problem as a handicapping condition and implies that a well defined set of criteria or diagnoses can be applied.

Current literature relating to occupational alcohol programming and use of definitions of alcohol abuse, has made three major criticisms of definitions within the Clinical perspective. The first criticism deals with the broadness of the definition. Clark (1975: 315) succinctly states that there are conceptual problems with such broad definitions:

The interest of such broad definitions is to call attention of the policy makers to the alcohol related problems that exist in their own population. In a way, the wide acceptance of the broad definitions, such as these, is unstated agreement to call the phenomenon that may be diverse in characteristics, consequences and etiology by the same name.

A second criterion is that definitions within this perspective have a detrimental effect on the "identified" or "labelled" individuals, through definitions within the disease perspective, disregards the individuality of the individual.

Room (1974), when discussing disease labels as "the business of physicians," indicates that labels which have restricted use and which must be applied by an elite group of professionals deny the self responsibility of individuals. It is most frequently assumed in the literature that 'disease' refers to a process or a causal sequence of events ordered by time (Van Dijk, 1973).
Rigid adherence to set sequences and criteria which can only be applied by a small group of professionals limits the extent to which early identification of a problem can be made (Room, 1974).

A final criticism made by non-medical interests attacks the clinical disease perspective as it focuses on the negative rather than the positive. Incapacities are stressed, and emphasis is on "ill health" rather than on the positive approach of "health and well being" (Dafoe and Bassett, 1974).

Social System Perspective

The social system perspective views the problem as an acquired social status and emphasizes that the applied definitions will be relative. This perspective stems mainly from sociological tradition and the study of deviant behavior. Most references in the literature on alcohol abuse which take this perspective, define the problem in behavioral or socio-behavioral terms. The major criticisms of this perspective come from the supporters of the clinical disease perspective. What are seen as criticisms by one group are viewed as advantages by the other. Clark (1975), one of the major proponents of this approach, indicates that the advantages of the social system perspective in practical terms are that:

(a) it suggests new relationships to the general population;
(b) it discards the idea that the individual must change completely in treatment;
(c) it implies a range of behavior of a flexible group of standards of appropriate behavior;
(d) there is increased potential for recognition as the etiology is not tied to a distinct time frame;

(e) more consideration can be given to environmental and cultural factors affecting behavior.

Clark argues that this perspective allows effects of a problem to be seen on individual, family, community, and its resources. It is more descriptive of the type of resources that are required.

Edwards (1973) suggests that it allows for earlier identification of the problem and can therefore provide a basis for effective prevention.

3.3 Discussion of Perspective Differences

Although, for illustrative purposes, the perspectives have been shown as opposites in this presentation, they are not mutually exclusive and, in some cases, can be considered interactive. The clinical disease and social system perspectives do not relate exclusively to either disease or behavior (Mercer, 1973). As both disease and behavior may be considered in each perspective, the major difference, therefore, is in the application of the concepts.

To understand these differences it is necessary to briefly relate to the concept of labelling. In theoretical terms, Gove (1975) has distinguished between the use of a label as a dependent and an independent variable. In the independent use of the definition or label the question "Why?" is asked, or an understanding of the relationship is sought. In the dependent use (the traditional interpretation given to labelling theory) the use of the definition of labels is itself an explanation.
The definitions of alcohol abuse have mainly been promulgated by several professional groups. Society has tended to accept labels used by professionals as fact and applied them in a dependent way. This use of labels has resulted in the loss of the label's original intent.

Clinical professionals, researchers and educators select different concepts for different reasons. Chin and Benne (1976) acknowledge this and suggest that concepts are selected with a political intent. They see definitions and concepts as part of an "early educational strategy selected by a particular profession to influence change" (Chin and Benne, 1976 : 22). The change which is sought may be increased control.

Clinical professionals are frequently accused of over-jargonizing their work. In fact, the development of a "professional dictionary" restricts access of other professional groups to information; in some cases, this limits access to treatment of a problem. Unique definitions make criticism or evaluation of a program by outside individuals difficult (Clark, 1975).

Researchers have created operational definitions for research purposes. Unfortunately, the original context of these definitions is often lost when applied in other research situations or clinical settings. For example, definitions used in epidemiological research may be confused with micro definitions used in clinical evaluation (Hore, 1973). Frequently, definitions developed for research are applied for treatment purposes without adequate evaluation of the consequences of use of definition.

In treatment and educational settings the use of a label is important and the careful placement of the label therefore becomes an ethical concern.
Two arguments for the careful placement of a label are advanced. The first contends that the use of labels may subsequently affect an individual's behavior. Robinson (1976) believes there is a major danger in both creating and reinforcing labelled behavior. The second asserts that there is a limited context in which a label can be applied. Robins (1975) indicates that it is not the quality of the act which requires understanding, but rather the understanding of the relationship between the person committing the act, or the "identified," and the "identifier."

The perspectives which have been discussed utilize different approaches to labelling. When an understanding of the relationship between labeller and labelee is sought, an independent use of the labelling process is required. Again, this point is stressed in the following statement relating specifically to alcohol research:

...conceptualization is looked on as a means—not an end. In some ways conceptualization for the field alcohol studies may be serendipitous; it may allow for improvement, even innovative understanding for psychology, for public finance, for the art of medicine, for genetics, or for law enforcement (Bacon, 1976: 130).

In selecting a definition it is important to recognize the effects of the definition on key factors in change—process, structure and outcome.
Chapter Four

THE IDENTIFICATION PROCESS

The "Identification Process" of alcohol problems within industry has been given several interpretations in the literature. The word "identification" is frequently used synonymously with "recognition." Webster's Third New International Dictionary defines "identification" as "an act or the action of identifying or the state of being identified"; and "recognition" as "the action or recognition or the state of being recognized." Where the root "identify" refers to "to regard as identical, to link, to associate as united" (i.e., to classify) and "recognize" is "to acknowledge formally, to admit as being of a particular state" (i.e., individual labelling). Although the differences are slight, the root "identify" was chosen for this study as it implied a more active orientation towards classification which is a stage on the way to problem definition and management than did "recognition" and therefore had greater application to an organizational and system framework.

To encompass the broad study of identification of a problem such as alcohol abuse within industry, it seems appropriate to regard "identification" as "process."

Process implies a series of events leading to an end. Following the precedent in the distinction made between "recognition" and "identification", a process of three stages will be the basis for the discussion in this chapter. The stages are conceived to be:
Stage 1 - Recognition/observation of the behavior
Stage 2 - Identification/classification
Stage 3 - Action-Decision/reclassification

This conceptualization of process, unlike many, takes into account the fact that different classifications of the problem may exist within different subsystems of a more complex social system. In fact these differences may be necessary for effective identification. The important factors operating, and a distinction of the type of activity at each of the three stages of the "identification process" will be developed in the following paragraphs.

4.1 Recognition/Observation

Recognition is logically the first stage of the identification process. At this stage, one individual (the identifier) observes and discriminates between one individual's behavior (the identified) and a group's behavior and/or his own (normal behavior). Implied in this concept of recognition is the interaction (at least one-way verbal or non-verbal interaction) between two individuals.

Trice and Roman (1972 : 165) have described a sequence of four stages, which they present as paradigms relating to the identification of alcohol abuse within the workplace. The first two paradigms of this sequence correspond to Stage 1 of the "identification process" or recognition. The paradigms which are "disrupted-but-normal" and "blocked awareness" are summarized as follows:
Disrupted-but-normal: a period during which intermittent disruption of job performance occurs. Although these behaviors deviate from expectations, they are neither frequent nor disruptive enough to indicate "abnormality."

Blocked awareness: "significant others" link the employee's behavior to alcohol abuse, but recognition of the existence of a drinking problem strikes numerous barriers. The employee remains "normal" because of a block in recognition.

An examination of these two paradigms suggests several important factors operating at the "recognition" stage. Although Trice and Roman use recognition in their paradigm to refer to organizational recognition, factors of both internal (i.e., organizational) and external (i.e., social and cultural) environment affect the presentation of the problem. Firstly, they may affect the behavior of an identified individual—an individual may act out in different ways in different settings. Second, within the workplace, environmental factors such as company policy may influence the interaction between the identifier and the identified and, consequently, observance of an alcohol related incident (Presnall, 1970). As phrased in the literature: "Organizational policy contributes to hiddenness" (The Lancet, 1971: 305). With the understanding that recognition may vary with the situation, Heyman (1976) indicates that problems which are hidden in one environment can be manifest in another environment.

4.2 Identification/Classification

The second stage of the identification process, Identification/Classification or applying a label, implies the making of a decision. This decision making may for numerous reasons be delayed or never completed. Trice and
Roman's third paradigm, the "see-saw", shows the deliberation and anxiety associated with making a decision:

**See-saw:** As the impairment of job behaviour increases, a significant other becomes indecisive about whether to define the behaviour as a deviant drinking problem or to leave it within the "normal" zone (Trice and Roman, 1972 : 165)

Labelling implies the fitting of another's behavior into one's own classification system. Blane (1976) has discussed the effect of an individual's belief or value system on the selection of a label. The framework for observing behavior at this stage will be based on personal beliefs and impressions of normality. A second factor determining the selection of a label is the knowledge, skill or personal ability to sort out the facts. If a problem has a distinct etiological sequence, (i.e., if a prealcoholic personality exists), knowledge of this fact will contribute to more effective labelling (Robins, 1975). The literature suggests that different skills are required within different systems. Maxwell (1960) indicates that even though many of the signs in early and middle stages of alcoholism are 'off-the-job signs', 'on-the-job signs' could often be plentiful. Maxwell looks primarily at on-the-job signs. He has developed a list of the first five signs (cues) to an alcohol problem in industry and, through a scaling analysis, has shown the relationship of these signs (cues) to each other.
4.3  Action-Decision/Reclassification for Action

This third stage of the process of identification implies a movement from an 'individual identifier system' into a larger system, perhaps an 'industrial treatment system'. The identification process, within the context in which it was defined, is complete when some change has been promoted. In most instances a change in classification is necessary for movement from the second to third stage to occur. This change is suggestive of the fact that a label is not the end in itself, but the means to an end.

At this stage, however, a number of action options may be open. The individual may choose not to identify the problem further within the organization; he may take a purposeful action (such as inform supervisor), he may discuss the behavior with the identified, or he may in an unpurposeful way gossip or discuss the problem with friends. Several major factors which will affect the movement into this third stage have been discussed in the literature. Graham (1974) stated that for the successful identification of a problem an openness to other value systems is necessary. A rigid value base may prevent the acceptance of available problem labels and consequent action alternatives.

There is no reason to limit the effects of a given situation or behavioral pattern to the development of one disease and one only (Graham, 1974: 1046).

The effective transition from the second to third stage of the identification process may also be affected by the degree of similarity between the classification in second and third stage. Robins (1975), in her examination of the labelling of alcohol problems, indicates that there is a greater tendency to
prelabel alcohol problems than other social problems; however, at the same
time she suggests that there is more accuracy with prelabelled alcohol problems
than with other problems. This suggests that early identification or identification
by the individual at stage two may have high accuracy and should be accom­
modated at stage three. The reclassification at stage three in this case may
serve the purpose of reducing stigma, or acceptance of the abnormality and the
fact that it may be treated. In Trice and Roman's final paradigm there is an
implication that the decision to recognize implies acceptance of the deviance.

Decision to recognize: The accumulation of deviance finally
tips indecision toward recognizing the behavior as abnormal.
The appropriateness of referral to some treatment facility is
recognized (Trice and Roman, 1965 : 165).

Two factors which will affect acceptance of this deviance and the
movement to the third stage are suggested by Blane. He states that two
factors which ultimately affect the beliefs about a problem and consequent
problem identification are, (1) the individual's susceptibility to the impact of
the problem, and (2) the efficacy and practicality of the proposed action
(Blane, 1976). The literature did not discuss what the motivational factors
affecting the willingness to reclassify for a final action were.

In summary, within a social system perspective the acceptance of a
behavior as a deviant or abnormal behavior must occur at an identifier
level and at an organizational treatment program level. Only when the
problem has been defined at these two levels is the identification process
complete.
4.4 An Effective Identification Process

The constructs which have been developed to this point through a review of the literature have all contributed to the understanding of factors contributing to an effective identification process. Before discussing the relationship of these concepts to each other it is necessary to first define "effective." For this thesis, effective identification is considered to be early identification. Early identification of the problem, before extensive rehabilitation is required minimizes treatment time, and resources required for treatment, as well as personal costs to the individual and society.

The historical review of program planning reported the relevance of structure to outcome. This is schematically shown in Figure 4.1, which shows, as developed in Chapter II, that structure is a determining factor on outcome. It would be expected that the largest proportion of problems would be identified from cues at work; however, some of the cues to identification may be present only in the community. The figure compares a hierarchical structured program with an egalitarian (participative or contractual program).

In the hierarchical structure there is a one-way identification or labelling based primarily on preconceived notions of what the problem is. In this case limited effects (identification) of the problem would be determined. Only the most blatant problems are labeled. Management is in the identifier role and, therefore, the number of individuals who have potential for identifying the problem is small.
Figure 4.1: Schemata illustrating differences in Process and Effects of Hierarchical and Egalitarian Structured Programs.
In contrast, the egalitarian approach allows for a more open approach. The identification process need not be confined to a particular organizational level. Self responsibility is stressed and, as well, an educational component is incorporated into programs to promote the development of awareness of the consequences of abuse. Prerequisites for the successful functioning of an egalitarian structure are the development of skills, and purposeful observation.

The three stages of the identification process are not fully depicted in the schemata. The schemata, however, suggest that there are marked differences in the labelling within each structure. In the hierarchical structure, there is vertical identification, where in most cases a single individual or small group identify the problem. Identification is based on a single set of values which have traditionally been orientated to organizational and production concerns. There is consequently blocking of the "identification process".

In the egalitarian structure there is greater emphasis on participation in the treatment and identification process (for example, joint union and management participation). Although the schemata expresses the ideal, the labelling in the egalitarian structure is more likely to be a means to an end rather than the end itself. Individual labels which are part of an individual's values and beliefs (as depicted by the progressive development of boxes in the schemata) are incorporated into the final program. The hierarchical structure builds on individual beliefs and opinions.

The outcome, as presented in the schemata, is the presentation of the individual for treatment. The effectiveness of any identification process
and treatment program can only be measured against the effects which un-
identified alcohol abuse within industry has on the organization and the
lives of the individuals involved.
Chapter Five

THE MEASUREMENT OF EFFECTS OF ALCOHOL ABUSE

5.1 National, Provincial and Regional Incidence

Literature and reports provide estimates of the alcohol problem; however, in interpreting these estimates there is a problem of standardization. In the literature related to the occupational alcohol problem, national estimates are frequently the basis for program development. Estimates from this literature include such statements as:

For the United States

It is conservatively estimated that there are at least 6½ million alcoholics... (Von Wiegand, 1972: 181).

Elsewhere there are reports that nine million Americans are chronic alcoholics (Peterson, 1972: 493).

Alcoholism accounts for 40 percent of all admissions to state mental hospitals (Peterson, 1972: 493).

In Canada

50 percent of all road accidents and deaths involve alcohol, 40 percent of admissions to general hospitals are where alcohol abuse is a secondary cause (Smith, 1974: 24).

...25 percent of reported suicides and half of all traffic fatalities and arrests involve alcohol (Bannon, 1975: 419).

Provincial statistics in British Columbia between 1961 and 1971 report

...alcohol consumption increased 30 percent, the number of alcoholics rose by 85 percent and the rate of alcoholism per 100,000 population went up by 51 percent (Sinclair, 1972: 11).
These examples illustrate the variation of type and basis for estimates both within and between national, provincial and regional levels. Descriptive measures are almost nonexistent at regional planning levels. Most frequently mortality and morbidity rates are used to back up demand for services in any area rather than an analysis of supply factors such as amount of alcohol consumption. Often such factors as time of reporting and population changes are not given; therefore, comparability and evaluation of differences in findings as reported in the literature are difficult.

5.2 Industrial Estimates

The estimates for industry have the same comparability problems as those for national or provincial populations. As well, alcohol problem estimates specifically related to industry are particularly unreliable because they are not broken down by type of organization (i.e., industry, business or service agency). Estimates relating to industry and occupations such as the following appear:

In the United States, it is estimated that

Of over 58 million in business, industry and government, 5.3% or 3,097,000 people in the working population are probably alcoholics (Carding, 1969 : 20).

In England and Wales:

Some 13.5% of alcoholics are employable or retired (Murray, 1974 : 23).

In New York City it was estimated that

85% of all alcoholics do appear to lead normal lives, and...75 percent hold jobs (Fisher, 1971 : 15).
In Wisconsin it was reported that

Employers know that three percent to six percent of their work force is undoubtedly at some stage of alcoholism, and a large number of these people have worked for a single employer for 15 years or more and possess much needed skills (Millsap, 1972: 121).

In Canada, the Addiction Research Foundation of Ontario has estimated that

Contrary to the widely held assumption that alcoholism is confined to the seamier layers of society outside the orderly world of work, research findings indicated that at least 50 percent of alcoholics are holding down jobs (Sinclair, 1972: 11).

At a Vancouver conference on drugs and alcohol sponsored by the Worker's Compensation Board of British Columbia, the variation in rates of measures of alcoholism between companies was pointed out. Some of the variation appeared to result from differences in recording of the problem. The rates of sickness and absenteeism in alcoholics were reported to be 2.5 times greater in North America than in most European countries. At this same conference it was shown that reported rates of alcoholic population in industry can vary between three percent and twelve percent of the total population (Kenyon, 1974).

Among the estimates there are few if any operational definitions of cost. Most literature fails to distinguish between individual and social cost. Estimates of cost therefore describe everything from the effect on an individual worker's health to the production loss and treatment program outlay.
5.3 Estimating Cost

Because of the absence of present estimates of cost, proposals for improvements in the development of cost estimates have been suggested at the conceptual level. As well, several reliable studies on costs have given impetus to industry’s introduction of programs for the treatment and prevention of alcohol problems.

One particular conceptual breakdown of cost was presented by Trice and Roman (1972: 2), who categorized three types of costs: (1) cost stemming from analysis of work behavior, (2) costs of deviant drinking to other employees, and (3) cost of "doing something about” the deviant drinker once tolerance levels are reached.

Within the community indirect and direct costs were reported to relate to three levels: (1) cost to the industry, (2) cost to the family network and related members, and (3) cost to the general community through lifestyle. The most detailed categorization of direct and indirect cost, relating to occupational health in general, has been prepared by the long-term planning branch of the Federal Government. This report states that:

Direct costs may be related to prevention, such as expenditure for workplace health and safety, maintenance and upkeep programs, environmental control, safety and first-aid training programs, pay incentives and changes in the organization to reduce occupational hazards. Other direct cost relates to Worker's Compensation premiums, payroll, and fringe benefits to work-disabled employees, medical service payments, costs of recruiting and training of replacements, and other direct medical costs. Additional costs are incurred through capital equipment and goods damaged in industrial
accidents, and the work interruptions associated with those accidents.

and indirect costs:

Indirect costs may be as large or larger but probably elude accurate economic calculation. Individuals and families may suffer considerable income loss and diminution of economic security (Report of Interdepartmental Steering Committee on Occupational Health, 1977: 12).

5.4 Direct Costs

The research on direct cost within industry resulting from problem drinking is not extensive, but is varied. There is, however, major agreement as to what the major costs are. Absenteeism is the most predominant cost reported in the literature. Work performance inefficiency is the second most frequently reported. Others which may be included in the above two classifications, but which are frequently singled out, are erratic work performance, poor judgment, lateness, early departure, customer dissatisfaction, loss of contact (Henderson and Bacon, 1953). Accidents are often reported, although there is some disagreement as to their actual cost effect (Smith, 1974). The time required to deal with a worker with a hangover, or intervention in fights, is also reported (Henderson and Bacon, 1953).

Absenteism - Absenteism has been conceptualized in three ways: absenteeism from work, lateness, and partial absenteeism. Partial absenteeism refers to an individual at work who fails to produce (Trice and Roman, 1972). There are difficulties in developing cost estimates of absenteeism because the effect of the various types of absenteeism differs. Absenteeism that is predictable should probably be weighted less than absenteeism which is erratic.
The estimates of absenteeism differ as do other estimates of the problem.

In the British Columbia Telephone Company an alcoholic employee is statistically known to average 20-25 days absence annually for alcoholism alone; and to have an above average number of absences for other illnesses (Sinclair, 1972: 11).

In Toronto, the transit Commission estimates costs to be as high as "25 percent of the annual wages of each problem employee (Labour Gazette, 1876: 3).

**Accidents** - As mentioned above, work accidents although frequently discussed may not be causally related to alcohol use. Roberts and Russo (1955) after fifteen years' study in a company of 1800 employees, reported that only one accident examined in their industrial clinic could be directly or indirectly attributed to drinking.

Trice (1962: 493) suggested that high accident rates are common among drinkers but only in the early stages of deviant drinking.

While popular belief holds that alcoholics are accident prone, recent evidence demonstrates that blue collar alcoholics have few on the job accidents though off the job accidents do sharply increase.

Although Trice and Roman (1972) have admitted that it is logical to expect deviant drinkers to have more accidents than other workers as coordination, timing, emotional response, and sense of danger are impaired, there is, however, no evidence to support this logical assumption. A study of Alcoholics Anonymous members exposed to potential situations for accidents showed this
group to have a lower rate.

In 1965 Trice, in a study comparing non-alcoholics with labelled alcoholics, found that although alcoholics tended to be in accident-prone jobs, they reported a lower rate of accidents. Covering up by other individuals is a possible explanation of these surprising results.

Mulford and Miller (1964) suggested that reasons for reduction of accidents are: (1) the extra caution which is exercised reduces the quantity of work but prevents accidents; (2) absenteeism is more likely to occur among drinkers thus reducing the risk of accidents; and (3) alcoholics have routine work habits which compensate for the effect of alcohol. Straus (1971) has added to these reasons by suggesting that alcohol consumed in small amounts has a steadying effect on some individuals during work hours. Although direct costs resulting from accidents may not be as high as expected, fear of accidents and of being detected through work appears to alter work patterns and is subsequently realized in more indirect costs.

5.5 Indirect Costs

The indirect costs associated with work, although frequently described, have received little research attention. Low morale and turnover are mentioned most often.

Low Morale - Schramm (1977) reported that low morale resulting from or associated with a problem drinker on the job is a major indirect cost. Roman and Trice (1967) have described a normalization process which contributes to this indirect cost. Normalization occurs when alcoholic patterns of behavior
are taken in and accumulated by other members of the organization. Other costs which have a similar indirect association with a drinker are overtime payments necessary because of slowed production, and costs of retraining should a problem drinker leave employment (Hawker, 1973; Kelley, 1969; Fisher, 1971).

**Turnover** - The literature debates whether alcohol contributes to turnover and is a consequent cost to industry. Turnover is one of the effects which may be described as long term. The impact of turnover on a company is considerably delayed. Although actual studies of turnover are few, one study in Britain reported that of 300 individuals receiving assistance from an information center for alcoholism, 24.1 percent lost their jobs through alcohol (Murray, 1974).

Trice (1962) has reported that turnover is greater among individuals in lower organizational levels. These individuals are younger and, at the same time, their commitment to organization may not be as great as at higher levels.

Turnover rates may not show the effects of actual consumption or abuse, because of the strong relationship which turnover has with lifestyle and type of industry. As well, the association which drinking style has to an individual's drinking career is uncertain (Hughes, 1969).

A group of reported costs, even more indirect, are associated with family or community lifestyle. These costs have a long term effect and may develop insidiously over a period of time. Although frequently not considered by employers in the western world, because of an ideological concern that industry should not interfere with an individual's life outside of industry,
many family crises associated with alcohol have a strong interrelationship to the industrial life of the employee.

It was pointed out that as high as 17 percent of all alcohol problems are family centered (Peterson, 1972). A high proportion of these problems would also be felt within industry. Peterson, reporting an industrial centre treatment program which provided service to the whole family, stated that over a 20-month period, of 2,407 persons soliciting help, 1,053 were employees, and 1,180 were dependents placed on programs designed to help.

5.6 Standardized Measurement and Cost Calculation of the Problem in Industry

The incremental planning approach, which has been evident in the variations of program structure and conceptualizations of the problem, is also clearly reflected in estimates of the problem on which programs are based. In these measures there is a strong influence of individual industries' concerns and personal values.

Deciding what constitutes a desirable change requires value judgments as to the definitions of unacceptable behavior, and often only arbitrary measures of success can be assigned because tangible outcomes are difficult to identify (Schramm, 1977: 50).

Individual industry's need, justifiably, should be accounted for and reflected in program costs and measurement. Unfortunately what is often reflected is a weak methodology for calculation of cost, inadequate reporting and record keeping within industry and, in many cases, the reliance on secondary data which are available only through annual reports of treatment.
agencies outside of industry. Few techniques have been developed which
demonstrate the importance of cost estimates in assessing marginal cost and
cost benefits. In addition, the measures which do exist are often based on
supply and demand and, therefore, consider only quantity and not quality as­
psects of cost. An attempt to deal with these issues is seen in the prominent
study conducted by Winslow et al (1966) which related cost of alcohol consump­
tion to industry. This group's method for translating behavioral output into
cost made an important contribution to the measurement of effect. A second
contribution was that the observation of behaviour within a more total system
framework was important. Winslow's research team developed cost accounting
in four areas: (1) cost of impaired productivity, (2) cost of interpersonal friction,
(3) cost of absenteeism, and (4) cost of health and accident problems. 1

With standardized measures and cost calculations such as those suggested
by Winslow's group, differences within and between industrial programs will

1 To develop cost of "impaired production," supervisors rated productivity as
"percent potential utilized." The "percent potential utilized" was subtracted
from 100 and the remainder was multiplied by the annual salary. The result re­
presented economic loss to the company.

To calculate "cost of interpersonal friction," administrative personnel esti­
mated grievance procedures, disciplinary action and garnishment procedures.
"An estimated clerical and administrative working time was developed from the
cost calculated by the amount of time involved in friction for each person by
his daily wage rate."

Cost of "absences" was calculated by multiplying the daily wage rate by
the number of days absent without pay (cost for the individual employee).

Cost of "accidents" was estimated by processing of compensation and hospital,
medical and surgical benefit claims. Costs were calculated on estimates of
(1) numbers of clerical and administrative personnel involved, and (2) the amount
of time occupied when assigned to a particular task, along with (3) estimates of
time and number of medical visits per year and employee time away from work
for attending visits.
become more apparent. Standardized measures with the potential for cost comparison, may provide us with greater understanding of the problem itself. At present, we can only speculate and theorize from our knowledge of behavioral research, that such factors as lifestyle, culture, ethnic background and community will have an effect on the presentation of the problem and the effectiveness with which the problem may be treated in a certain community.
Chapter Six

FACTORS UNIQUE TO NORTHERN COMMUNITIES

The literature which was reviewed focused primarily on large industries, most frequently related to the American experience. Virtually none of the literature on alcohol abuse relates to the resource industries, particularly those of Northern Canada. The unique characteristics of resource communities of Northern Canada which have been detailed in sociological analyses of these communities, are important when relating the occupational alcohol literature, and to the proposed study.

Three unique differences between northern industrial communities and those which have been reported should be considered when making comparisons to the literature on alcohol abuse. These are: (1) community structure, (2) treatment and service resources, and (3) socio-cultural factors determining family structure and lifestyle in northern communities.

6.1 Community Structure

Northern communities, by definitions based on population density or census figures, could be classified as rural. There are, however, features which give them urban qualities. The major urban quality in question is "the freedom of choice (Park, 1952: 86). Most of the individuals have moved to this region by choice, and many would say that they have no unmet needs (Lucas, 1971).
The communities of the north are, for the most part, "industry dominated and dependent." They are predominantly single-industry communities as opposed to "mixed industry" or "business" communities. When two or more industries are located within a community, generally one industry has major control of the development of regional resources. Other industries often provide service functions to the major industry (Laskin, 1966).

Opportunities for involvement in community government, even though it may be separate from industry control, are largely influenced by the dominant industry. As the population of the northern resource communities are generally fairly young, and as there is no hierarchical power structure based on a family mosaic, there is opportunity to try out political skills. In most cases, however, there has been a noted absence of interest in community government due to both the temporary commitment made by individuals to the communities, and to company control.

They know that their situation is bounded by bureaucracy and a precise division of labour which in turn depends on a complex national and international division of labour. They know that their future depends on impersonal forces outside of their community such as head office decisions, government policies, and international trading agreements (Lucas, 1971: 20).

A discussion of the power structure of the north would be incomplete without mention of a specific group—the Native Canadian. The Native has been and is presently the most distinctive group associated with the north. In the area where this study was conducted the proportion of Native Canadians to the entire population is the largest of any region in the province of British Columbia. Table 6.1 shows the proportions of various ethnic groups in the
Table 6.1
ESTIMATED PROPORTIONS OF ETHNIC GROUPINGS FOR KITIMAT-STIKINE REGIONAL DISTRICT BASED ON 1976 MINI CENSUS

<table>
<thead>
<tr>
<th>Ethnic Grouping</th>
<th>% of Total Population</th>
<th>Range in % of Total Population in Major Communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>British</td>
<td>40.9</td>
<td>6.1 - 47.6</td>
</tr>
<tr>
<td>French</td>
<td>6.5</td>
<td>0.1 - 9.5</td>
</tr>
<tr>
<td>Asiatic</td>
<td>1.2</td>
<td>0.0 - 1.5</td>
</tr>
<tr>
<td>Australian</td>
<td>0.7</td>
<td>0.0 - 1.7</td>
</tr>
<tr>
<td>German</td>
<td>9.8</td>
<td>0.0 - 18.6</td>
</tr>
<tr>
<td>Italian</td>
<td>1.8</td>
<td>0.0 - 3.3</td>
</tr>
<tr>
<td>Jewish</td>
<td>1.1</td>
<td>0.0 - 0.3</td>
</tr>
<tr>
<td>Native Indian</td>
<td>17.1</td>
<td>1.5 - 92.4</td>
</tr>
<tr>
<td>Netherlands</td>
<td>3.8</td>
<td>0.0 - 6.0</td>
</tr>
<tr>
<td>Russian</td>
<td>0.4</td>
<td>0.0 - 1.3</td>
</tr>
<tr>
<td>Scandinavian</td>
<td>4.4</td>
<td>0.0 - 6.8</td>
</tr>
<tr>
<td>Ukranian</td>
<td>2.5</td>
<td>0.0 - 3.1</td>
</tr>
<tr>
<td>Polish/Hungarian</td>
<td>2.2</td>
<td>0.1 - 3.5</td>
</tr>
<tr>
<td>Other (i.e., Portuguese, Spanish, Greek)</td>
<td>8.3</td>
<td>0.0 - 13.8</td>
</tr>
<tr>
<td></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>
population of the region where the study was conducted. In many northern communities there have been degrees of integration of the Native with other northern groups (Hawethorn, 1967). In some communities, however, the population remains predominantly Native. The Berger Report (1977) of life in the far north reflects:

Throughout Canada, we have assumed that the advance of western civilization would lead the Native people to join the mainstream of Canadian life.

According to Berger this assumption is ill-founded. Although Parliament has exclusive legislative jurisdiction in relation to the Native people of Canada,

...the British North America Act does not prescribe any legislative arrangements for them. There is nothing in the constitution that would preclude the kind of settlement the Native people of the north are seeking (Berger, 1977: 166).

At present, there is a reawakening of land claim issues in the north. Strengthened Native organizations for aboriginal rights have challenged the control of resources and the authority of industry and government.

Within the last five years increased tensions between groups of the north have frequently been reported in the press. The settling of disagreements and the power structure in northern communities are unresolved.

6.2 Treatment and Service Resources

Where several industrial communities exist within a region one community generally assumes a major distributive function. Major health and social service resources and facilities are generally centralized in such a community (Lucas, 1971). Consequently, there may be an uneven distribution of resources
throughout the region. Depending on such factors as population of the region, proportion of regional population to provincial population, and distance from the capital city of the province, a full range of services may or may not be available. With regard to health services, there has been considerable influence by lobbying groups with strong leadership, and health professionals on the ways services and resources are distributed. There has been no single agency responsible for planning of health services and programs except, perhaps, the Department of National Health and Welfare, with regard to services for Native Indians. Frequently, specialized services are not available within the region. This is particularly evident in the absence of a comprehensive mental health service system and alcohol treatment centre. With regard to the latter, virtually no intensive treatment resources—detoxification, rehabilitation or educational—are available within the region covered by the study, although beginnings of the development of a referral network have been made.

When services are not available, access to the 'outside' is important. Transportation and communication patterns generally are centralized in the major distribution centre. In many of the communities, transportation and communication play a central role in access to and use made of alcohol. As well, where resources are limited, it is often necessary to rely on neighbours or volunteers. This reliance on volunteers is perhaps greater in the north than in other areas:

Voluntary associations are seen to play an integral role in the development of programs necessary to keep pace with the development and changing life style in a developing region (Myers, 1976: IX-10).
Unfortunately this is not always recognized, and volunteer resources are poorly
developed.

If voluntary action is to be an effective force in dealing with the economic and social factors in the N.W.
region, a support system must be built around the leadership which now exists in that region (Moore,
1975: 47).

Professional turnover is a problem in these communities. The length of
time which professionals spend in such communities often does not give them
time to adapt to the community. They may move to the region having had
their professional education outside of the region. The techniques which they
have learned outside the region are not always suited to serving the people of
the north. People who are more established in the region are often alienated
from the service providers (Knott, 1976). In addition, it has been stated that
professionals often maintain their primary associations outside of the community
and contribute little to community life (Magill, 1964).

6.3 Sociocultural Factors and Drinking Style

A number of sociocultural factors, unique to the north, can possibly be
related to drinking style. The first of these is the isolated nuclear family. The
absence of extended family members for support is prominent in newly created
northern communities. In many instances, grouping of "new lifestyle persons"
and "mixed immigrant" groupings have replaced the so-called traditional North
American family. In a previous study the configurations of families involved
in "family disturbances" was noted to vary with community. It was argued by
professionals in the region, although they did not all apply the same label to
the problem, that the type of family unit set a pattern for drinking (Myers, 1977). The type of family unit was frequently regarded by professionals to be a predictor of the consumption noted in individual communities and the presentation of problems associated with alcohol use through a northern area.

A second sociocultural factor to be considered in discussion of drinking style is form of entertainment. Recreational and social activities are often very numerous but the choice of activities, and the way in which activities may be programmed in smaller communities, often contribute to feelings of "inferior lifestyle." The pressures are great to conform to a lifestyle within northern communities because of the visibility of individuals (Merton, 1958). The community norms set a drinking style. As one citizen of a smaller community noted:

> We do not have alcoholics as such. Our problem is that we are "binge drinkers"...we do not drink alone. When there is booze in town we all drink until there is no more (Myers, 1976 : IV-11).

This style of drinking has been referred to earlier as "intermittent drinking" and is a consistent description of other accounts. Drinking was reported to be, in many cases, the primary source of entertainment. This type of drinking is particularly apparent in work camps and isolated villages. Drinking appears to take the form it does in some areas because of the access to supply of alcohol and types of controls. In parts of the region which was studied, the supply of alcohol was dependent on weather conditions. In other communities of the north, access to alcohol was reported to be dependent on what could be produced at home. Regardless of source, reports of the "release," on a community-wide basis, when access to alcohol was available, are frequent (Myers, 1976).
Alcohol supply procedures are, in themselves, a third factor contributing to drinking style. The absence of approved sources of alcohol, a form of prohibition, operates in many work camps and Indian villages through policy established either by employer, the provincial government agency responsible for liquor control in a region, or a Band Council.

A fourth factor, isolation, which is a part of northern life, contributes in other ways to drinking style. Even though isolation is sought by some people who move north, it is often an emotionally unsettling experience for others. It has been reported, for example, to be a contributor to population turnover. Social isolation is often produced by a rejection of the norms of the community. Withdrawal from community activities can be a mechanism widely used by individuals who initially fail to find compatible interests in a community. Where ethnic composition of a community is diverse, both "actual" and "felt" social isolation can be expected to be greater. These aspects of social isolation are known to contribute to one's dependence on alcohol and other drugs.

A further factor affecting lifestyle and drinking pattern in northern areas, and which is interrelated with type of family unit, form of recreation and a contributor to loneliness and isolation, is the ethnic and cultural composition of a community. The actual mix of ethnic groups existing in communities is often influenced by recruiting policies of the Company (Lucas, 1971). As a result of these policies, the north has distinct ethnic groupings in different communities, although with time and mobility these pockets of a particular ethnic group are becoming less obvious. New immigrant groups react to their
new homes in different ways. These groups integrate to varying degrees, de­
pending on the actual mixture of other ethnic groupings present, as well as
opportunities available for community interaction through recreational facilities.
Empirical studies of the relationship of amounts and patterns of drinking in
various cultures are numerous (Robinson, 1976). There are frequent discussions
of how ethnic mores and morals are associated with alcohol intake.

Very clearly there are great differences in drinking
practices among cultures as diverse as those of

Although quantity of drinking is reported most frequently to be depend­
ent on ethnic grouping, it is important to note that culturally determined factors
operate in the definition of what constitutes a problem. Murphree (1976) indi­
cates that among cultures there are differences in who decides what constitutes
a problem and when a given person has a problem.

To generalize about drinking style and to postulate on the drinking
problem on the basis of knowledge of the presence of any single contributing
factor would be difficult. The basis for professionals' and popular public
opinion that the drinking problem in the north is greater than in other areas
would seem to be comprehended only by understanding the composite of variables
which are operating (Myers, 1977).
Chapter Seven

RESEARCH MODEL

For conceptual clarity the variables were combined into a research model, (although it was recognized that cause and effect relationships would not be examined). The principal variables, and an indication of their treatment in the study, are presented in Figure 7.1 on the following page.

7.1 Scope of the Model

Two levels, which correspond to stages two and three of "The Identification Process" were included in this study (see Chapter Four). Stage two, the stage of 'identification and labelling' will be referred to in the present study as 'First level identification' and Stage three, the stage of 'Action-Decision' will be referred to as "Second level identification." The operationalized variables for each level will be referred to as 'Specificity of definition' and 'Directness of action taken' respectively. Figure 7.2 shows the primary relationships which were explored in the study, broken down into appropriate level.
### Explanatory Variables

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Intervening Variables</th>
<th>Control for:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong> Level of employment in the organization (L)</td>
<td>Personal characteristics</td>
<td></td>
</tr>
<tr>
<td><strong>2.</strong> Community-Industry Size (S)</td>
<td>1. Age (AG)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Education (E)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Length of time in north (LT)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Interaction Variables</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Distance (DB)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- between identifier and identified</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Language spoken (L)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Place of identification (P)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Ignore:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Job Characteristics</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Work Group variation (WV)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Work Conditions (C)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Work Group Size (WS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Knowledge of Industry's Alcohol Policy (KP)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Time in Company (T)</td>
<td></td>
</tr>
</tbody>
</table>

### Dependent Variables

**First Level Identification**
- Specificity of definition of alcohol problem (D)
  - number, type and proportion of cues

**Second Level Identification**
- Directness of action taken (A)

---

*Figure 7.1: Treatment of Variables within Research Model*
First Level Identification

(1) Level of employment ——— Specificity to Definition
(2) Community-Industry Size ——— Specificity of Definition

Second Level Identification

(1) Level of employment ——— Directness of Action Taken
(2) Community-Industry Size ——— Directness of Action Taken
(3) Specificity of Definition ——— Directness of Action Taken

Figure 7.2: Primary Exploratory Relationships

7.2 Measures

The variables were operationalized in the following way:

Independent Variables

(1) Level of employment (L) - It was felt that the level in the industry at which the identification occurred would alter the type of formal and informal relationships and would consequently have an effect on identification. Persons with different role expectations are known to label problems differently, for different reasons (Gove, 1976). The variable 'level of employment' was operationalized along three dimensions. Only three dimensions were chosen to allow for comparability across industries of different sizes. An original interest in looking at five dimensions had to be abandoned because of lack of stratification in smaller industries.
The three dimensions chosen were:

(a) Management - this level was defined as individuals holding executive positions in the organization, or who had responsibility for the development of company or departmental policy. These individuals were not unionized.

(b) Middle-management - Middle-management was defined as front line supervisors, responsible for the organization and direction of work activities of an hourly group of employees, and for reporting of activities to more senior individuals. Except in the two smallest industries, where some charge-hands having comparable duties were included, none of this group were unionized.

(c) Hourly Workers - This third level included workers involved in major resource-task functions. The group had no managerial function. All individuals in this category were unionized.

Selection was sought from only those workers involved in processes directly relating to the organization's resources function. Ancillary service functions (e.g., cleaning personnel) were excluded.

(2) Community size-Industry size (S) - Individuals select locations for employment and a home for many reasons. The underlying dynamics appear particularly relevant within the north where individuals of similar ethnic background or lifestyle interests have tendencies to group together.
To begin to understand the dynamics within various communities and industries of the north, affecting the identification of alcohol problems, a comparison of different-size communities and industries was considered important.

This variable was treated both as two separate variables—community size and industry size—and as a composite variable of community-industry size.

(a) Community size - the size of community was based on the population within the corporate limits of the centre where the industry was located and adjoining subdivisions in which a large number of employees were resident. For the major portion of the analysis the community size was operationalized as:

    Small - population below 2,000
    Large - population of 10,000 or more.

(b) Industry size - This variable was based on the number of employees working on a primary work site. Ancillary units of the industry were excluded (e.g., falling operations in lumber companies). The variable was operationalized on three dimensions:

    Small - 50–299 employees
    Medium - 300–799 employees
    Large - 800 or more employees

(The largest industry had 2000 plus employees.)

(c) Community size–Industry size - The variables of community size and industry size were combined into five combination variables as shown in Figure 7.3.
Dependent Variables

(1) Specificity of Definition (D)

It was conceived that in "the Identification Process" those identifying the problem are prompted by different cues to label a problem as an alcohol problem. What these cues were and how they were defined was a major reason for this study.

As no standardized classification of cues could be found in the literature, the final operationalization of this variable was left to a content analysis of the responses. Important differences were expected in:

- the number of cues
- the type of cues
- the proportion of cues of a particular type to total number of cues.

(2) Directness of Action Taken (A)

As discussed in the chapter on "the identification process" it was expected that "action" cues based on several factors related to role, organizational structure and policy.
The operationalization of this variable was also contingent on a content analysis, although possible dimensions on which to operationalize a variable were thought to be:

(a) Organizational level to which action was taken,
(b) Type of action taken,
(c) Formal vs. informal action.

Intervening Variables

Several variables describing personal characteristics and interactional or communication opportunities of the identifier were thought to have important intervening effects between the effects of the independent and dependent variables. These variables, included in the original design, were:

(1) Age \((AG)\)

As the distribution of individuals within the region of study differed from other regions in the province, it was considered important to examine the effects of age. This variable was operationalized as the age in years of the respondent.

(2) Education \((E)\)

As it appeared that the educational level for certain groups of individuals in the north might be lower than elsewhere in the province, it was considered important to examine the intervening effect of educational level. Actual educational status could affect the responses to questions. Education was operationalized as \(N = \text{number of years of education, by type}\). The types of education included were: technical, university, secondary and
elementary school.

(3) Length of Time in the North (LT)

Northerners frequently prefer to distinguish themselves from "southerners". It is unclear exactly what is being referred to and when this distinction is made. To explore this further, the variable 'Length of Time in North' was operationalized as N = number of years of residence in Northern British Columbia communities, where 'north' refers to the area above the 54th parallel.

(4) Distance (DB)

Robins (1976) has indicated that the risk of being labelled a problem drinker seems

...proportional to the social distance between the labeller and the alcoholic, decreasing from family to friends and neighbours, to employer, to police, to doctor.

There is reason to believe that, because of differences in nature and size of northern industries and communities, this aspect of identification in the north may be different from that discussed by Robins. To explore the effect of social distance between employer and employee on the identification of alcohol problems, the variable Distance (DB) was calculated using the following formula:

\[ DB = (\text{Level of Identification}) - (\text{Level of Identified}) \]

*Level refers to level of employment.*
(5) **Language Spoken (L)**

Language is one factor which tends to keep individuals with similar ethnic backgrounds together. Within northern communities the communication of cues to identification was thought to vary with the ability to speak and/or comprehend the language of fellow workers. The variable included twenty-four language groups. For the final analysis this variable was operationalized on two dimensions according to principal language:

(a) English-speaking

(b) Non-English-speaking.

(6) **Place of Identification (P)**

Robins (1976) has implied by her assumption of the effect of social distance that identification will vary with different settings. In northern communities where social distance may not be so great, interaction between employee and employer may be high or higher outside the work setting than within. To explore this aspect of identification the setting or Place of Identification, was operationalized as:

(a) Identification at work

(b) Identification outside of work.

**Ignored Variables**

A number of variables related to job characteristics were considered to affect exposure of individuals to others and consequently affect the communication pattern. These variables tended to be more difficult to operationalize.
and, therefore, were not included in the final design.

7.3 Hypotheses

The study was basically exploratory; therefore, no hypotheses were developed for testing prior to the commencement of the study. Tentative hypotheses stated as expectations were:

(1) There will be a greater specificity of definition of the problem in small communities/small industries than in large communities/large industries.

(2) There will be greater specificity of definition of the problem by identifiers at higher organizational levels.

(3) There will be a greater formal action in large communities/large industries than in small communities/small industries.

(4) There will be a greater tendency towards action at higher levels in the organization.

Additional informal hypotheses which were considered as the analysis developed were:

(5) Certain types of cues are more likely to affect identification and therefore result in the identifier taking a more directed action.

(6) The identification process is more likely to be completed (both process levels included) if the identifier is above the identified in the organizational structure.

(7) The degree of specificity of definition is greater when the identifier and identified are at the same level in the organization.
Chapter Eight

METHODS AND PROCEDURES

8.1 Setting and Subjects

Geography

The study was conducted in the Regional District of Kitimat-Stikine, situated in the northwestern corner of the Province of British Columbia. The 36,621 square miles of the district are bounded on the west to a large extent by the Alaska Panhandle. The region is extremely rugged, yet has marked variation in terrain. The fjord-like channels on the west coast give sudden rise to majestic splendor of five-thousand-foot mountains. The memories of past ages lie in frozen glacial rivers of the north central part of the region. The lower levels of the Nass River provide restful haunts for seal and porpoise which come from the sea to "play."

The mountain ranges provide contrast in scenery and marked variation in the weather conditions within the region. The intensity of the mountains, rivers, sea and forest, as seen in the map (Figure 8.1) contribute to variety and uniqueness of lifestyle and economic conditions.

Communication and Access

The majority of the Region's population of 38,052 lives along the Yellowhead Highway (No. 16) which provides transportation links through the interior of British Columbia to the southern parts of the province, when not interrupted
Figure 8.1. Map of the Province of British Columbia showing location of Regional District of Kitimat-Stikine (Region of Study).
by slides and other weather conditions. A secondary unpaved highway (No. 37), better known as the Stewart-Cassiar highway, goes north from Kitwanga to the B.C.-Yukon border. This highway has attracted individuals into sparsely scattered settlements, and unites several Native Indian villages.

A third paved highway unites the town of Kitimat and the adjoining Indian village of Kitamaat (both located at the head of the Douglas Channel), with Terrace, some 38 miles inland.

The region is serviced daily by the Canadian National Railway, linking Prince Rupert in the west and Prince George in the east. There is daily bus service to Vancouver (approximately 1,000 road miles), a trip which takes 20 hours. CP Air provides air transportation, as weather permits, to Prince Rupert and Vancouver.

Numerous independent charter companies operate plane and helicopter services out of the major communities and some of the smaller communities of the region to Vancouver and the provincial capital, Victoria. Transportation within the region depends greatly on weather conditions, and the season of the year determines the type of transportation used.

B.C. Telephone service exists only in the major centres. Radio communica
tion to points north of Terrace is functional only in the winter months. None of the communities in this study were dependent on radio communication only.

Figure 8.2 summarizes the number of industries in large and small com-
munities which were included in the study.
Figure 8.2: Number of Industries by Community Size

<table>
<thead>
<tr>
<th>Industry Size</th>
<th>Small</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Medium</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Large</td>
<td>---</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 8.3 shows the characteristics of communities and industries included in this study. These industries and communities were chosen, as they filled the dimensions for community and industry size of the study design.

8.2 Selection of Sample

As the study was primarily descriptive and limited time and funds were available, it was necessary to base the selection of sample on a combination of probability and non-probability techniques. The form of the sampling applied was a random stratified sample.

Industries were chosen for the study because of the balance which they provided to the design. A design with a more evenly graded scale of industry and community size could have perhaps been found if the researcher had gone beyond the boundaries of the Regional District. It was, however, decided to stay within one region's political planning boundaries because of funding constraints.

Prior to selection of the sample the researcher insisted on approval from both management and union officials for each industry. It was necessary
Large Communities*

Terrace (approx. 15,000 pop.)
- composed of several subdivisions
- mixed ethnic population
- oldest of large communities
- inland service centre
- headquarters for most social and public health services

Kitimat (approx. 14,000 pop.)
- a younger, planned community
- mixed ethnic groupings
- adjoining Indian village
- seaport, service centre

Small Communities

Stewart (approx. 1,300 pop.)
- one of the first mining communities on west coast of North America
- almost 100% immigrant population
- mixed ethnic groupings
- younger age group (average)

Kitwango-Kitwancool
- composite communities (no single incorporated municipal government)
- composed of two Native villages of Kitwanga and Kitwancool
- major company residence subdivision in Kitwanga approximately 3 miles from village
- only communities without controlled liquor outlet included in study
- lowest population turnover of district
- major villages approximately 15 miles apart
- communities isolated until bridge built in 1975
- no professional health services resident

Industries**

Canadian Cellulose Company Ltd. (Pohle Lumber Company)
- 280 employees
- sawmill and lumber processing

Prince-Skeena Forest Products
- 200 employees
- sawmill and lumber processing

Alcan Smelter and Chemicals Ltd.
- 250 employees
- aluminum smelter

Eurocan Wood Products
- 760 employees
- pulp and paper mill

Granduc Mines Limited
- 400 employees
- copper mining

Cancel Wood Products
- 100 employees
- sawmill and lumber processing
- predominantly Native worker population

Kitwanga Lumber
- 50 plus employees
- independent family operation
- sawmill and lumber processing
- predominantly Native worker population

*Populations are based on initial figures of 1976 mini census, selected by enumeration districts.

**Industry sizes presented are approximate—factors of high turnover, seasonal employment make exact estimates difficult. The sizes were known within period of study. (N.B. Some ancillary operations were excluded.)

Figure 8.3: Characteristics of Communities and Industries Studied.
in some cases to contact more than one union local and/or union. Both company and union officials were given the design of the study and were permitted to discuss the study and share it with their membership as they chose. When the sample included persons living in Indian Villages, contact with and approval of the Chief Band Councillors was first obtained before conducting the interviews.*

The sample was selected from company payroll lists. Names, addresses, ages and telephone numbers (if available) were obtained. Confidentiality was maintained by developing a card system which allowed the name of the respondent to be kept apart from the interview schedule (see Appendix A). No attempt was made to exclude or distinguish between drinking and non-drinking respondents.

When selecting the sample, the names of individuals or sections of the industry not involved in major resource tasks (i.e., those employed in maintenance, cleaning) were excluded. The distinction between resources and ancillary services was not always clear in the company records which were available to the researcher.

Ten persons (all males) were chosen from each of three levels within the six industries. The expected size of the sample was 30 x 6 = 180. Cells could not be completed for the middle and top management in two of the

*As several other studies were being conducted during this period it was considered important to coordinate this study with others. Coordination was made possible through the appointment of an advisory committee by the Skeena Manpower Development Committee, a group of Management and Union representatives. Where industries and unions were not participating members of the SMDC, it was necessary to rely on union/management groups and the sponsoring body, the Regional District of Kitimat-Stikine, for advice.
smaller industries. No replacement or modification was possible when this occurred for Prince-Skeena Forest Products in Terrace. A major modification was made to balance the design in Kitwanga by introducing a second small industry, Kitwarga Lumber.

The flow chart in Figure 8.4 shows the sampling process and final respondent profile. To allow for replacement of respondents refusing to participate, or who were unable to be contacted, additional names were selected randomly at the time of initial sampling.

8.3 Interview Schedule and Administration

A personal interview using a standardized interview schedule (Appendix B) was chosen to collect the data, for several reasons:

1. Since the study was exploratory, it would allow for the opportunity to assess reliability of expressed beliefs, as determined through the open-ended and closed questions, as well as allow the interviewers to record additional impressions about the 'problem'.

2. Since the sample was expected to be a mixed ethnic group, it was assumed that language would present a problem in administering a mailed questionnaire.

*This was possible because of the unique features of these communities. Hourly payroll for Cancel, Kitwanga Lumber operations, and Kitwanga Lumber Company (independent) came primarily from the Native villages of Kitwanga and Kitwancool respectively. Top management and the majority of middle management from both industries lived either in a company residential subdivision or community centre of Kitwanga.
Figure 8.4. Flow Chart of Sampling and Interviewing Processes.
3. It was expected that the sample population, being unfamiliar with surveys, would not be prepared to invest time to respond to questions in a mailed questionnaire.

4. The area of occupational alcohol programming is a sensitive one in some industries and communities. The interview provided the opportunity to explain the purpose of the survey and to answer questions following the interview.

5. Anecdotal comments on the problem, of value to the exploratory nature of the study, were likely to be presented in an interview.

The two interviewers shared problems encountered in the presentation of the schedule allowing a consistent approach to be taken. In addition, the interviewers were instructed to record, after the interview, comments and impressions received from the respondents that related to: (1) the alcohol problem in the community, (2) salient ideas on programming, and (3) information received on the respondent's personal drinking habits.*

**Pretesting the Instrument**

The instrument was pretested twice in Vancouver. The first pretest was completed in a three-day period with ten University of British Columbia graduate students from various departments in the Faculty of Medicine, School of Nursing, and Department of Adult Education. The second pretest was also performed in

*No attempt was made to distinguish between drinkers and non-drinkers, as no reliable method of determining drinking habits was available.*
a three-day period and included non-academics from industry and business organizations. Approximately half of the individuals in the second pretest were employed in staff positions while the other half were hourly workers. Word changes, filtering of the questions, and instrument re-organization were the major revisions made following the pretests.

A final pretest and pilot study was conducted in Babine Forest Products Ltd., at Burns Lake, B.C., during the period May 16-May 24, 1977.* Pilot ing the instrument with a comparable population to the study population suggested additional changes and allowed for an accurate estimate of the time requirements to be developed.

The major revisions made in the schedule following the piloting were:

(1) Change from open-ended to closed questions to increase group difference in response;

(2) Reduction or elimination of sections of the schedule which tended to lose the interest of the respondent.

Design of Schedule

The interview schedule was developed in five parts with a standardized introduction. The five parts were:

Part I - Structured questions

---

*Agreement, as in the final study, was obtained from both management and union representatives of Babine Forest Products. The population of the pilot Study included immigrants, long- and short-term residents, and a mixture of ethnic backgrounds.
Part II - Expected Association

Section 1a - Scenario Selection (4 Scenarios)

Section 1b - Cue association with Selected Scenario

Part III - Experience Association - Recall of incidents
- (individuals with alcohol problem)

Section 1a - First Critical Recall
- individual of (close) relationship

Section 1b - Cue Association with First Recall

Section 2a - Second Critical Recall
- individual of (distant) relationship

Section 2b - Cue Association with Second Recall

Part IV - Action Taken - Direction and Rationale

Part V - Awareness of Company Policy

Part I - consisted of a series of questions relating to respondent's personal characteristics, work experience and interaction pattern within industry and community.

Part II - this part of the schedule allowed those without experience to select a hypothetical situation on which beliefs could be projected (Dexter, 1970).*

Part III - four scenarios were constructed using a modification of De Weerd's (1974) reverse process method, which is most frequently used.

The four scenarios were purposely constructed using case histories in the

literature which reported "effects of the alcohol problem on work." The major 'effects on work' which were considered in the scenario construction were: poor work performance, absenteeism, home problems, and job turnover, as seen in Figure 8.5.

**Scenario Construction**

**Direct effects**

- **Poor work performance**
  "Since John came to the company five years ago his work has deteriorated..."

- **Absenteeism**
  "George comes to work late every Monday. He has phoned in sick two days in the last week."

**Indirect effects**

- **Home problems**
  "Fred has been really quiet at work lately. Rumor has it his wife is giving him a bad time..."

- **Job Turnover**
  "This is the fifth job that Bill has had in the last year. During that time he has lived in three companies."

**Figure 8.5: Scenario Construction**
In constructing the scenarios the type of interactions and hints as to place of identification were varied.

Following each scenario a series of questions of dichotomous responses were presented to allow for the respondent to label the incident by "problem area", indicated in the five following statements:

(a) Bored and tired of his job.
(b) Worrying about problems at home.
(c) Having an emotional problem.
(d) Having a drinking problem.
(e) Finding work too hard or stressful.

The respondent was then asked to select the scenario most likely to be a drinking problem. After the scenario was selected, he was then asked to relate behavioral and appearance clues which he would expect to be associated with the drinking problem in the scenario (Section 1b).

Part III - this part was developed to determine the respondent's experience. A critical incident technique, which in this case, was the recall of an individual who had a drinking problem, was developed to determine the basis for identification of a person (Flanagan, 1954; Signori, 1957). Section 1a identified persons (workers) closely associated with the respondent, and Section 2a identified persons more (distant) from the respondent. Sections 1b and 2b, following each recall, elicited the clues which allowed the respondent to identify the person as a problem drinker.

Part IV - this part was given only to those individuals who had "experience" or who had recalled "critical individuals." A description of (1) action taken, (2) order of action, and (3) rationale for action, was elicited.
Part V - this part was designed to determine the respondent's awareness of company policy relating to alcohol abuse. Figure 8.6 summarizes the design of the interview schedule in detail.

8.4 Interviewing Process

The interviews were conducted in the six-week period of June 1 to July 15, 1977. The interviewers, one female and one male, were selected on the basis of comparable professional background and interviewing skill. The female was bilingual (English and French). Interviews were randomly assigned to each interviewer.

It was intended that the interviews would be conducted in the homes of the subjects. However, the option to be interviewed in a location of the respondent's choice was provided. Hospital outpatient departments, public health offices, and regional district or municipal offices were suggested as alternatives (with prior arrangements made with concerned authorities) in most communities. In the villages of Kitwanga and Kitwancool, office space was volunteered by the Band Councils. Middle and top management frequently chose to be interviewed at work when they had private offices.

The following figure shows the proportion of interviews conducted in each type of interviewing location.
<table>
<thead>
<tr>
<th>Question #</th>
<th>Variable Area</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>First language</td>
<td>Birthplace, age, lifspace in north</td>
</tr>
<tr>
<td>4-9</td>
<td>Experience with company</td>
<td>Languages spoken, First language</td>
</tr>
<tr>
<td>10</td>
<td>Work Group Change</td>
<td>Present job, Levels worked in Company, Continuous service, Length of service</td>
</tr>
<tr>
<td>11, 12, 14, 16, 17</td>
<td>Personal interaction</td>
<td>Size of work group, Frequency of change</td>
</tr>
<tr>
<td>18</td>
<td>Attitude to freetime activities</td>
<td>Interaction during freetime, workbreak, days off; Frequency of required job interaction</td>
</tr>
<tr>
<td>15</td>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>19-22</td>
<td>Education</td>
<td>Type of technical training, Level of academic education, Health and First Aid training, Management training</td>
</tr>
<tr>
<td>23</td>
<td>Exposure to lifestyle concerns</td>
<td>Type and place of exposure</td>
</tr>
<tr>
<td><strong>Part II</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24-27</td>
<td>Problem definition</td>
<td>Use of labels</td>
</tr>
<tr>
<td>28-31</td>
<td>Validity Response</td>
<td>Application of selected scenario to real situation</td>
</tr>
<tr>
<td>34-36</td>
<td>Expected cues to problem identification</td>
<td>Type and number of Appearance, general, work and non-work cues</td>
</tr>
<tr>
<td>37</td>
<td>Expected means of identification</td>
<td>How problem information was received</td>
</tr>
<tr>
<td><strong>Part III</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38-43</td>
<td>Experience</td>
<td>Knowledge of individual with problem</td>
</tr>
</tbody>
</table>
| Part III - cont'd. | 44-52 | Identified individuals (close, distant) | Level of employment of individual  
Problematic behavior  
Initial effect on individual |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>45-53</td>
<td>Company's problem</td>
<td>Impressions of effect on company</td>
<td></td>
</tr>
<tr>
<td>46-54</td>
<td>Respondent's problem</td>
<td>Salient effects on respondent</td>
<td></td>
</tr>
</tbody>
</table>
| 47,50,51,55,59,60 | Means of Identification | Where identified  
How identified |
| 48-49 | Rationale for Drinking | Impressions of cause |
| 56-57 | Observed cues to problem | Type, number, relative proportions  
General, work, non-work |

| Part IV | 61-62 | Action | Action taken  
Type of action  
First action  
Rationale for action/inaction |
|---|---|---|---|
| 63 | Final outcome | Type of outcome  
Final action  
What is present status of individual |

| Part V | 64-66 | Policy awareness  
Policy Statement  
Policy evaluation | Means of awareness of policy  
Verbalized policy  
Appropriateness of policy  
Insufficiencies of policy |

Figure 8.6: Summary of Interview Schedule
### Table 8.1

**Location of Interview**

<table>
<thead>
<tr>
<th>Location</th>
<th>Number</th>
<th>% of Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>97</td>
<td>53.3%</td>
</tr>
<tr>
<td>Industry</td>
<td>32</td>
<td>17.6%</td>
</tr>
<tr>
<td>Office</td>
<td>53</td>
<td>24.1%</td>
</tr>
</tbody>
</table>

Two of the interviews were conducted in French. Translators were required for six interviews in other languages. The translators were generally a spouse or brother of the respondent. When interviews were conducted in the home, the respondent was allowed to determine whether other family members were to be present during the interview. Interviews lasted 25 to 90 minutes, with an average length of 40 minutes.

In preparation for the interview, a letter was sent to each individual selected for the study. The letters were sent out approximately five days before the respondent was contacted personally (see Appendix A). A different form of letter was sent to individuals living in Indian Villages indicating the interest and approval of the Band Council. Where possible, the letter was followed by a telephone call to schedule an appointment, or to answer questions concerning the project.

As two-thirds of the respondents worked on shifts, interviewing was done between 8:00 a.m. and 10:00 p.m. on weekdays, and occasionally during
the weekend. Thirteen out of the 183 respondents who received the initial mailing (7.1%) could not be reached. An additional eleven out of 183 (6.06%) refused to participate. Reasons for refusing were varied: (1) "too busy", (2) "summer visitors had arrived," (3) disbelief in survey, (4) preference for responding in a particular way (e.g., writing), (5) summer construction required immediate attention, (6) involved with negotiations between union and management. In one case a spouse refused on behalf of her husband and would not allow the interviewers to speak to her husband.

8.5 Data Preparation - The Content Analysis

Because of the exploratory nature of this study a number of major decisions regarding data preparation had to be made before the final analysis.* The first task was to determine a format for the content analysis of the open-ended questions, relating to the two dependent variables.

Content analysis has been described as a "method of studying and analyzing communication in a systematic, objective and quantitative manner to measure variables" (Berelson, 1954). It has been more technically described as a way of quantifying qualitative data (Holsti, 1968). Kerlinger (1973) sees content analysis as more than a method of analysis and refers to it as a method of observation. He argues that content analysis allows one to take an indirect approach to observation, yet measure the direct effect.**

*Although the method has been recognized as an acceptable approach to hypothesis testing when comparing messages from two or more sources it is also used in exploratory studies.

**Content analysis was particularly suited to this study of "identification process" as the technique is a communication process in itself, and therefore has similarities.
The Development of Content Categories

The content analysis was applied primarily to the selected scenario and critical incident recalls in Parts II and III of the questionnaire. It was also applied to some of the intervening variable questions with open-ended format. The content units concentrated on in this study were words and phrases which had been recorded verbatim as per instructions to the interviewers. Attempts were made throughout the research process to standardize procedure so as to provide a reliable information base from which to make the content analysis.*

In developing the units of analysis the first step was to list all individual responses and then regroup. An attempt was made to develop mutually exclusive categories, yet maintain analyzable units (Kerlinger, 1973). As the only actual classification closely approximating the two dependent variables was available in an article by Maxwell, which presented a non-categorized listing of cues, the content categories had to be developed with primary reference to constructs appearing throughout the literature. Normally within content analysis the quantification of qualitative information may be accomplished in three ways: (1) counting of numbers (nominal measurement), (2) ranking (ordinal measurement), and (3) rating (Berelson, 1968). In this study the number and type of cues in identification and type of action were regarded as nominal measurement, first cues and first and second action, as well as continuous behavioral descriptions (i.e., hypo, hyper, and aggressive interpersonal behavior) were

*See the discussion of encoding and reporting in an earlier section on methodology.
Categorization of Alcohol Problem Identification:
"Specificity of Definition"

The parallel structure of the questionnaire allowed for one set of content categories to be developed for the three sets of projective questions included in:

- Questions 34-36
- Questions 48-49
- Questions 56-57

The categories were based on types of cues and were non-specific to personal factors such as age, or to the relationship between the identifier and the identified. All categories were unrelated to place of identification except work and non-work behaviors, as seen in type 3 below. Four major types of cues were developed:

1. Appearance cues
2. Interpersonal Behavioral cues
3. Behavioral (work, non-work) cues

Examples of words and phrases included within the categories of the four types are seen in Figure 8.7.

To preserve both the qualitative and quantitative aspects of questions related to expected and observed cues, the information for analysis of cues was subsequently coded as:
(1) Number of different cues within each type

(2) First cues and subsequent cues in order presented

(3) Actual number of each type of cue.

From the above information the calculation of the proportion of cues by type as shown in the following computation was performed.

\[
\frac{\text{Total number of cues for specific type}}{\text{Total number of cues of all types}} \times 100 = \text{proportion of cues by type.}
\]

This calculation extended the potential of the analysis. The four ways in which the dependent variable "specificity of Definition" was finally operationalized were:

(a) number of cues by type;

(b) categories of cues by type (categories of first cues presented by type);

(c) proportion of cues by type.

Categorization of Action Taken: "Directness of Action Taken"

A similar process was followed in developing content categories for responses to the second question, which asked:

"Did you actually do anything...?"

"What did you do first?"
APPEARANCE CUES

Grooming - Sloppy, unshaven, untidily dressed
Clean and neat

Physical features noted -

Eyes - blurred, glassy, red, bleary
Face - purple, red, swollen, dark,
perspiration on skin, red/blue nose

Movement - Staggering, sluggish walk, shaky hands
Tired, drowsy, spaced out

Speech - Slurred, unclear, incoherent, loud voice
talkative

INTERPERSONAL BEHAVIOR CUES

Hyper (approach) behavior
- excitable, nervous, happy, gregarious, highly sociable

Hypo (avoidance) behavior
- quiet, avoids others, unhappy, denies, fails to work
  in teams, a loner, no contact in community

Aggressive
- touchy, irritable, fights, blames others, complains,
is suspicious

WORK-RELATED BEHAVIOR CUES

Low quantity - slow, lazy, lackadaisical, procrastinates,
does not share load

Low quality - inadequate work performance, low quality,
not able to do job properly

Disorganized - erratic work, not systematic, no judgment

Careless - neglects details, minor accidents on the job
WORK-RELATED BEHAVIOR CUES - continued

Absent from job, but at work
- leaves position, extended coffee breaks

Absent from work - unspecified

Absent from work - associated with Mondays, Fridays
- leaves work early, arrives late

NON-WORK RELATED BEHAVIOR (OUTSIDE OF WORK) CUES

Family, home problems
- beats wife, problems with wife and children
- problem with girlfriend

Repeated accidents and sickness

Trouble with law
- loss of driver's licence

Financial problems

DRINKING BEHAVIOR CUES - USE OF ALCOHOL REFERRED TO

The act of drinking itself
- drinking at work, in washroom, at lunchtime, eats no lunch.

The knowledge of having drunk
- intoxicated, half-drunk, has morning drink
- personality change noted as a result of drinking

The observance or knowledge of side effects
- hangover, headache, has 'runs'

Figure 8.7: Examples of content - Words and Phrases included in four major types of cue
Figure 8.8 presents examples of content units of direct action:

INFORMAL ACTION

1. Talked to individual; talked about problem; showed him facts.
2. Covered up; hid individual; did his work;

FORMAL/INFORMAL ACTION (dependent on position in organization)

3. Tried to get treatment, guidance; changed work.
4. Took home; contacted wife.
5. Disciplined; threatened; informed of policy.

FORMAL ACTION

6. Sent letter; suspended; or fired.
7. Wrote letter of referral.

For the analysis of the "Directness of Action Taken", categories in the closed questions relating to "types of discussion" were combined with categories of "direct action" which are seen in the above figure. The dimension of FORMAL/INFORMAL was not included in the final analysis. The second dependent variable for the final analysis was operationalized as:

(a) Type of first action
(b) Type of second action.
Further Content Analysis

All open-ended questions were content analyzed. The final categorization may be seen in the coding manual in Appendix C. These questions were not major parts of the analysis in many instances because of the low response rate.

8.6 Subjective Comments and Impressions

A number of subjective comments were recorded by the interviewers. These responses were of assistance in validating responses received, although not presented in the analysis. Areas where subjective comments were noted were:

(1) Impressions of the cause of the problem and calculations.

(2) Respondent's acknowledgment or portrayal of personal drinking habits.

(3) Atmosphere of interview - setting

(4) Respondent's personal concerns about being interviewed.
Chapter Nine

DATA ANALYSIS

9.1 Sample Distribution on Demographic Data

Table 9.1 shows the frequency distribution of the sample on the major sociodemographic variables. The findings relate to several of the characteristics which are unique to developing northern areas.

The age range for the respondents in the sample was 18 to 62 years with a mean of 37.9 years. Within this range the largest single age group was 31 to 40-year-olds. The relatively large proportion, 39 percent of sample, in the 41 to 65 year age group would probably represent immigrant individuals who came to the region between fifteen and twenty years ago when the predominant industries were established.

One hundred and eleven, or 61 percent of the sample, were immigrants (born outside of Canada); of these 61 , or 33.5 percent came from another part of the province. A total of 148, or 81 percent, including those who had lived elsewhere in British Columbia, emigrated to the region where the study was conducted.

The majority (54.9 percent) had a first language other than English. The largest language group other than English were Native Indians.
### TABLE 9.1
**DISTRIBUTION OF INDIVIDUALS IN SAMPLE ON SOCIO-DEMOGRAPHIC VARIABLES**
(Age, Birthplace, Length of Time in North, Residence Prior to Arrival, Principal Language, Education)

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 - 20</td>
<td>4</td>
<td>(2.2)</td>
</tr>
<tr>
<td>21 - 30</td>
<td>53</td>
<td>(29.1)</td>
</tr>
<tr>
<td>31 - 40</td>
<td>54</td>
<td>29.7</td>
</tr>
<tr>
<td>41 - 50</td>
<td>32</td>
<td>17.6</td>
</tr>
<tr>
<td>50 - 65</td>
<td>39</td>
<td>21.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Birthplace</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>71</td>
<td>39</td>
</tr>
<tr>
<td>Elsewhere</td>
<td>111</td>
<td>61</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length of Time in North</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immigrant to north</td>
<td>148</td>
<td>81</td>
</tr>
<tr>
<td>Life</td>
<td>34</td>
<td>18</td>
</tr>
</tbody>
</table>

Mean years in area 11.70
Standard deviation 9.1
Median 8.3

<table>
<thead>
<tr>
<th>Residence Prior to Arrival</th>
<th>N</th>
<th>Group %</th>
<th>Sample %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern B.C.</td>
<td>11</td>
<td>(7.4)</td>
<td>6.0</td>
</tr>
<tr>
<td>Elsewhere in B.C.</td>
<td>35</td>
<td>19.7</td>
<td>19.2</td>
</tr>
<tr>
<td>Another province</td>
<td>61</td>
<td>41.2</td>
<td>33.5</td>
</tr>
<tr>
<td>Another country</td>
<td>40</td>
<td>27</td>
<td>21.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Principal Language (first language)</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>82</td>
<td>45.1</td>
</tr>
<tr>
<td>Other</td>
<td>100</td>
<td>54.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major Languages (other than English)</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Indian</td>
<td>23</td>
<td>12.6</td>
</tr>
<tr>
<td>French</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>German</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>East Indian (dialects)</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Portuguese</td>
<td>10</td>
<td>5.5</td>
</tr>
<tr>
<td>Other (12 groups)</td>
<td>39</td>
<td>21.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>Elementary</td>
<td>47</td>
<td>26</td>
</tr>
<tr>
<td>High School</td>
<td>93</td>
<td>51.4</td>
</tr>
<tr>
<td>University or Technical</td>
<td>39</td>
<td>21.5</td>
</tr>
</tbody>
</table>
On the variable "education," 27.1% had only elementary or no education, and only 21.5% percent had technical, skilled or university education.

Similarity of Samples

The samples were analyzed to determine differences in the distribution of sociodemographic factors (age, birthplace, length of time in north, residence prior to arrival in north, principal language, and education) within the major independent variables—community size, industry size and level of employment.

To test the association, contingency tables were generated and level of association or independence was based on the Chi-squared statistic (Nie, et al, 1975).

Tables 9.2 to 9.4 - Age, and length of time in the north were associated with all three independent variables. The variable, "educational level," varied only slightly with community size, but to a greater extent with "industry size," and "level of employment. Marital status varied with level of employment, but was independent of community size and industry size.

Age

As seen in Table 9.5, smaller communities had significantly younger age groups in the sample (44.1% percent were aged 30 or below, compared with 25.9 percent in larger communities). The same distinct relationship (Table 9.6) is seen with the size of industry (where 41.9 percent in small industries compared with 5.5 percent in large industries, were aged 30 or younger). Table 9.7 shows that more younger individuals are at lower levels of employment (55.6 percent aged 30 and below were hourly workers compared with 13.2 percent in management positions).
### TABLE 9.2
INTERVENING VARIABLE ASSOCIATIONS WITH COMMUNITY SIZE

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\chi^2$ Value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>15.2</td>
<td>.001</td>
</tr>
<tr>
<td>Marital Status</td>
<td>8.3</td>
<td>.08</td>
</tr>
<tr>
<td>Birthplace</td>
<td>8.0</td>
<td>.04</td>
</tr>
<tr>
<td>Length of Employment</td>
<td>31.3</td>
<td>.000</td>
</tr>
<tr>
<td>Length of Time in North</td>
<td>11.9</td>
<td>.000</td>
</tr>
<tr>
<td>Principal Language</td>
<td>0.05</td>
<td>.8</td>
</tr>
<tr>
<td>Education</td>
<td>18.1</td>
<td>.000</td>
</tr>
</tbody>
</table>

### TABLE 9.3
INTERVENING VARIABLE ASSOCIATIONS WITH INDUSTRY SIZE

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\chi^2$ Value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>19.1</td>
<td>.004</td>
</tr>
<tr>
<td>Marital Status</td>
<td>9.4</td>
<td>.31</td>
</tr>
<tr>
<td>Birthplace</td>
<td>10.3</td>
<td>.00</td>
</tr>
<tr>
<td>Length of Employment</td>
<td>13.3</td>
<td>.04</td>
</tr>
<tr>
<td>Length of Time in North</td>
<td>29.1</td>
<td>.00</td>
</tr>
<tr>
<td>Principal Language</td>
<td>4.3</td>
<td>.11</td>
</tr>
<tr>
<td>Education</td>
<td>13.1</td>
<td>.04</td>
</tr>
</tbody>
</table>

### TABLE 9.4
INTERVENING VARIABLE ASSOCIATIONS WITH LEVEL OF EMPLOYMENT

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\chi^2$ Value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>41.4</td>
<td>.000</td>
</tr>
<tr>
<td>Marital Status</td>
<td>28.6</td>
<td>.000</td>
</tr>
<tr>
<td>Birthplace</td>
<td>1.5</td>
<td>.47</td>
</tr>
<tr>
<td>Length of Employment</td>
<td>5.9</td>
<td>.43</td>
</tr>
<tr>
<td>Length of Time in North</td>
<td>10.3</td>
<td>.005</td>
</tr>
<tr>
<td>Principal Language</td>
<td>6.7</td>
<td>.03</td>
</tr>
<tr>
<td>Education</td>
<td>28.1</td>
<td>.000</td>
</tr>
</tbody>
</table>
### TABLE 9.5
AGE GROUPINGS BY COMMUNITY SIZE

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Small N</th>
<th>Column %</th>
<th>Large N</th>
<th>Column %</th>
<th>TOTAL N</th>
<th>Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 - 20</td>
<td>3</td>
<td>(4.4)</td>
<td>1</td>
<td>(1.0)</td>
<td>4</td>
<td>(2.2)</td>
</tr>
<tr>
<td>21 - 30</td>
<td>27</td>
<td>(39.7)</td>
<td>26</td>
<td>(25.1)</td>
<td>53</td>
<td>(29.0)</td>
</tr>
<tr>
<td>31 - 40</td>
<td>15</td>
<td>(22.2)</td>
<td>56</td>
<td>(53.9)</td>
<td>71</td>
<td>(39.0)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>68</td>
<td></td>
<td>104</td>
<td></td>
<td>182</td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2 = 15.2$  
Significance 0.009

### TABLE 9.6
AGE GROUPINGS BY INDUSTRY SIZE

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Small N</th>
<th>Column %</th>
<th>Medium N</th>
<th>Column %</th>
<th>Large N</th>
<th>Column %</th>
<th>Total N</th>
<th>Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-20</td>
<td>3</td>
<td>(4.8)</td>
<td>1</td>
<td>(1.1)</td>
<td>4</td>
<td>(2.2)</td>
<td>29</td>
<td>(16.4)</td>
</tr>
<tr>
<td>21-30</td>
<td>23</td>
<td>(37.1)</td>
<td>29</td>
<td>(32.2)</td>
<td>1</td>
<td>(3.3)</td>
<td>53</td>
<td>(29.1)</td>
</tr>
<tr>
<td>31-40</td>
<td>17</td>
<td>(27.2)</td>
<td>28</td>
<td>(31.1)</td>
<td>9</td>
<td>(30.0)</td>
<td>54</td>
<td>(29.7)</td>
</tr>
<tr>
<td>41-65</td>
<td>19</td>
<td>(30.6)</td>
<td>32</td>
<td>(35.5)</td>
<td>20</td>
<td>(66.7)</td>
<td>71</td>
<td>(39.0)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>62</td>
<td></td>
<td>90</td>
<td></td>
<td>30</td>
<td></td>
<td>182</td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2 = 19.1$  
Significance 0.004

### TABLE 9.7
AGE GROUPINGS BY LEVEL OF EMPLOYMENT

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Top N</th>
<th>Column %</th>
<th>Middle N</th>
<th>Column %</th>
<th>Hourly N</th>
<th>Column %</th>
<th>TOTAL N</th>
<th>Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-20</td>
<td>4</td>
<td>(5.4)</td>
<td>4</td>
<td>(5.4)</td>
<td>4</td>
<td>(5.4)</td>
<td>12</td>
<td>(6.6)</td>
</tr>
<tr>
<td>21-30</td>
<td>17</td>
<td>(32.1)</td>
<td>16</td>
<td>(32.1)</td>
<td>21</td>
<td>(32.1)</td>
<td>53</td>
<td>(29.1)</td>
</tr>
<tr>
<td>31-40</td>
<td>17</td>
<td>(32.0)</td>
<td>16</td>
<td>(32.0)</td>
<td>21</td>
<td>(32.0)</td>
<td>54</td>
<td>(29.7)</td>
</tr>
<tr>
<td>41-65</td>
<td>29</td>
<td>(54.7)</td>
<td>30</td>
<td>(54.7)</td>
<td>12</td>
<td>(54.7)</td>
<td>71</td>
<td>(39.0)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>63</td>
<td></td>
<td>62</td>
<td></td>
<td>58</td>
<td></td>
<td>182</td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2 = 41.4$  
Significance 0.0
### Table 9.8
LENGTH OF TIME IN NORTH BY COMMUNITY SIZE

<table>
<thead>
<tr>
<th>Length of Time in North</th>
<th>Community Size</th>
<th>Small</th>
<th>N</th>
<th>Column %</th>
<th>Large</th>
<th>N</th>
<th>Column %</th>
<th>TOTAL</th>
<th>N</th>
<th>Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part of Life</td>
<td></td>
<td>46</td>
<td></td>
<td>(67.7)</td>
<td>102</td>
<td></td>
<td>(89.5)</td>
<td>148</td>
<td></td>
<td>(81.3)</td>
</tr>
<tr>
<td>Life</td>
<td></td>
<td>22</td>
<td></td>
<td>(32.3)</td>
<td>12</td>
<td></td>
<td>(10.5)</td>
<td>34</td>
<td></td>
<td>(18.7)</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>68</td>
<td></td>
<td></td>
<td>144</td>
<td></td>
<td></td>
<td>182</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 11.96 \quad \text{Significance 0.0} \]

### Table 9.9
LENGTH OF TIME IN NORTH BY INDUSTRY SIZE

<table>
<thead>
<tr>
<th>Length of Time in North</th>
<th>Industry Size</th>
<th>Small</th>
<th>N</th>
<th>Column %</th>
<th>Medium</th>
<th>N</th>
<th>Column %</th>
<th>Large</th>
<th>N</th>
<th>Column %</th>
<th>TOTAL</th>
<th>N</th>
<th>Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part of Life</td>
<td></td>
<td>37</td>
<td></td>
<td>(59.7)</td>
<td>83</td>
<td></td>
<td>(92.2)</td>
<td>28</td>
<td></td>
<td>(93.3)</td>
<td>148</td>
<td></td>
<td>(81.3)</td>
</tr>
<tr>
<td>Life</td>
<td></td>
<td>25</td>
<td></td>
<td>(40.3)</td>
<td>7</td>
<td></td>
<td>(7.8)</td>
<td>2</td>
<td></td>
<td>(6.7)</td>
<td>34</td>
<td></td>
<td>(18.7)</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>62</td>
<td></td>
<td></td>
<td>90</td>
<td></td>
<td></td>
<td>30</td>
<td></td>
<td></td>
<td>182</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 29.01 \quad \text{Significance 0.0} \]

### Table 9.10
LENGTH OF TIME IN NORTH BY LEVEL OF EMPLOYMENT

<table>
<thead>
<tr>
<th>Length of Time in North</th>
<th>Level of Employment</th>
<th>Top</th>
<th>N</th>
<th>Column %</th>
<th>Middle</th>
<th>N</th>
<th>Column %</th>
<th>Hourly</th>
<th>N</th>
<th>Column %</th>
<th>TOTAL</th>
<th>N</th>
<th>Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part of Life</td>
<td></td>
<td>46</td>
<td></td>
<td>(86.8)</td>
<td>50</td>
<td></td>
<td>(90.0)</td>
<td>52</td>
<td></td>
<td>(60.5)</td>
<td>148</td>
<td></td>
<td>(81.6)</td>
</tr>
<tr>
<td>Life</td>
<td></td>
<td>7</td>
<td></td>
<td>(13.2)</td>
<td>5</td>
<td></td>
<td>(9.1)</td>
<td>34</td>
<td></td>
<td>(39.5)</td>
<td>34</td>
<td></td>
<td>(18.7)</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>53</td>
<td></td>
<td></td>
<td>55</td>
<td></td>
<td></td>
<td>86</td>
<td></td>
<td></td>
<td>182</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 10.3 \quad \text{Significance .006} \]
Length of Time in North; Birthplace

The length of time in the north and birthplace will be considered together as indicators of mobility. Tables 9.8 and 9.11 show a definite association, where smaller communities had a lower proportion (67.7 percent compared with 89.5 percent in larger communities) of individuals new to the north. A greater proportion (75 percent of individuals in small communities as compared to 52.6 percent in large communities) were Canadian-born. (This may be because two out of the three smaller communities were predominantly Native Indian.)

Tables 9.9, 9.12 - There appeared to be more stability (74.2 percent were Canadian-born, of which 40.3 percent spent life in the north) in smaller industries sampled, whereas in larger industries 40 percent were Canadian-born and 6.7 percent had lived all their lives in the north. This again is because the workers in the two smaller industries were predominantly Native Indian. As well, the larger employers may tend to attract workers from smaller industries, because of work benefits, and the desire to be urbanized.

Tables 9.10, 9.13 - Again, based on place of birth and length of time in the north, hourly workers have a more stable pattern of life where 39.5 percent had been in the area for life, whereas only 13.2 percent of management had been. Both top and middle management showed greater mobility than hourly workers. Mobility in the middle management group fell below top management, yet above hourly workers.
### TABLE 9.11
**PLACE OF BIRTH BY COMMUNITY SIZE**

<table>
<thead>
<tr>
<th>Community Size</th>
<th>Birthplace</th>
<th>N</th>
<th>Column %</th>
<th>N</th>
<th>Column %</th>
<th>N</th>
<th>Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Immigrant</td>
<td>17</td>
<td>(25.0)</td>
<td>54</td>
<td>(47.4)</td>
<td>71</td>
<td>(39.0)</td>
</tr>
<tr>
<td></td>
<td>Born in Canada</td>
<td>51</td>
<td>(75.0)</td>
<td>60</td>
<td>(52.6)</td>
<td>111</td>
<td>(61.0)</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>68</td>
<td></td>
<td>114</td>
<td></td>
<td>182</td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 8.04 \quad \text{Significance} 0.0046 \]

### TABLE 9.12
**PLACE OF BIRTH BY INDUSTRY SIZE**

<table>
<thead>
<tr>
<th>Industry Size</th>
<th>Birthplace</th>
<th>Small</th>
<th>Column %</th>
<th>Medium</th>
<th>Column %</th>
<th>Large</th>
<th>Column %</th>
<th>TOTAL</th>
<th>Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Immigrant</td>
<td>16</td>
<td>(25.8)</td>
<td>37</td>
<td>(41.1)</td>
<td>18</td>
<td>(60.0)</td>
<td>71</td>
<td>(39.0)</td>
</tr>
<tr>
<td></td>
<td>Born in Canada</td>
<td>46</td>
<td>(74.2)</td>
<td>53</td>
<td>(58.9)</td>
<td>12</td>
<td>(40.0)</td>
<td>111</td>
<td>(61.0)</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>62</td>
<td></td>
<td>90</td>
<td></td>
<td>30</td>
<td></td>
<td>182</td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 10.27 \quad \text{Significance} 0.0059 \]

### TABLE 9.13
**PLACE OF BIRTH BY LEVEL OF EMPLOYMENT**

<table>
<thead>
<tr>
<th>Level of Employment</th>
<th>Management</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Top</td>
<td>Middle</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>Column %</td>
</tr>
<tr>
<td>Immigrant</td>
<td>17</td>
<td>(32.1)</td>
</tr>
<tr>
<td>Born in Canada</td>
<td>36</td>
<td>(67.9)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>53</td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 10.3 \quad \text{Significance} 0.005 \]
Educational Level

Within the sample, as seen in Table 9.14, individuals in larger communities had only slightly higher level of education (in large communities 75.2 percent had at least high school education, compared to 72.0 percent in small communities). In Table 9.15 it can be seen that the largest proportion of those with at least high school education were found in medium-sized industries (82.3 percent compared with 64.5 percent in small, and 62.1 percent in large-sized industries). A highly significant direct variation of educational level with employment level may be seen in Table 9.16. Management had the highest educational level (45.3 percent of top management, compared with 16.4 percent middle management and 11.0 percent of hourly workers had university or technical education; 89 percent of hourly workers had high school or lower, whereas only 54.7 percent of top management had the same educational level).

Marital Status

There was no highly significant association between marital status and community size or industry size. However, Table 9.17 shows that there were more single individuals in hourly positions and more married persons in the top and middle management group (85.7 percent of single individuals were in hourly positions).

9.2 Validation of Scenarios

The next task in the data analysis was to examine the projective techniques applied in the four constructed scenarios. To validate the use of the scenarios for further analyses as representative of an incident related to alcohol abuse, a series of procedures was deployed to determine when an alcohol abuse
### TABLE 9.14
EDUCATION BY COMMUNITY SIZE

<table>
<thead>
<tr>
<th>Education</th>
<th>Community Size</th>
<th>Small Column %</th>
<th>Large Column %</th>
<th>Total Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td>---</td>
<td>2 (1.8)</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td>Elementary</td>
<td></td>
<td>19 (27.9)</td>
<td>26 (23.8)</td>
<td>47 (26.0)</td>
</tr>
<tr>
<td>High School</td>
<td></td>
<td>36 (52.9)</td>
<td>57 (50.4)</td>
<td>93 (51.4)</td>
</tr>
<tr>
<td>University or</td>
<td></td>
<td>13 (19.1)</td>
<td>28 (24.8)</td>
<td>39 (21.5)</td>
</tr>
<tr>
<td>Technical</td>
<td></td>
<td></td>
<td></td>
<td>182</td>
</tr>
</tbody>
</table>

\[ x^2 = 8.04 \quad \text{Significance} \ 0.0046 \]

### TABLE 9.15
EDUCATION BY INDUSTRY SIZE

<table>
<thead>
<tr>
<th>Education</th>
<th>Industry Size</th>
<th>Small Column %</th>
<th>Medium Column %</th>
<th>Large Column %</th>
<th>TOTAL Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td>1 (1.6)</td>
<td>1 (1.1)</td>
<td>--</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td>Elementary</td>
<td></td>
<td>21 (33.9)</td>
<td>15 (16.7)</td>
<td>11 (37.9)</td>
<td>47 (26.0)</td>
</tr>
<tr>
<td>High School</td>
<td></td>
<td>33 (53.2)</td>
<td>50 (55.6)</td>
<td>10 (34.5)</td>
<td>93 (51.4)</td>
</tr>
<tr>
<td>University or</td>
<td></td>
<td>7 (11.3)</td>
<td>24 (26.7)</td>
<td>8 (27.6)</td>
<td>39 (1.5)</td>
</tr>
<tr>
<td>Technical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>182</td>
</tr>
</tbody>
</table>

\[ x^2 = 13.12 \quad \text{Significance} \ .0001 \]

### TABLE 9.16
EDUCATION BY LEVEL OF EMPLOYMENT

<table>
<thead>
<tr>
<th>Education</th>
<th>Management</th>
<th>Top Column %</th>
<th>Middle Column %</th>
<th>Hourly Column %</th>
<th>TOTAL Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td>--</td>
<td>--</td>
<td>2 (2.7)</td>
<td>2 (2.1)</td>
</tr>
<tr>
<td>Elementary</td>
<td></td>
<td>9 (17.0)</td>
<td>16 (29.0)</td>
<td>20 (27.4)</td>
<td>47 (26.0)</td>
</tr>
<tr>
<td>High School</td>
<td></td>
<td>20 (37.7)</td>
<td>30 (54.6)</td>
<td>43 (58.9)</td>
<td>93 (51.4)</td>
</tr>
<tr>
<td>University or</td>
<td></td>
<td>24 (45.3)</td>
<td>9 (16.4)</td>
<td>8 (11.0)</td>
<td>39 (21.5)</td>
</tr>
<tr>
<td>Technical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>182</td>
</tr>
</tbody>
</table>

\[ x^2 = 28.10 \quad \text{Significance} \ .0001 \]
TABLE 9.17
MARITAL STATUS BY LEVEL OF EMPLOYMENT

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Top Management N</th>
<th>Column %</th>
<th>Middle Management N</th>
<th>Column %</th>
<th>Hourly Management N</th>
<th>Column %</th>
<th>TOTAL Management N</th>
<th>Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marri ed</td>
<td>50</td>
<td>(34.5)</td>
<td>49</td>
<td>(33.8)</td>
<td>46</td>
<td>(31.7)</td>
<td>145</td>
<td>(79.7)</td>
</tr>
<tr>
<td>Single</td>
<td>2</td>
<td>(9.5)</td>
<td>1</td>
<td>(0.5)</td>
<td>18</td>
<td>(85.7)</td>
<td>21</td>
<td>(11.5)</td>
</tr>
<tr>
<td>Separated/Divorced</td>
<td>--</td>
<td>--</td>
<td>3</td>
<td>(42.9)</td>
<td>4</td>
<td>(57.1)</td>
<td>7</td>
<td>(3.8)</td>
</tr>
<tr>
<td>Common-law</td>
<td>1</td>
<td>(16.7)</td>
<td>1</td>
<td>(16.7)</td>
<td>4</td>
<td>(66.7)</td>
<td>6</td>
<td>(3.3)</td>
</tr>
<tr>
<td>Widowed</td>
<td>--</td>
<td>--</td>
<td>1</td>
<td>(33.3)</td>
<td>2</td>
<td>(66.6)</td>
<td>3</td>
<td>(1.6)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>53</td>
<td></td>
<td>50</td>
<td></td>
<td>79</td>
<td></td>
<td>182</td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2 = 28.6$  Significance 0.0004
or drinking problem was indicated in each scenario. In other words, these procedures examined the respondent's use of labels to define the problem in the scenarios. As described in Chapter Eight, the respondents labelled the scenarios in two ways: the first by responding "yes/no" to a series of problem labels following each scenario, and the second by selecting the scenario most likely to be a drinking problem in response to the question "Which situation do you think is most likely to be a drinking problem?"

Table 9.18 - In Table 9.18 individual dichotomous (yes/no) responses to the six labels or problem definitions following each scenario were cross-tabulated with the "scenario" indicated in response to the question, following the group of scenarios, most likely to be a drinking problem. The second scenario ("George comes to work late... .") was most frequently indicated to represent a "drinking problem" in both labelling methods. The table shows ranking of the scenarios by each labelling method. There is agreement in the ranking of the scenarios in both methods.

Table 9.19 - Table 9.19 shows the ranking of dichotomous responses, when a scenario was selected to be a drinking problem, compared with the ranking when no selection was made. In only the second ("George comes to work late... .") and third ("Fred has been quiet ... .") scenarios was there complete correspondence in the two rankings. The table shows that the label "drinking problems" was used most frequently in all except the third scenario.

Table 9.20 - As it appeared that the combination of responses was probably affecting scenario selection and labelling, Kendall's Rank Order
### TABLE 9.18
SCENARIO MOST LIKELY ASSOCIATED WITH ALCOHOL: COMPARISONS OF RANKINGS

<table>
<thead>
<tr>
<th>SCENARIO</th>
<th>First &quot;John&quot;</th>
<th>Second &quot;George&quot;</th>
<th>Third &quot;Fred&quot;</th>
<th>Fourth &quot;Bill&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranked by forced</td>
<td>4th (n=6)</td>
<td>1st (n=101)</td>
<td>2nd (n=15)</td>
<td>3rd (n=11)</td>
</tr>
<tr>
<td>choice</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ranked by frequency of label</td>
<td>4th (n=120)</td>
<td>1st (n=162)</td>
<td>2nd (n=128)</td>
<td>3rd (n=123)</td>
</tr>
</tbody>
</table>

### TABLE 9.19
RANKING OF PROBLEM ASSOCIATION (LABELLING) FOR SCENARIOS

<table>
<thead>
<tr>
<th>Labelled Problem</th>
<th>First &quot;John&quot;</th>
<th>Second &quot;George&quot;</th>
<th>Third &quot;Fred&quot;</th>
<th>Fourth &quot;Bill&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A  B</td>
<td>A  B</td>
<td>A  B</td>
<td>A  B</td>
</tr>
<tr>
<td>Drinking</td>
<td>1 1</td>
<td>1 1</td>
<td>3 3</td>
<td>1 1</td>
</tr>
<tr>
<td>Home</td>
<td>1 3</td>
<td>3 4</td>
<td>1 1</td>
<td>3 3</td>
</tr>
<tr>
<td>Emotional</td>
<td>2 4</td>
<td>2 2</td>
<td>2 2</td>
<td>2 1</td>
</tr>
<tr>
<td>Health</td>
<td>3 5</td>
<td>4 3</td>
<td>4 4</td>
<td>6 5</td>
</tr>
<tr>
<td>Bored/Tired</td>
<td>4 2</td>
<td>5 4</td>
<td>6 6</td>
<td>5 4</td>
</tr>
<tr>
<td>Stress</td>
<td>5 6</td>
<td>6 5</td>
<td>5 5</td>
<td>4 2</td>
</tr>
</tbody>
</table>

*Range 1-6 27-136 15-134 34-97

Ranking of Scenario -

A = Based on +ve responses in selected scenarios.
B = Based on +ve responses in all scenarios.

*Range is based on # of +ve (yes labels) of any labelled problem when scenario was selected.

### TABLE 9.20
SIGNIFICANT RANK ORDER CORRELATIONS OF OTHER LABELS WITH THE LABEL "DRINKING PROBLEM" IN SCENARIOS

(Based on Frequency Response to Dichotomous questions)

<table>
<thead>
<tr>
<th>SCENARIO</th>
<th>First &quot;John&quot;</th>
<th>Second &quot;George&quot;</th>
<th>Third &quot;Fred&quot;</th>
<th>Fourth &quot;Bill&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>.3175</td>
<td>As</td>
<td>Health</td>
<td>Health</td>
</tr>
<tr>
<td>Emotion</td>
<td>.2863</td>
<td></td>
<td>Stress</td>
<td>Emotion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.1280</td>
<td>.1809</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.1720</td>
<td></td>
<td>.2464</td>
<td></td>
</tr>
</tbody>
</table>
Correlation, based on all "yes/no" responses was calculated to compare the use of the other problem labels together with drinking labels. As summarized in Table 9.20 there was significant correlation of drinking problems with "health problems" in three of the scenarios the first ("Since John came to the Company"), third ("Fred has been quiet at work lately"), and fourth ("This is the fifth job that Bill has had"), and "emotional problems" in two (first and fourth). A stress problem correlated highly in one (third) scenario. There was no significant correlation in the scenarios with "home problem" or with "bored and tired of the job". Also, the fact that there was no correlation in Scenario two, where there was a clear-cut (most frequent) definition of an "alcohol problem" suggests the application of labels was more difficult in scenarios which could be considered only part of a larger health problem.

There was significant association with "drinking problems" in all scenarios to warrant their use in further analysis.

9.3 Principal Analysis

It was expected that there would be differences in both first level identification (Specificity of definition) and second level identification (Directness of Action Taken) with community and industry size and level of employment. As well, the intervening sociodemographic variables were examined for their effect on the dependent variables because of their close association with the independent variables. The composite variable "community/industry size" was used for most of the analysis; however, community size and industry size were examined independently when the composite
variable revealed an unbalanced interaction.

In an initial examination of the data it was found that the number of highly significant relationships was few; therefore, to explore the trends three levels of significance were considered, which were:

\[
\begin{align*}
P & \leq 0.05 \text{ Highly significant} \\
P & \leq 0.10 \text{ Moderately significant} \\
P & \leq 0.15 \text{ Weakly significant}
\end{align*}
\]

9.4 Specificity of Definition

The expectations relating to the first level dependent variable were:

(1) There would be greater "specificity of definition" of the problem in small communities than in large communities.

(2) There would be greater "specificity of definition" of the problem in small industries than in large industries.

(3) There would be greater "specificity of definition" of the problem at higher organizational levels than at lower levels.

To examine these expectations of first level identification, the dependent variable "specificity of definition" was finally operationalized (as indicated in Chapter Eight) as number of cues by type, categories of cues by type, and proportion of cues by type. The first two operationalized variables were subjected to tests of simple association with the explanatory (independent and intervening) variables. An analysis of variance and covariance with the proportion of cues of each type was then performed. This provided an understanding of how the proportion of cues of one type relative to other types which were presented by a respondent, varied with the
independent and intervening variables.

In presenting the findings the major concentration will be on the cues presented relating to the first individual recalled, where the respondent was asked to discuss the problem of an individual having a drinking problem, with whom he had a close relationship. The cues were elicited by a series of questions which followed the question, "Can you think of one person who is (has been) in your work group or area in the last five years?" Differences in the recall of cues, relating to the second individual or individual with a distant relationship to the respondent, and to the expected cues of the scenario--hypothetical situation--will also be presented. In the analysis of the proportion of cues, reference to cues by name will henceforth indicate the proportion of cues (e.g., behavioral cues will actually be referring to the proportion of behavioral cues to total cues).

1. **Number of Cues**

   **Range, Mean Number of Cues**

   The range in number of cues reported in Table 9.21 varied with each of the three sets of cues (Expected, First Individual, and Second individual recalled). As seen in Table 9.22, the mean number of cues (all types included) was highest in the expected (scenario) set of cues. The range in the number of cues for the types of cues (Appearance, Interpersonal, Behavior and Drinking) was the same for both "expected" (scenario) and First Individual recalled. In the second individual recalled the range in number of all types of cues was less.
### TABLE 9.21
**RANGE IN NUMBER OF EACH TYPE OF CUES BY SET OF CUES RECALLED**

<table>
<thead>
<tr>
<th>Type of Cues</th>
<th>Range in Expected (Scenario)</th>
<th>SET OF CUES</th>
<th>Range in First Individual (close)</th>
<th>Range in Second Individual (distant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>1 — 6</td>
<td>1 — 6</td>
<td>1 — 3</td>
<td></td>
</tr>
<tr>
<td>Interpersonal</td>
<td>1 — 4</td>
<td>1 — 4</td>
<td>1 — 3</td>
<td></td>
</tr>
<tr>
<td>Drinking</td>
<td>1 — 4</td>
<td>1 — 4</td>
<td>1 — 2</td>
<td></td>
</tr>
<tr>
<td>Behavior</td>
<td>1 — 5</td>
<td>1 — 5</td>
<td>1 — 4</td>
<td></td>
</tr>
<tr>
<td>Total Range</td>
<td>(for all types) 1 — 15</td>
<td>1 — 11</td>
<td>1 — 8</td>
<td></td>
</tr>
<tr>
<td>Mean # of cues</td>
<td>4.2</td>
<td>2.7</td>
<td>2.2</td>
<td></td>
</tr>
</tbody>
</table>

### TABLE 9.22
**MEAN NUMBER OF CUES FOR EACH TYPE BY SET OF CUES RECALLED**
(controlling for Place of Identification)

<table>
<thead>
<tr>
<th>Set of Cues Recalled</th>
<th>Type of Cues</th>
<th>Appearance</th>
<th>Interpersonal</th>
<th>Behavioral</th>
<th>Drinking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Expected (Scenario)</td>
<td>2.0</td>
<td>1.27</td>
<td>1.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>First Individual Recalled (close)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>1.8</td>
<td>1.26</td>
<td>1.43</td>
<td>1.33</td>
<td></td>
</tr>
<tr>
<td>Outside work</td>
<td>1.59</td>
<td>1.15</td>
<td>1.36</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>At work</td>
<td>2.10</td>
<td>1.38</td>
<td>1.46</td>
<td>1.28</td>
<td></td>
</tr>
<tr>
<td><strong>Second Individual Recalled (distant)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>1.74</td>
<td>1.38</td>
<td>1.47</td>
<td>1.48</td>
<td></td>
</tr>
<tr>
<td>Outside work</td>
<td>1.68</td>
<td>1.38</td>
<td>1.69</td>
<td>1.14</td>
<td></td>
</tr>
<tr>
<td>At work</td>
<td>1.76</td>
<td>1.38</td>
<td>1.45</td>
<td>1.25</td>
<td></td>
</tr>
</tbody>
</table>
Table 9.22 shows the mean number of cues identified for each type by set of cues recalled. In all sets of cues (except the first individual recalled (overall) and those reported outside of work), the mean number for each type of cue ranked in descending order of occurrence were: Appearance cues, Behavior cues, Interpersonal cues, and Drinking cues.

The general trend was for a greater number of cues to be identified at work. This generalization applied to the first individual recalled for all types of cues except drinking cues, and to the second individual recalled for all types of cues except interpersonal and behavioral cues. Simple t-tests were performed. Differences within sets (i.e., at work/outside of work), when considering all cues was found to be more significant than between sets (i.e., first individual/second individual) except with appearance cues.

Community/Industry Size Association with Number of Cues

Table 9.23 summarizes the significant associations of composite variable community/industry size with the number of cues. Concentrating on the first individual recalled, the only highly significant effects were seen when controlling for place of identification. At work, $\text{.44}^2$ (eta$^2$ or correlation ratio) indicated that 19 percent of the variation in the number of behavior cues was explained. The composite variable "community/industry size" showed moderately significant effects in explaining the number of interpersonal cues.

The number of significant relationships was increased in the same analysis with the second individual recalled. Moderately significant association existed when behavioral and drinking cues were identified outside of work.
### TABLE 9.23
SIGNIFICANT ASSOCIATIONS OF COMMUNITY/INDUSTRY SIZE WITH # OF CUES
(controlling for Place of Identification)

<table>
<thead>
<tr>
<th>Set of Cues Recalled</th>
<th>Place of Identification</th>
<th>Dependent Variable</th>
<th># of Cues</th>
<th>Eta</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected (Scenario)</td>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Outside Work</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>At work</td>
<td>Interpersonal</td>
<td>.49</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drinking</td>
<td>.64</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>1st Individual Recalled (close)</td>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Outside Work</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>At work</td>
<td>Interpersonal</td>
<td>.40</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Behavior</td>
<td>.44</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>2nd Individual Recalled (distant)</td>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Outside Work</td>
<td>Behavior</td>
<td>.33</td>
<td>.14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>At work</td>
<td>Drinking</td>
<td>.38</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interpersonal</td>
<td>.49</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Behavior</td>
<td>.40</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drinking</td>
<td>.64</td>
<td>.04</td>
<td></td>
</tr>
</tbody>
</table>

*No significant association*
and a highly significant association appeared when interpersonal and drinking cues were identified at work. Again, the clearest relationships were present when controlling for place of identification. Twenty-four percent of the number of interpersonal cues were explained and 40.1 percent of the number of drinking cues were explained.

In the Expected Situation (where cues were based on the selected scenario), a similar association was present with the number of interpersonal and number of drinking cues.

Table 9.24 presents the range and mean number of reported cues, where significant association was found with the composite variable "community/industry size." No single pattern in the relationship was apparent. The largest single mean number of interpersonal cues across all sets of cues was seen in the first individual identified in large community and small industry (L.S.). The mean number of interpersonal cues tended to be higher in the first individual identified, and this was apparent in small community/medium industry (S.M.). Large communities/small industries (L.S.), and large communities/medium industries (L.M.).

In the same table it can be seen that the number of drinking cues was found to have the highest mean number of cues in the second individual in large community/small industry (L.S.). With behavior cues the highest mean number of cues was found in the reporting of the second individual in large community/medium industry (L.M.); however, a high mean was found in four of the combinations of the composite variable community/industry size in the first individual identified.
TABLE 9.24
RANGE AND MEAN NUMBER OF CUES WITHIN DIMENSIONS OF COMPOSITE VARIABLE "COMMUNITY/INDUSTRY SIZE" WHEN RELATIONSHIP WAS SIGNIFICANT

<table>
<thead>
<tr>
<th>Set of Cues Recalled</th>
<th>Community/Industry Size</th>
<th>Interpersonal Range</th>
<th>Interpersonal Mean</th>
<th>Behavioral Range</th>
<th>Behavioral Mean</th>
<th>Drinking Range</th>
<th>Drinking Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected (Scenario)</td>
<td>SS</td>
<td>1-2</td>
<td>1.3</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>SM</td>
<td>1-2</td>
<td>1.1</td>
<td></td>
<td></td>
<td>1-2</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>LS</td>
<td>1-3</td>
<td>1.2</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>LM</td>
<td>1-4</td>
<td>1.1</td>
<td></td>
<td></td>
<td>1-3</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>LL</td>
<td>1-4</td>
<td>1.3</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>First Individual</td>
<td>SS</td>
<td>1-2</td>
<td>1.2</td>
<td>1-3</td>
<td>1.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recalled</td>
<td>SM</td>
<td>1-2</td>
<td>1.5</td>
<td>1-2</td>
<td>1.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LS</td>
<td>1-3</td>
<td>1.8</td>
<td>1-2</td>
<td>1.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LM</td>
<td>1-4</td>
<td>1.5</td>
<td>1-5</td>
<td>1.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LL</td>
<td>1-2</td>
<td>1.1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second Individual</td>
<td>SS</td>
<td>1</td>
<td>1</td>
<td>1-4</td>
<td>1.7</td>
<td>1-2</td>
<td>1.2</td>
</tr>
<tr>
<td>Recalled</td>
<td>SM</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>LS</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1-2</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>LM</td>
<td>1-3</td>
<td>1.4</td>
<td>1-4</td>
<td>1.8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>LL</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1-2</td>
<td>1.6</td>
</tr>
</tbody>
</table>
Level of Employment Association with Number of Cues

For the first individual identified, the average number of cues differed for each level of employment. For example, 36 percent of hourly employees, compared with 20.3 percent of top management and 10 percent of middle management, identified two or more cues.

Table 9.25 shows that level of employment had fewer significant relationships with number of cues than did the variable "community/industry size." No significant association was found with the number of cues recalled for the first individual. However, an apparent trend was for top management to identify a greater number of appearance cues and hourly employees to identify a greater number of drinking cues.

When controlling for place of identification with the second individual identified, weak association was found with behavior cues. Outside work 43 percent of top management, 36 percent of middle management, and only 15 percent of hourly employees identified two or more cues.

Table 9.26 presents the range and mean number of cues when significant relationships existed with level of employment. Again, no clear pattern was found. There was a trend for top management to present a greater number of cues more frequently. The greatest extreme in mean number of cues of all types of cues was found with behavior cues in the second individual identified. (Top management presented an average of 1.7 behavior cues compared with the presentation of only one by middle management and hourly employees.)
TABLE 9.25
SIGNIFICANT ASSOCIATIONS OF LEVEL OF EMPLOYMENT WITH NUMBER OF CUES
(controlling for Place of Identification)

<table>
<thead>
<tr>
<th>Set of Cues</th>
<th>Place of Identification</th>
<th>Dependent Variable</th>
<th>(# of Cues)</th>
<th>Eta</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected (Scenario)</td>
<td>Overall Outside work</td>
<td>Appearance</td>
<td>.16</td>
<td>.08</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drinking</td>
<td>.12</td>
<td>.14</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Overall At work</td>
<td>Appearance</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drinking</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>1st Individual Recalled (close)</td>
<td>Overall Outside Work</td>
<td>Appearance</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drinking</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>2nd Individual Recalled (distant)</td>
<td>Overall Outside work</td>
<td>Behavior</td>
<td>.33</td>
<td>.14</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>At work</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

*No significant association

TABLE 9.26
RANGE AND MEAN NUMBER OF CUES WITHIN CATEGORIES OF LEVEL OF EMPLOYMENT
WHEN RELATIONSHIP WAS SIGNIFICANT

| Set of Cues | Level of Employment | Appearance | | | Behavior | | | Drunking | |
|-------------|---------------------|------------|-----|-------------|------------|-----|-------------|-----------|
| | | Range | Mean | | Range | Mean | | Range | Mean |
| Expected | Top | 1-6 | 2 | | | | 1-2 | 1.1 |
| | Middle | 1-5 | 1.6 | | | | 1-3 | 1.2 |
| | Hourly | 1-5 | 1.7 | | | | 1-2 | 1 |
| 2nd Individual Recalled | Top | | | 1-3 | | 1.7 | | |
| | Middle | | | 1 | | 1 | | |
| | Hourly | | | 1 | | 1 | | |
Intervening Variable Association with Number of Cues

Table 9.27 shows that there were highly significant relationships for the first individual recalled with the intervening variables "principal language" and "distance" (between identifier and identified). In general, those speaking English presented more cues. In the significant association of "distance" with both appearance and drinking cues, which was seen at work, a greater number of both appearance and drinking cues was seen at a (-1) level where the individual identified was one level above the respondent.

In the second individual recalled, at work, the variable "principal language" gave an explanation of $0.46^2$ (correlation coefficient equal to 17.6 percent. In this case, those whose principal language was English presented a mean number of only 1.5 cues as compared with a mean 2.1 for those whose first language was not English.

The variables "principal language" and "distance" showed no significant relationships with the number of cues in the expected situation.

Summary - Number of Cues

A definite pattern in the overall ranking of cues appeared. Based on the mean number of cues the general pattern of ranking was as follows:

- Appearance cues
- Behavior cues
- Interpersonal cues
- Drinking cues

This pattern was present in all sets of drinking cues, regardless of where they were identified, except those reported for the first individual outside of work.
TABLE 9.27

SIGNIFICANT EFFECTS BY INTERVENING VARIABLES ON NUMBER OF CUES
(controlling for Place of Identification)

<table>
<thead>
<tr>
<th>Set of Cues Recalled</th>
<th>Place of Identification</th>
<th>Dependent Variable # of Cues</th>
<th>Intervening Variable</th>
<th>Eta</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected (scenario)</td>
<td>Overall</td>
<td>Appearance</td>
<td>Distance</td>
<td>.24</td>
<td>.004</td>
</tr>
<tr>
<td></td>
<td>Outside work</td>
<td>Behavior</td>
<td>Principal Language</td>
<td>.31</td>
<td>.03</td>
</tr>
<tr>
<td></td>
<td>At Work</td>
<td>Drinking</td>
<td>Distance</td>
<td>.26</td>
<td>.006</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>1st Individual</td>
<td>Overall</td>
<td>Appearance</td>
<td>Distance</td>
<td>.35</td>
<td>.000</td>
</tr>
<tr>
<td>Recalled (close)</td>
<td>Outside work</td>
<td>Drinking</td>
<td>Distance</td>
<td>.42</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>At work</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Individual</td>
<td>Overall</td>
<td>Appearance</td>
<td>Principal Language</td>
<td>.31</td>
<td>.007</td>
</tr>
<tr>
<td>Recalled (distant)</td>
<td>Outside work</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>At work</td>
<td>Appearance</td>
<td>Principal Language</td>
<td>.42</td>
<td>.04</td>
</tr>
</tbody>
</table>

*No significant association.
Each independent variable produced slightly different effects in the "number of cues." A single pattern could not be described with the composite variable community/industry size. A clearer pattern of interaction was apparent with the variable level of employment, which had its strongest interaction with appearance and drinking cues. In most instances, controlling for place of identification, and selecting for the second individual increased the number of significant interactions with the dependent variable.

The intervening variables "principal language" and "distance" (between identifier and identified) showed several significant interactions. "Principal language" had significant interactions with the number of cues reported for both individuals recalled, but with different types of cues for each individual. There was a general trend for individuals whose principal language was English to present more cues. An exception was found with appearance cues reported in the second individuals. "Distance" had significant interactions only with the number of cues reported for the first individual. The general trend with distance was for a greater number of cues to be reported at a (-1) level (where identified was one level above respondent).

2. Categories of Cues by Type

Tables 9.28 and 9.29 show the categories of each type of cue for both individuals reported. In presenting the findings a description of the frequencies with which the cues were presented will follow a brief description of the levels of significance which were found. As the data were insubstantial, it was not possible to describe the associations with all of the explanatory variables.
### TABLE 9.28

Type of Cues (Showing Categories) by Set of Cues When Identified Outside of Work

<table>
<thead>
<tr>
<th>Type of Cue</th>
<th>Set of Cues</th>
<th>Grooming</th>
<th>Eyes</th>
<th>Face</th>
<th>Movement</th>
<th>Tired</th>
<th>Speech</th>
<th>Smell on Breath</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F* Column %</td>
<td>F Column %</td>
<td>F Column %</td>
<td>F Column %</td>
<td>F Column %</td>
<td>F Column %</td>
<td>F Column %</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>1st individual</td>
<td>16 (29.6)</td>
<td>10 (18.5)</td>
<td>12 (22.2)</td>
<td>5 (9.3)</td>
<td>8 (14.8)</td>
<td>1 (1.9)</td>
<td>2 (3.5)</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>2nd individual</td>
<td>16 (34.0)</td>
<td>3 (6.4)</td>
<td>10 (21.3)</td>
<td>9 (19.2)</td>
<td>7 (14.9)</td>
<td>2 (4.3)</td>
<td>--</td>
<td>47</td>
</tr>
<tr>
<td>Interpersonal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hypo Column %</td>
<td>Hyper Column %</td>
<td>Aggressive Column %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1st individual</td>
<td>9 (37.5)</td>
<td>4 (16.7)</td>
<td>11 (45.8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>2nd individual</td>
<td>4 (22.2)</td>
<td>4 (22.2)</td>
<td>10 (55.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Behavioral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Family/Home</td>
<td>F Column %</td>
<td>Accident/ Sickness Column %</td>
<td>Trouble with law Column %</td>
<td>Financial Column %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1st individual</td>
<td>5 (41.7)</td>
<td>3 (25.0)</td>
<td>3 (25.0)</td>
<td>1 (8.3)</td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>2nd individual</td>
<td>6 (46.1)</td>
<td>2 (15.4)</td>
<td>5 (38.5)</td>
<td>--</td>
<td>--</td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Drinking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The act of Drinking</td>
<td>F Column %</td>
<td>The knowledge of Drinking Column %</td>
<td>Knowledge of Side Effects Column %</td>
<td>Noted Change Column %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1st individual</td>
<td>4 (11.1)</td>
<td>23 (63.9)</td>
<td>6 (10.7)</td>
<td>3 (9.3)</td>
<td></td>
<td></td>
<td></td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>2nd individual</td>
<td>23 (47.9)</td>
<td>23 (47.9)</td>
<td>1 (2.1)</td>
<td>1 (2.1)</td>
<td></td>
<td></td>
<td></td>
<td>48</td>
</tr>
</tbody>
</table>

*F = Frequency
<table>
<thead>
<tr>
<th>Type of Cue</th>
<th>Set of Cues</th>
<th>Grooming</th>
<th>Eyes</th>
<th>Face</th>
<th>Movement</th>
<th>Tired</th>
<th>Speech</th>
<th>Smell on Breath</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F Column %</td>
<td></td>
<td>F Column %</td>
<td></td>
<td>F Column %</td>
<td></td>
<td>F Column %</td>
</tr>
<tr>
<td>Appearance</td>
<td>1st individual</td>
<td>17 (16.8)</td>
<td>17 (16.8)</td>
<td>13 (12.3)</td>
<td>13 (12.3)</td>
<td>16 (15.1)</td>
<td>9 (8.5)</td>
<td>20 (18.9)</td>
</tr>
<tr>
<td></td>
<td>2nd individual</td>
<td>11 (22.5)</td>
<td>9 (18.4)</td>
<td>6 (12.3)</td>
<td>7 (14.3)</td>
<td>8 (16.3)</td>
<td>4 (8.2)</td>
<td>4 (8.2)</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>Approach Behavior Hypo</td>
<td>F Column %</td>
<td></td>
<td>F Column %</td>
<td></td>
<td>Aggressive Behavior</td>
<td>F Column %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1st individual</td>
<td>10 (41.9)</td>
<td>4 (12.9)</td>
<td>12 (45.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd individual</td>
<td>7 (35.0)</td>
<td>3 (15.0)</td>
<td>10 (50.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior</td>
<td>Low Quantity Work</td>
<td>F Column %</td>
<td></td>
<td>Low Quality Work</td>
<td>F Column %</td>
<td>Disorganized Work</td>
<td>F Column %</td>
<td>Carelessness (at work)</td>
</tr>
<tr>
<td></td>
<td>1st individual</td>
<td>10 (13.2)</td>
<td>12 (15.8)</td>
<td>8 (10.5)</td>
<td>11 (14.4)</td>
<td>5 (6.6)</td>
<td>18 (23.7)</td>
<td>12 (15.8)</td>
</tr>
<tr>
<td></td>
<td>2nd individual</td>
<td>8 (19.0)</td>
<td>1 (16.7)</td>
<td>2 (4.8)</td>
<td>7 (16.7)</td>
<td>1 (2.4)</td>
<td>14 (33.3)</td>
<td>3 (7.1)</td>
</tr>
<tr>
<td>Drinking</td>
<td>The Act of Drinking</td>
<td>F Column %</td>
<td></td>
<td>Knowledge of Drinking</td>
<td>F Column %</td>
<td>Knowledge of Side Effects</td>
<td>F Column %</td>
<td>Noted Change</td>
</tr>
<tr>
<td></td>
<td>1st individual</td>
<td>15 (34.1)</td>
<td>22 (50.0)</td>
<td>3 (6.9)</td>
<td>4 (9.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd individual</td>
<td>11 (34.4)</td>
<td>15 (46.9)</td>
<td>2 (6.2)</td>
<td>1 (12.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*F = Frequency
Community/Industry Size Association with Categories of Cues by Type

With the first individual recalled, moderately significant relationships were found between the variable "community/industry size" and categories of cues by type. 13.7 percent of the variation within type of interpersonal cues and 8.4 percent of the variation within types of drinking cues were explained at .08 and .09 levels of significance, respectively. These effects were only seen when all cues were considered together and were absent when controlling for place of identification.

Level of Employment Association with Categories of Cues by Type

No significant association was seen with level of employment and categories of cues by type.

Educational Level Association with Categories of Cues by Type

In the first individual recalled, significant association was seen in the level of employment when controlling for educational level. Twenty-eight percent of variation in type of appearance cues was explained, at high significance in cues presented by respondents with university or technical education. Moderately significant relationships appeared where 12.9 percent of behavior cues and 11 percent of drinking cues were explained in respondents with university or technical education.

In the second individual recalled, only moderately significant effects were seen when controlling for educational level and only with drinking cues.
In this case, respondents with elementary education provided 44.9 percent explanation for the variation in drinking cues, respondents with university education provided 30.3 percent explanation for the variation in drinking cues.

**Place of Identification Association with Categories of Cues by Type**

The effects of the variable "place of identification" on categories of cues by type, as shown in Tables 9.28 and 9.29, were only examined for the observed individuals, because of limitations of the interview schedule. The testing of significance for categories within each type of cue presented in Tables 9.28 and 9.29 was difficult because of the variation in proportion presented. Trends, however, were apparent.

(a) **Appearance Cues**

In the first individual recalled (outside of work) grooming cues were reported most frequently, representing 7.6 percent of all categories of "appearance" cues. Reporting of "facial" and "eye" cues represented 22.2 percent and 18.5 percent of all categories respectively. Reports, outside of work, of "movement," "tiredness," "voice" and "smell on breath" categories of cues were low. At work, in the first individual recalled, "smell on breath" represented 18.9 percent of all categories of appearance cues, followed by "grooming" cues (16.9 percent), "eye" cues (16.8 percent), and "tiredness" (16.3 percent). "Facial" and "movement" categories were low.

In the second individual recalled, outside of work, there was an increased reporting of "grooming" cues (34 percent) and "movement" (19.2 percent) with a corresponding decrease in the notice of "eyes." At work, all
appearance cues categories were in the same general proportion except "smell on breath," which was significantly lower, representing 8.16 percent of all types of categories compared with 18.8 percent of all categories of cues in the first individual recalled.

(b) **Interpersonal Cues**

Interpersonal cues for both individuals recalled were in the same general proportion when identified at work and outside of work. In both individuals the extremes of "hypo" and "aggressive" behavior accounted for more than 80 percent of all interpersonal cues. There was a trend to more aggression cues reported in the second individual recalled. 50 percent of all interpersonal cues were "aggression."

(c) **Behavioral Cues**

(1) **Outside of Work**

In both individuals recalled the greatest number of behavior cues were "family and home problems," which contributed 41.7 percent and 46.1 percent of all categories of behavior cues, respectively, in the first and second individuals recalled. In the first individual there was a greater proportion of "accidents or sickness" (25 percent) reported, compared with 15 percent of the same categories in the second individual. At the same time, there was a lower proportion of "problems with the law" (25 percent) in the first individual compared with 38.5 percent of behavioral cues in the second individual recalled.
At Work

"Absenteeism (unspecified)" was the most frequently recalled behavior cue at work for both individuals, representing 23.7 percent of all cues in the first and 33.3 percent in the second individual. In the first individual a total of 41.1 percent of all behavior cues reported were related to the three types of absenteeism and in the second individual 42.8 percent of all behavior recalled related to the three types of absenteeism.

In the first individual recalled, all other work behaviors, including "quality of work," "quantity of work," "disorganization" and "carelessness," as reported varied within a range of five percentage points. In the second individual recalled, "low quantity work" (representing 19 percent of all categories of behavior) was greater, and "disorganized" behavior (4.8 percent of all categories of behavior) was less.

Drinking Cues

In the first individual recalled observations of the act of drinking represented 34 percent of all categories of drinking cues at work, and 11.1 percent of all categories outside of work. There was less awareness of the more indirect measure, "knowledge of the side effects," at work than outside work, (6.9 percent reported at work compared with 16.7 percent of all drinking cues outside of work). More than half of all drinking cues, both at work and outside of work, were "knowledge of the act of drinking."

In the second individual recalled, the same general proportion of cues was present. The observation of "the act of drinking" was more frequently
reported outside of work and represented 47.9 percent of all drinking cues for the second individual, compared with 34.4 percent at work.

3. **Type of First Cues**

The proportion in which cues were presented was first compared to the proportion of the presentation of all cues.

With the first individual, at work, the proportion of "grooming" cues (23.7 percent) was elevated and cues related to "eyes" (8.5 percent) were lowered. The proportion of observed "acts of drinking" (6.3 percent) was lowered and the proportion of "knowledge of the act" (71.9 percent) was elevated. Of the interpersonal cues 'hyper' behavior (25 percent) was elevated and 'hypo' behavior was lowered. With work behavior cues "quantity of work" (7.1 percent), "disorganization" (7.1 percent), and "carelessness" (7.1 percent) were lowered whereas "quality of work" (21.4 percent), "absent but at work" (7.1 percent) and "unspecified absenteeism" (7.1 percent) were elevated.

Outside of work elevations as reported were seen in the following appearance cues: "Grooming" (31.7 percent), "eyes" (14.6 percent), "face" (21.9 percent). There was a lowered proportion of "movement" cues (9.8 percent).

In the second individual the following elevations in proportion of first cues as reported at work appeared: Appearance cues--"tiredness" (20 percent), interpersonal cues--"Hypo" (42.9 percent). Lower proportions of drinking cues were reported as "the act" (37.5 percent).
(40 percent), and "Facial" (20 percent, and a lower proportion of first cues was seen—"Movement" (13.3 percent) and "Tiredness" (13.5 percent) appearance cues.

Further comparisons are limited because of the low response rate in some cell categories.

**Summary - Type of Cues**

The significant association of the independent variables with "type and category of cues" was not as clear as with "number of cues". The significance appeared to be reduced by the number of values levels in each variable.

Patterns in the presentation of each type of cue could, however, be described. The categories of "appearance" cues differed with individual recalled and place of identification. In particular, the prominence of "grooming" and "smell on breath" cues was frequently reversed by the effect of "place of identification" and individual recalled. The most prominent behavioral cue outside of work was "family and home problems" whereas at work the most prominent was "absenteeism." The variation that was observed in cues which were reported less frequently appeared to be affected by level of employment. Categories of drinking cues varied with place of identification and individual recalled.

There were differences noted in the proportion of cues when the order of presentation was taken into account by examining the proportion of first cues. Of all the cues "grooming" and "facial" cues were presented as first cues most consistently. The pattern of first cues varied when controlling for place of identification, and with set of cues being examined.
4. Proportion of Cues

The analysis of variance with the dependent variable "proportion of cues," allowed for the examination of the interaction effects with the independent variables "community/industry size" and "level of employment," and the intervening variables "principal language" and "interviewer". The analysis of covariance examined the same variables along with the metric intervening variables "age," "length of time in north," and "educational level."

The analysis of variance and covariance with the proportion of cues relating to the recalled individuals was performed for all cases as well as controlling for place of identification. As with the analysis of number and type of cues, three levels of significance will be used:

- $P \leq .05$ Highly Significant
- $P \leq .10$ Moderately Significant
- $P \leq .15$ Weakly Significant

To avoid confusion the reader should be aware that in this portion of the analysis there will be reference to the percent of variance explained as well as the percentage points difference in variation per unit of independent variable. The former refers to the percent of variation in the dependent variable explained by all variables acting together. The latter refers to the size of the variation in the dependent variable "proportion of cues" produced by one unit change in the independent variable.
Community/Industry Size

In the first individual, community/industry size was noted to have a highly significant relationship in the analysis of variance with appearance cues. This variation was noted only at work. In the analysis of covariance the same effects were seen with only moderate significance. In the analysis of variance, 9.1 percent of the variance in appearance cues was explained by the main independent variables outside work and 15.5 percent was explained at work. In the analysis of covariance 13.9 percent of the variance outside work and 17.9 percent of the variance at work was explained by the model including independent variables and covariates. Details of the proportion of variance explained in appearance cues can be seen in Table 9.30.

In the second individual recalled, the composite variable "community/industry size" had a highly significant relationship with interpersonal clues when all cues were considered together. This significant relationship was reduced to moderate significance when controlling for place of identification. However, moderately significant effects were seen in behavioral and appearance cues identified "outside work." In the analysis of covariance the covariates "age" and "time in north" increased the significance of variation. When controlling for "place of identification," moderately significant effects became apparent with drinking cues outside work, and both appearance and drinking cues at work. A comparison of the analysis of variance and covariance for the second individual (when identification was outside of work) where best explanation was provided with interpersonal cues can be seen in Table 9.31.
Industry Size

The variable "industry size," when substituted for the composite variable "community/industry size" in the analysis of variance and covariance produced only weakly significant effects. The same result occurred with the second individual recalled. A multiple classification analysis, however, showed a clear pattern of extremes between large and small industries' contribution to the explanation of the proportion of cues which was present when using the composite variable.

The size (percent difference in variation) in "proportion of cues" produced by one unit of industry size, when adjusted for covariates, can be seen in Table 9.32. The "percent points difference" in proportion of cues was developed from Multiple Classification Analysis table by subtracting the negative extreme from the positive extreme in the value deviations of independent variables. The first line of Table 9.32 would indicate that at work a unit of industry size would produce a difference of 18.6 percentage points between medium and small industries. In other words, there would be 18.6 percentage points more appearance cues relative to all cues presented in medium sized industries than those in small industries. In large industries there would be a lower proportion of "appearance" cues presented than in medium sized industries, but a higher proportion than in small industries.

It can also be seen in Table 9.32 that the extremes (+ve, -ve) were found at the end points of the variable (small industry-large industry) with the proportion of "interpersonal" and "drinking" cues; however, the extremes
### TABLE 9.30
PROPORTIONS OF VARIANCE EXPLAINED (MULTIPLE R²) IN APPEARANCE CUES BY MODEL

<table>
<thead>
<tr>
<th>Place of Identification</th>
<th>Multiple R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside work</td>
<td></td>
</tr>
<tr>
<td>A. of V.</td>
<td>9.1</td>
</tr>
<tr>
<td>A. of C.v.</td>
<td>13.9</td>
</tr>
<tr>
<td>At work</td>
<td></td>
</tr>
<tr>
<td>A. of V.</td>
<td>15.5</td>
</tr>
<tr>
<td>A. of C.v.</td>
<td>17.9</td>
</tr>
</tbody>
</table>

### TABLE 9.31
PROPORTION OF VARIANCE EXPLAINED (MULTIPLE R²) IN INTERPERSONAL CUES BY MODEL

<table>
<thead>
<tr>
<th>Place of Identification</th>
<th>Multiple R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside work</td>
<td></td>
</tr>
<tr>
<td>A. of V.</td>
<td>22.0</td>
</tr>
<tr>
<td>A. of C.v.</td>
<td>35.8</td>
</tr>
</tbody>
</table>

### TABLE 9.32
SIZE OF VARIATION (% POINTS DIFFERENCE) IN PROPORTION OF CUES PER UNIT OF INDUSTRY SIZE

<table>
<thead>
<tr>
<th>A</th>
<th>% Points Difference (overall)</th>
<th>% points Difference (at work)</th>
<th>Extremes Present (at work and Overall)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>8.4</td>
<td>18.6</td>
<td>+ Medium Industry - Small Industry</td>
</tr>
<tr>
<td>Behavioral</td>
<td>1.9</td>
<td>4.2</td>
<td>- Medium Industry + Large Industry</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>5.5</td>
<td>8.9</td>
<td>+ Small Industry - Large Industry</td>
</tr>
<tr>
<td>Drinking</td>
<td>13.3</td>
<td>12.6</td>
<td>+ Small Industry - Large Industry</td>
</tr>
</tbody>
</table>
were found within the variable (i.e., between medium-sized industry and either large- or small-sized industry) in "appearance" and "behavior" cues. The sign indicates that an inverse relationship in the proportion of "interpersonal" and "drinking" cues/all cues occurred with industry size. In other words, the proportion of "interpersonal" and "drinking" cues was larger in small industries.

**Community Size**

Community size, when operationalized on three dimensions—small, medium and large—rather than on two dimensions—small and medium—generally provided a clearer pattern of variation. This indicates that there was perhaps poor operationalization of the variable when only two dimensions were present.

Presented in Table 9.33 is the size of variation in percentage points per unit of community size, when adjusting for covariates in the four operationalizations of the dependent variable "proportion of cues." As seen from the table, at work there were even greater differences produced by the variable "community size" (31.1 percentage points with "appearance" cues). In all cases the extremes were at the end points of the variable (small community—large community). There was direct variation with community size in "behavior," "interpersonal" and "drinking" cues and an inverse variation in "appearance" cues. From the table it can be seen that the same pattern was not always present when not selecting for place of identification. The differences were not as great except for the proportion of drinking cues. As well, patterns between the ends of the variable (small community—large
community) was not seen with the proportion of "appearance" cues. An inverse relationship with the proportion of "behavioral" cues was also present.

**Level of Employment**

With the first recalled individual in the analysis of variance by level of employment there was a weakly significant interrelationship seen in the variation of "appearance" cues (overall). When controlling for place of identification this pattern changed. Highly significant effects were seen in variation of "drinking" cues (outside of work). The introduction of covariates reduced the significant effects, yet, in the case of the first individual recalled, the analysis showed improved explanation for model when adjusting for the covariates.

In the second individual recalled, moderately significant effects were seen with interpersonal cues (at work) in the analysis of variance. With the introduction of covariates the significance of this variance was reduced; however, highly significant relationships appeared with the covariate "age" on drinking cues at work.

Table 9.35 shows the size of variation in dependent variable in "proportion of cues" per unit of level of employment. As can be seen from the table, when selecting for cues identified at work there was a direct relationship in the proportion of "appearance," "behavior," and "interpersonal" cues with level of employment.

With drinking cues this clear relationship was not seen. The percentage difference in variation produced by level of employment was greatest with interpersonal cues. When the proportions were considered (overall), not selecting
### TABLE 9.33
SIZE OF VARIATION (% POINTS DIFFERENCE) IN PROPORTION OF CUES PER UNIT OF COMMUNITY SIZE

<table>
<thead>
<tr>
<th>% Points Difference (overall)</th>
<th>% Points Difference (at work)</th>
<th>Extremes Present (Overall)</th>
<th>Extremes Present (at work)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>9.1</td>
<td>31.1</td>
<td>- Medium Industry</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+ Small Industry</td>
</tr>
<tr>
<td>Behavior</td>
<td>2.0</td>
<td>7.7</td>
<td>+ Small Industry</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Large Industry</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>8.2</td>
<td>17.1</td>
<td>- Small Industry</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+ Large Industry</td>
</tr>
<tr>
<td>Drinking</td>
<td>8.2</td>
<td>6.0</td>
<td>- Small Industry</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+ Large Industry</td>
</tr>
</tbody>
</table>

### TABLE 9.34
PROPORTION OF VARIANCE EXPLAINED IN APPEARANCE CUES BY MODEL

<table>
<thead>
<tr>
<th>Place of Identification</th>
<th>Multiple R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside Work</td>
<td>A. of V.</td>
</tr>
<tr>
<td></td>
<td>14.0</td>
</tr>
<tr>
<td></td>
<td>A. of C.v.</td>
</tr>
<tr>
<td></td>
<td>18.4</td>
</tr>
</tbody>
</table>

### TABLE 9.35
SIZE OF VARIATION (% POINTS DIFFERENCE) IN PROPORTION OF CUES PER UNIT OF LEVEL OF EMPLOYMENT

<table>
<thead>
<tr>
<th>% Points Difference Overall</th>
<th>% Points Difference At work</th>
<th>Extremes Present (Overall)</th>
<th>Extremes Present (at work)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>11.0</td>
<td>8.8</td>
<td>+ Top Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Hourly</td>
</tr>
<tr>
<td>Behavior</td>
<td>6.0</td>
<td>8.2</td>
<td>+ Top Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Hourly</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>4.7</td>
<td>15.6</td>
<td>+ Top Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Hourly</td>
</tr>
<tr>
<td>Drinking</td>
<td>9.7</td>
<td>4.0</td>
<td>- Top Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+ Hourly</td>
</tr>
</tbody>
</table>
for place of identification, greater differences occurred in the proportion of "appearance" and "drinking" cues. As well, an inverse relationship with level of employment developed in relation to the proportions of "behavior" and "drinking" cues.

Intervening Variable Association with Proportion of Cues

**Age**

In the first individual recalled "age" was noted to have a moderately significant association with variation with "appearance," "behavior" and "drinking" cues when all cues were considered together. Age also had a significant association outside of work when controlling for place of identification. A description of the size of interaction with the covariates was not readily available within the statistical package used.

**Length of Time in North**

The variable "length of time in the north" did not have any significant variation with the first individual recalled. In the second individual recalled, this variable had a highly significant association in variation with inter-personal and drinking cues outside of work, when controlling for place of identification.

**Principal Language**

The variable "principal language" for the first individual recalled had moderately significant association in variation with "appearance" cues when all cues were considered together, and at work when controlling for place of identification. As well, there was significance in variation with behavioral
cues at home. The covariates "age" and "time in north" when interacting with "principal language" increased the significance with the abovementioned cues.

"Principal language" had no significant variation with the proportion of cues for the second individual recalled.

Interaction Effects Between Independent Variables

The composite variable "community/industry size" had highly significant interactive effects with the second independent variable, "level of employment," in the analysis of variance, both for all interpersonal cues considered together and when controlling for place of identification. The interactive effects were slightly reduced in the analysis of covariance.

Moderately significant two-way interactive effects between the same two variables were apparent with "appearance" cues (outside of work) and "drinking" cues (at work). The introduction of covariates "age" and "time in north" removed the interaction effects between the composite variable and level of employment; however interaction effects were increased by the same model in the analysis of the proportion of drinking cues "at work."

"Principal language" and "interviewer," regarded in the analysis as intervening variables, but inserted as independent variables in the model, did not appear to present any interactive effects in the analysis of variance. In the analysis of covariance with drinking cues "principal language" showed moderately significant interaction with industry size. This effect was removed when controlling for place of identification.
Summary - Proportion of Cues

The dependent variable "proportion of cues" varied with the independent variables "community/industry size" and "level of employment." The variation was also affected by place of identification and individual recalled. "Community/industry size" showed no variation with "drinking" cues as did "level of employment."

By treating the composite variable as two independent variables, "community size" and "industry size," more distinct effects were produced, suggesting that the composite variable operationalized on the basis of two sizes of community and three sizes of industry was inadequate.

In the examination of the size of variation in the proportion of cues, the largest variation (percentage points difference) was produced with "community size" and the smallest variation with "level of employment."

When selecting for identification at work, community size produced the greatest number of direct relationships.

Of the intervening variables, "age" showed most variation with the dependent variable. "Principal language" affected the variation in approximately half of the models examined. "Length of time in north" produced significant effects only when with second individual identified.

Interaction effects between the two independent variables were noted with all types of cues except "behavioral" cues. These interaction effects were altered by "place of identification" (generally increased at work) and with second individual identified. There were no interaction effects between variable "interviewer" and other independent or intervening variables.
9.4 Directness of Action Taken

The expectations, which were modified for the analysis of the second level identification were as follows:

(4) More direct action would be taken in large communities than in small communities.

(5) More direct action would be taken in large industries than in small industries.

(6) There would be more direct action taken at higher organizational levels.

These expectations of the Second Level of Identification were examined by operationalizing "Directness of Action" as type of first and second action.

For most of the analysis type of action was subdivided into three subtypes which were: (a) Discussion, (b) Direct Action, and (c) Considered Action. Frequently, the first two subtypes will be considered apart from Considered Action, and will be referred to together as "purposeful action."

As well, categories of action within the first two subtypes were examined. No categorization of "considered action" was developed.

The number of actions within each cell did not, in most cases, allow for testing of significance of relationship with specific types of action. For this reason concentration in this section of the analysis was on differences between the first and second actions. In addition to an examination of associations of action taken with independent and intervening variables, the association of "specificity of definition" (First Level Identification) with the variable "proportion of cues" was also examined. Statistics based on Chi Square were the principal methods of testing association and correlation.
To compare variables of similar dimensions and degrees of freedom, a comparison of contingency coefficients was used.

(1) **Type of First Action**

(a) **Community/Industry Size Association with First Action**

There was no significant association of the composite variable "community/industry size" with type of first action; therefore, for most of the analysis the composite variable was treated as two separate variables, "community size" and "industry size."

**Tables 9.36 to 9.38** - As seen in Table 9.36, showing the three subtypes of action, there was a greater proportion of "direct action" taken in larger communities. When selecting for place of identification some differences were apparent. In small communities the amount of purposeful action (considering both discussion and direct action, but excluding considered action) was approximately equal regardless of whether identification was outside of work or at work. In large communities, although in the same proportion, the amount of purposeful action was 1.3 times greater at work than outside work. As well, in smaller communities there was more likelihood of considering action but doing nothing than in larger communities, and this was greatest when identification was made at work. From Tables 9.37 and 9.38 it can be seen that considered action represents 41.2 percent and 16.7 percent of all behavior at work in small and large communities respectively.
### TABLE 9.36
COMMUNITY SIZE BY TYPE OF FIRST ACTION

<table>
<thead>
<tr>
<th>Community Size</th>
<th>Discussion</th>
<th>Direct Action</th>
<th>Considered Action</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Row %</td>
<td>N</td>
<td>Row %</td>
</tr>
<tr>
<td>Small</td>
<td>8</td>
<td>(17.8)</td>
<td>20</td>
<td>(44.4)</td>
</tr>
<tr>
<td>Large</td>
<td>10</td>
<td>(13.3)</td>
<td>51</td>
<td>(68.0)</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>(15.0)</td>
<td>71</td>
<td>(59.2)</td>
</tr>
</tbody>
</table>

$\chi^2 = 6.98$  Significance  .03

### TABLE 9.37
COMMUNITY SIZE BY TYPE OF FIRST ACTION CONTROLLING FOR PLACE OF IDENTIFICATION (outside of work)

<table>
<thead>
<tr>
<th>Community Size</th>
<th>Discussion</th>
<th>Direct Action</th>
<th>Considered Action</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Row %</td>
<td>N</td>
<td>Row %</td>
</tr>
<tr>
<td>Small</td>
<td>3</td>
<td>(14.3)</td>
<td>10</td>
<td>(47.8)</td>
</tr>
<tr>
<td>Large</td>
<td>2</td>
<td>(11.1)</td>
<td>15</td>
<td>(77.8)</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>(12.8)</td>
<td>24</td>
<td>(61.5)</td>
</tr>
</tbody>
</table>

$\chi^2 = 4.26$  Significance  .11

### TABLE 9.38
COMMUNITY SIZE BY TYPE OF FIRST ACTION CONTROLLING FOR PLACE OF IDENTIFICATION (at work)

<table>
<thead>
<tr>
<th>Community Size</th>
<th>Discussion</th>
<th>Direct Action</th>
<th>Considered Action</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Row %</td>
<td>N</td>
<td>Row %</td>
</tr>
<tr>
<td>Small</td>
<td>3</td>
<td>(17.6)</td>
<td>17</td>
<td>(41.2)</td>
</tr>
<tr>
<td>Large</td>
<td>5</td>
<td>(10.4)</td>
<td>35</td>
<td>(72.9)</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td></td>
<td>42</td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2 = 5.76$  Significance  .06
(b) Level of Employment Association with Type of First Action

Tables 9.39 and 9.40 - Table 9.39 shows a moderately significant interaction of level of employment with first action. Table 9.40 showing first action at work, reveals that a larger proportion of purposeful action (discussion and directed action) was taken by management (both top and middle). However, there was a greater proportion of considered action among hourly employees, and slightly lower proportion of considered action among the middle management group. Middle management took least "direct action" and had more "discussed actions" than top management.

(c) Intervening Variable Association with Type of First Action

Age

Age showed a moderately significant relationship to amount of purposeful action taken. There was direct variation in the amount of action with "age" except with the youngest age group (under age 20) who took no action and did not contemplate action. Of all purposeful action taken, the 21-30 age group took 30.6 percent, and the 41-65 age group took 40.8 percent. An approximately equal number of individuals were present within each age group.

Length of Time in North

A highly significant difference showing the effects of "length of time in north" was observed. 85.7 percent of direct action was taken by
### TABLE 9.39
LEVEL OF EMPLOYMENT BY TYPE OF ACTION

<table>
<thead>
<tr>
<th>Level of Employment</th>
<th>Discussion</th>
<th>Direct Action</th>
<th>Considered Action</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Row %</td>
<td>N</td>
<td>Row %</td>
</tr>
<tr>
<td>Top Management</td>
<td>7</td>
<td>(18.0)</td>
<td>27</td>
<td>(71.5)</td>
</tr>
<tr>
<td>Middle Management</td>
<td>6</td>
<td>(13.3)</td>
<td>26</td>
<td>(57.8)</td>
</tr>
<tr>
<td>Hourly Employee</td>
<td>5</td>
<td>(13.5)</td>
<td>18</td>
<td>(48.6)</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>(15.0)</td>
<td>71</td>
<td>(59.2)</td>
</tr>
</tbody>
</table>

Contingency Coef = .245  \( \chi^2 = 7.72 \)  Significance .10

### TABLE 9.40
LEVEL OF EMPLOYMENT BY TYPE OF ACTION (Controlling for Place of Identification (at work))

<table>
<thead>
<tr>
<th>Level of Employment</th>
<th>Discussion</th>
<th>Direct Action</th>
<th>Considered Action</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Row %</td>
<td>N</td>
<td>Row %</td>
</tr>
<tr>
<td>Top Management</td>
<td>2</td>
<td>(9.1)</td>
<td>18</td>
<td>(81.8)</td>
</tr>
<tr>
<td>Middle Management</td>
<td>4</td>
<td>(14.8)</td>
<td>17</td>
<td>(63.0)</td>
</tr>
<tr>
<td>Hourly Employment</td>
<td>2</td>
<td>(12.4)</td>
<td>7</td>
<td>(43.8)</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>(12.3)</td>
<td>42</td>
<td>(64.6)</td>
</tr>
</tbody>
</table>

C. Coef = .3169  \( \chi^2 = 7.26 \)  Significance .1229
persons who had moved north. When this difference is related to the sample
distribution, those who have moved north take action at a rate of 28/100
of sample population, and those who have lived in the north take action at a
rate of 18/100 sample population.

**Principal Language**

There were only slight differences in the effects of "principal language."
"Direct action" was taken by 46.9 percent of persons without English as primary
language and 53.1 percent of "direct action" was taken by persons for whom
English was the principal language.

**Educational Level**

There was a greater tendency for persons with high school education
to take "action." This group accounted for 43.7 percent of all "purposeful
action" taken, whereas those with elementary education accounted for only
18.8 percent of purposeful action. When the amount of "purposeful action" is
related to the sample breakdown, those with university education take
"purposeful action" at the rate of 40/100 of sample population compared to
a rate of 22.5/100 and 19/100 of sample population in those with high school
and elementary education respectively.

**Distance**

A significant association was seen in Table 9.41 with the variable
distance (relating to the distance between the respondent and the identified).
The table showing overall relationships reveals that the greatest proportion of
purposeful action was at a (-1) and a (-2) level where the individual identified was one to two levels above the respondent. Comparing only actions at an (0) and (-1) level, where the greatest amount of action occurred, there was a greater proportion of direct action at the (-1) level and a greater proportion of considered action at (0), the "same level." At work, when controlling for place of identification (Table 9.42), significance is high. The greatest amount of "direct action" at work was taken at a (-1) level where the individual identified was one level above the respondent. Although not significant, the largest proportion of direct action (outside of work) was at the (0) level (where the respondent and identified were at the same level).

Summary - (First Action)

Differences in types of first action were seen with both community size and level of employment. A greater proportion of direct and purposeful action was taken in large communities whereas a greater proportion of "considered action" was present in small communities. These differences became more extreme for individuals identified at work. Similarly, highly significant differences in "action" appeared with level of employment. Top management were more likely to take a "direct action" whereas hourly employees were more likely to "consider action."

The intervening variables showed marked effects on First Action. The variable "age" had a direct relationship to proportion of "purposeful action" taken. An inverse relationship between proportion of "purposeful action" and "length of time in north" also appeared. A direct association to proportion
TABLE 9.41
DISTANCE BETWEEN IDENTIFIER AND IDENTIFIED BY TYPE OF ACTION

<table>
<thead>
<tr>
<th>Distance</th>
<th>Discussion N</th>
<th>Row %</th>
<th>Direct Action N</th>
<th>Row %</th>
<th>Considered Action N</th>
<th>Row %</th>
<th>TOTAL N</th>
<th>Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>3</td>
<td>(14.3)</td>
<td>18</td>
<td>(85.7)</td>
<td>--</td>
<td>---</td>
<td>21</td>
<td>(20.4)</td>
</tr>
<tr>
<td>-1</td>
<td>7</td>
<td>(16.7)</td>
<td>27</td>
<td>(64.3)</td>
<td>8</td>
<td>(19.0)</td>
<td>42</td>
<td>(40.8)</td>
</tr>
<tr>
<td>0</td>
<td>4</td>
<td>(11.1)</td>
<td>18</td>
<td>(50.0)</td>
<td>14</td>
<td>(38.9)</td>
<td>36</td>
<td>(35.0)</td>
</tr>
<tr>
<td>1</td>
<td>--</td>
<td>---</td>
<td>2</td>
<td>(50.0)</td>
<td>2</td>
<td>(50.0)</td>
<td>4</td>
<td>(3.9)</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>(13.6)</td>
<td>65</td>
<td>(63.12)</td>
<td>24</td>
<td>(23.3)</td>
<td>96</td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 14.0 \quad \text{C. Coef} = .34 \quad \text{Significance} .02 \]

TABLE 9.42
DISTANCE BETWEEN IDENTIFIER AND IDENTIFIED BY TYPE OF ACTION
(Controlling for Place of Identification (at Work))

<table>
<thead>
<tr>
<th>Distance</th>
<th>Discussion N</th>
<th>Row %</th>
<th>Direct Action N</th>
<th>Row %</th>
<th>Considered Action N</th>
<th>Row %</th>
<th>TOTAL N</th>
<th>Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>1</td>
<td>(7.8)</td>
<td>12</td>
<td>(92.31)</td>
<td>--</td>
<td>---</td>
<td>13</td>
<td>(20.0)</td>
</tr>
<tr>
<td>-1</td>
<td>5</td>
<td>(16.13)</td>
<td>20</td>
<td>(64.5)</td>
<td>6</td>
<td>(19.4)</td>
<td>31</td>
<td>(47.7)</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>(10.53)</td>
<td>10</td>
<td>(52.0)</td>
<td>7</td>
<td>(36.8)</td>
<td>19</td>
<td>(29.0)</td>
</tr>
<tr>
<td>1</td>
<td>--</td>
<td>---</td>
<td>--</td>
<td>---</td>
<td>2</td>
<td>(10.0)</td>
<td>3</td>
<td>(4.6)</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>(12.31)</td>
<td>42</td>
<td>(64.6)</td>
<td>15</td>
<td>(23.0)</td>
<td>65</td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 14.01 \quad \text{C. Coef} = .42 \quad \text{Significance} .03 \]
of "purposeful action" with level of education was seen. The variable "distance" also showed strong associations. The greatest amount of "direct action" at work occurred when the identified was above the identifier in the organization. It was apparent that distinct types of relationships were present with differing contexts of identification.

(2) Second Action (Final Action)

(a) Community/Industry Size Association with Second Action

No significant association was found with the composite variable "community/industry size," or the variables "community size" and "industry size" on second action. When pursuing a final or second action there was a trend in smaller communities to take a final action outside of work, and a greater trend to take a final action at work in large communities.

(b) Level of Employment

Level of employment had no significant association with second or final action.

(c) Intervening Variable Association with Second Action

The variables "age," "length of time in north," "principal language" and "educational level" had less significant associations with second action but were presented in a similar proportion as they were with first action.

Although the variable "distance" was not significant, there was a trend to take more direct action at the same level (0), and an increase in amount of direct action at the (+1) level (where the respondent was above the identified).
Summary (Second Action)

Fewer significant associations were seen between the two independent variables "community/industry size" and "level of employment" and "second action taken." A trend to take more "direct action" outside of work in smaller communities and at work in large communities was apparent.

As well, fewer significant associations existed with the intervening variables. The variable "distance" revealed that different identifying relationships were present when a final or second action was taken. A levelling effect appeared where actions were taken by individuals at the same level or one level above the identified.

(3) Categories of Purposeful Action

Table 9.43 - A thorough examination of the effects of independent variables on categories of action was not possible because of the number of incomplete cells. For this part of the analysis, "first" and "second action" were combined. The categories of action were examined for the two subtypes—"direct action" and "discussive action."

(a) Categories of Direct Action

The categories of direct action taken when ranked (overall), but not selecting for place of identification, had the proportions seen in Table 9.43.

As level of employment had moderate association with type of direct action, the salient points were examined. It was found that Top Management, who took most direct action, did so in the form of treatment. Hourly employees
tended to more "covering up," and "taking home." The middle management group showed the highest proportion of the category "taking home."

Categories of Discussion

Tables 9.44 to 9.46 - As with the type of direct action, the categories of "discussion" were ranked. The content categories for discussions were based on persons or groups with whom discussions were held. The categories of discussions, placed in rank order, had the profile seen in Table 9.44.

The independent variables "industry size," "community/industry size" did not significantly alter the proportions. A moderately significant association was seen with "level of employment." In Table 9.45, it is seen that hourly employees did not discuss an "identified" problem at all with the Union or Supervisor; on the other hand, supervisors (middle management) and top management had the greatest proportion of discussions of the problem with supervisors. In the case of top management there was also considerable discussion with personnel departments (second highest proportion of discussions by top management).

The intervening variable "age" had moderate effects. Table 9.46 indicates that the oldest age group discussed identified problems more with supervisors, the youngest age group discussed more with fellow workers, and the age group 30–40 discussed more with the personnel department.
### TABLE 9.43
CATEGORIES OF DIRECT ACTION RANKED BY ORDER OF FREQUENCY

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>38.8%</td>
</tr>
<tr>
<td>Take home</td>
<td>35.5%</td>
</tr>
<tr>
<td>Discussion</td>
<td>18.4%</td>
</tr>
<tr>
<td>Cover up</td>
<td>8.2%</td>
</tr>
<tr>
<td>Referral</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

### TABLE 9.44
CATEGORIES OF DISCUSSION RANKED IN ORDER OF FREQUENCY (by Place of Identification)

<table>
<thead>
<tr>
<th>Place of Identification</th>
<th>At Work</th>
<th>Outside of Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisors</td>
<td>34.4%</td>
<td>40.0%</td>
</tr>
<tr>
<td>Personnel Dept.</td>
<td>25.7%</td>
<td>23.6%</td>
</tr>
<tr>
<td>Union</td>
<td>17.1%</td>
<td>14.6%</td>
</tr>
<tr>
<td>Fellow Worker</td>
<td>11.4%</td>
<td>10.9%</td>
</tr>
<tr>
<td>Outside Persons</td>
<td>11.4%</td>
<td>10.9%</td>
</tr>
</tbody>
</table>

### TABLE 9.45
TYPE OF DISCUSSION BY LEVEL OF EMPLOYMENT

<table>
<thead>
<tr>
<th>Discussion with</th>
<th>Management</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Top Column %</td>
<td>Middle Column %</td>
<td>Hourly Column %</td>
</tr>
<tr>
<td>Fellow Worker</td>
<td>2 (7.7)</td>
<td>---</td>
</tr>
<tr>
<td>Union</td>
<td>5 (19.2)</td>
<td>3 (13.8)</td>
</tr>
<tr>
<td>Supervisor</td>
<td>10 (38.5)</td>
<td>12 (63.2)</td>
</tr>
<tr>
<td>Personnel</td>
<td>7 (26.0)</td>
<td>2 (10.5)</td>
</tr>
<tr>
<td>Someone Outside</td>
<td>2 (7.76)</td>
<td>2 (10.5)</td>
</tr>
<tr>
<td>Total</td>
<td>26 (47.3)</td>
<td>19 (34.5)</td>
</tr>
</tbody>
</table>

Significance .06
### TABLE 9.46
#### TYPES OF DISCUSSION BY AGE GROUPS

<table>
<thead>
<tr>
<th>Discussion Held With</th>
<th>21-30 Column %</th>
<th>31-40 Column %</th>
<th>41-65 Column %</th>
<th>TOTAL Column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fellow Worker</td>
<td>2 (40.0)</td>
<td>2 (13.3)</td>
<td>--</td>
<td>4 (11.1)</td>
</tr>
<tr>
<td>Union</td>
<td>--</td>
<td>4 (26.7)</td>
<td>1 (6.3)</td>
<td>5 (13.9)</td>
</tr>
<tr>
<td>Supervisor</td>
<td>1 (20.0)</td>
<td>3 (20.0)</td>
<td>11 (68.8)</td>
<td>15 (41.7)</td>
</tr>
<tr>
<td>Personnel</td>
<td>1 (20.0)</td>
<td>5 (33.3)</td>
<td>3 (12.5)</td>
<td>8 (22.2)</td>
</tr>
<tr>
<td>Someone Outside</td>
<td>1 (20.0)</td>
<td>1 (6.7)</td>
<td>1 (6.3)</td>
<td>3 (8.3)</td>
</tr>
<tr>
<td>Other</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1 (2.8)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5 (13.9)</td>
<td>15 (41.7)</td>
<td>16 (44.4)</td>
<td>36</td>
</tr>
</tbody>
</table>

\( \chi^2 = 17.5 \)  
Significance .06

### TABLE 9.47
#### LINKAGE PROPORTIONS BY TYPE OF CUE
(Selecting for Place of Identification)

<table>
<thead>
<tr>
<th>Type of Cue</th>
<th>Linkage Proportion*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>19</td>
</tr>
<tr>
<td>Appearance</td>
<td>21</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>22</td>
</tr>
<tr>
<td>Behavioral</td>
<td>13</td>
</tr>
<tr>
<td>Drinking</td>
<td></td>
</tr>
<tr>
<td>Outside Work</td>
<td>19</td>
</tr>
<tr>
<td>Appearance</td>
<td>38</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>16</td>
</tr>
<tr>
<td>Behavioral</td>
<td>13</td>
</tr>
<tr>
<td>At Work</td>
<td>19</td>
</tr>
<tr>
<td>Appearance</td>
<td>17</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>25</td>
</tr>
<tr>
<td>Behavioral</td>
<td>35</td>
</tr>
</tbody>
</table>

*This proportion was based on the individual identified with whom respondent had closest relationship.*
Summary - Categories of Action (Both First and Second Action)

Certain categories of action were more predominant at different levels in the organization and in different-sized communities. The variable "community/industry size" showed different association within both categories of "discussion" and "direct action." Level of employment produced an effect on categories of "direct action" only.

9.5 Relationship Between the Dependent Variables

Table 9.47 - To determine the link between the First Level Identification (Identification/Classification) and Second Level Identification (Action/Decision) an examination of the relationship between the dependent variable operationalized as "proportion of cues" and "type of purposeful action" was planned. This was abandoned as the broad range in the distribution of the proportions of the operationalized variable "proportion of cues" did not allow resulting actions to be examined for individual identifiers or subgroups of identifiers without a more sophisticated analysis, which was beyond the time and resources available for this study. To provide a cursory examination a proportion, referred to as the "linkage proportion," was developed for each type of cue, as shown.

\[
\text{Number of Respondents taking "purposeful" actions} \div \text{Number of Respondents identifying cues by type} \times 100 = \text{linkage proportion}
\]

From Table 9.47 it can be seen that the purposeful actions did not vary with the type of cues identified alone, but only when additional variables were considered. This suggests (in a crude way) that there was no
direct linkage between Identification/Classification and Action/Decision.

9.6. Limitations of Findings

Although the findings of this study are limited by the setting, the results can be generalized to the extent that characteristics of other populations are similar to characteristics of the study population.

In interpreting and applying the findings to other settings, several aspects of the methodology must be considered. First, the findings at Second Level Identification had as their basis the content categories developed through a "content analysis." Measures developed in content analyses are frequently subject to criticism because of their subjective nature. In this study there is reason to believe that standardized procedures used to develop categories were successful in reducing this subjective bias. In no part of the analysis did the "interviewer" variable, and sex and other personal differences between interviewers, influence the results.

Further, there appeared to be a high degree of honest response, thereby increasing reliability and confidence in the content categories. The interviewers encountered 68 individuals (37.5 percent of the sample) who openly discussed their own drinking habits.

A problem with the content analysis which was recognized was the range of responses to categories. The low response rate in some categories did not permit testing of the findings in these cases. Also, the frequency in responses did not follow the normal distribution and therefore reduced the sensitivity of the approach, particularly in the analysis of variance and covariance.
Secondly, a comment should be made on the technique for data collection in this study. The hypothetical situations (scenarios) and recall of situations (individuals with problem) were projective in nature, allowing the respondents to develop their own mental images. There was concern that the selection would reflect a "defensiveness" of respondents rather than an accurate account of identification. The results found with the variable "distance" suggest that some projection was occurring. Through this variable, it was seen that, contrary to reports in the literature, respondents identified individuals above them in the organization. However, the differences in response rates to the scenarios and individuals recalled appeared reasonable. From the differences in response rates in the different sections of the questionnaire, it appears that problems were being "passed up through organizational ranks," in an appropriate manner, to be effectively dealt with. As adequate control groups (i.e., individuals not associated with an industrial or work organization) were not included in the study it was not possible to examine the extent of the projection effect introduced by the instrument.

Thirdly, a number of variables were found to have weak operationalizations. In particular, the composite variable, "Community/Industry size" did not serve the purpose for which it was developed. The interaction between the variables forming the composite frequently masked any clear pattern of association with the dependent variable. In addition, variables such as "place of identification," and "sets of cues" (i.e., first or second selected individual) were frequently found to produce significant effects. In future studies these
variables should be defined more finely to determine what specific "location" and "social distance" effects may be operating.
Chapter Ten

SUMMARY AND DISCUSSION

An earlier formative study, which examined professional recording of the alcohol problem in northwestern British Columbia, did not clearly demonstrate how the problem was seen by northerners. The expressed opinion—that the drinking problem was greater in the north—led to the present study, which was designed to explore how the problem was seen by the people (lay identification). The study population, "the working man," was selected from each of three levels in seven industries within five communities. The beliefs and manner of identification of the problem in the 182 individuals sampled from the working population, was assumed to be representative.

The major purpose of this research was to describe the relationship of personal, sociodemographic, and organizational factors to the identification of alcohol problems within industry. The process of identification was conceived to have three stages. The first stage, Recognition, was not included but the second and third stages which formed the basis for this study were: Identification/Classification, and Action-Decision/Reclassification (see Chapter Four).

At the second stage of Identification/Classification, the respondents' labelling and use of "cues" to describe the problem are examined. The labels and cues together provided a "worker's definition." At the third stage,
Action-Decision/Reclassification, the way in which an individual proceeded to deal with or identify a problem within the organizational structure was explored.

The instrument which was constructed allowed those being interviewed to respond without regard to their experience or exposure to a drinking problem. To examine Identification/Classification, or individual labelling, the respondent was given a hypothetical situation (scenario) to which he was asked to apply an appropriate set of labels. He was then asked to describe for the hypothetical situation, and two situations from his own experience, "cues" which led him to believe that a person had a drinking problem. The respondent, if experienced, was then asked to indicate his actions and reasons for taking action.

Three organizational variables were the primary basis for exploring the process of identification. These were: level of employment, community size, and industry size. Then, to describe the influence of distinct features of northern life on the "identification process," two groups of explanatory variables were included: (1) personal characteristics—age, birthplace, marital status, residence prior to arrival, education, length of stay in north, and (2) interactional variables—social distance, principal language, and place of identification. Job characteristics were purposely not included in the study although they were considered in a cursory manner in determining organizational levels from which to select the sample.
10.1 A Systems View of Identification

Because the results of this study very clearly revealed the identification process to be a complex one, considerable thought was given to interpretation. The findings seemed to be best described in terms of the concept of open systems. This general concept enabled the organizational, personal and interactional variables to be fitted together. In terms of the three-stage Identification Process, this system may be viewed as the "input" system. Under selected conditions and in varying combinations all of the variables were seen to be determining factors of identification. The greatest explanation was found when selecting cases for the analysis on the basis of "place of identification" and "closeness of association" with identifier.

This was most clearly seen from a Multiple Classification analysis which accompanied the analysis of variance and covariance. Community size was most frequently dominant, providing a clearer picture of the extremes of variation in labelling than either "level of employment" or "industry size." However, the interactional effects between the three organizational variables were frequently strong, indicating that extraneous processes were present. The explanatory variables "age" and "principal language" reduced the interactive effects in many instances, and improved the explanation. This suggests that intervening across organizational systems of identification were subsystems, perhaps communication systems, within age and ethnic groupings. In an earlier study individuals in the region had commented frequently on the drinking pattern and attitudes to alcohol use of certain age groups (i.e., younger), and
ethnic groups (i.e., Native Indian). This reported difference may not reflect an actual difference in alcohol use as much as it does a value differential between the identifier and identified.

Further, it was clearly shown that the identification was not restricted to the industrial setting. Fifty percent of the Identification/Classification was outside of work, although a greater specificity or larger number of cues was reported when identification was made at work. Comments by the respondents elaborating on this fact indicated that status (based on position in industry) was not a deterrent to interaction and resulting problem identification in the north as it was in larger communities elsewhere in the province of British Columbia. The lack of variety in recreational resources—in particular sports complexes, theatres, restaurants and bars—promotes socialization between individuals of different industry levels.

10.2 The Definitional System - the "Workers Definition"

In the broad application of labels to describe a "drinking problem" most workers agreed that in most cases "drinking problems" could also be classified as either a "health" or "mental health" problem. Drinking or alcohol problems are not exclusive labels in the "workers conceptual system."

Labelling of a "drinking problem" was found to be present in all levels of industry and in all sizes of industries and communities. The extent to which a problem was defined (i.e.; number of cues) varied within the organizational variables. For example when describing the problem of an individual with
whom the respondent was closely associated, hourly employees were more specific (greater number of cues) than middle or top management. "Education" and "Principal Language" were two other dominant factors influencing the extensiveness of description of a problem.

In almost all situations, appearance cues were reported most frequently, followed by behavioral cues, interpersonal cues, and drinking cues. This general pattern existed for the first cues presented as well. The proportions for categories within each type of cues varied, particularly with "place of identification," "education," and "social distance." To describe a single pattern for all situations is impossible; however, predominant categories can be described for each type as follows:

Appearance cues: Grooming (29.6%); Facial (22%).

Interpersonal cues: Aggression (50%).

Behavioral cues at work: Absenteeism (46.1%).

Behavioral cues outside of work: Family and home problems (41.7%).

Drinking cues: Knowledge of consumption (50%).

Although the study was not designed to determine the extent of the drinking problem in the north or differences in the way problems were presented in the north, anecdotal comments made by the respondents following the structured interview suggested that "drinking problems" of northerners were different than elsewhere in B.C. Comments to the effect that "we drink more in the north," and "there is nothing else to do but drink," were frequently made.
10.3 Linking Identification with Action

From a cursory examination, there was no obvious linking between Identification classification and Action decision. It appeared that the type and specificity of an individual's identification had no association with subsequent action. In fact, organizational and other intervening systems appeared to overrule an individual's labelling as a basis for action. The action categories did not seem to fit with the identification process of someone having a drinking problem.

10.4 A System of Action

The action system, corresponding to the third stage of the identification process, represents an "output" system. This system as a whole can be viewed as a progressive series of actions leading to a final decision. It was anticipated that a closely interlocking system would be found. This was not so. Instead, what appeared was a loosely interlocked system with blocks. In some situations the first action may represent a "positive" or "purposive" action by linking to subsequent actions which will eventually promote effective treatment, and in others it may block access to treatment. The intervening personal and interactional variables may either assist in linking the purposive actions or developing blocks.

Unlike the findings at the second stage, "level of employment" appeared to be the dominating variable, although community size was also strong. In general, top management were more likely to take "direct action" whereas hourly employees tended toward "inaction."
The greater proportion of "direct actions" were taken in large communities, and a greater proportion of "inaction" occurred in smaller communities. The amount of "purposeful action" was directly related to age and educational level, and inversely related to length of time in the north. Respondents who had been in the north all of their lives tended to block on taking action as did respondents who identified individuals at the same organizational level.

In the second action, the trends established in the first action—"outside of work" in smaller communities and "at work" in large communities—were emphasized. With subsequent actions, a levelling effect was observed, where respondents tended to take action if the labelled individual was on a lower level of the organizational hierarchy.

Distinct categories of action appeared for each organizational level: Top management tended to "treat," hourly employees tended to "cover up," whereas middle management tended to "take home." What may have appeared to be a "purposive" action may have had negative results. Actions such as "covering up" are blocks to treatment.

The categories of "Discussion" as with categories of "Action," in terms of treatment, may be regarded as representing negative and positive outcomes. Certain levels in the organization, in terms of their discussions contributed more to positive outcomes. Hourly employees tended not to discuss the problem with supervisors or union, whereas top management tended to discuss the problem openly with personnel departments. These differences may,
in fact, reflect both perceptual and actual role differences. It is not possible to assess the differences without having a perspective on alcohol programming.

IMPLICATIONS

In addition to the description of the identification process provided by this study, a number of postulates can be abstracted for planning. To abstract these postulates, the findings must first be placed in the context of contemporary preventive and treatment services. In alcohol programs as in most rehabilitation services, program goals have attended industrialization, where positive value is placed on possessing an occupation, being productive at a job, and achieving.

The publicly articulated goals of rehabilitation have largely reflected the values of American Society. While rehabilitation agencies are very interested in assisting the disabled individual to meet his or social, emotional and concrete needs, the major goal of these agencies is to get the individual working on a paying job (Albrecht, 1976).

The principal goal is, even more so, true of alcohol and other occupational health programs. Industry makes no apology for demanding productivity from its workers, or stating the cost benefits of occupational health programs. Although unstated, the emphasis in occupational and other alcohol rehabilitation programs is clearly "utilitarian."

With regard to identifying alcohol problems society's values have not kept pace with "utilitarian" demands. Both alcohol use and abuse, as
suggested by the respondents, has been normalized in the north. One can therefore appropriately refer to a "culture of drinking" as a "way of life in the north." It is also possible to speak of cultural differences in the north. Lowe and Hodges (1972), have indicated that alcohol problems can be normalized more in some subcultures than in others. It was evident in small communities—as indicated by lack of action—that alcohol use and its consequences were more accepted than in larger communities. The action differential in response to the alcohol problem between small and large communities suggests a difference in degree of "humanitarian" interest. In other words, within small communities "humanitarian" interests arising from such factors as comradeship in recreation, and reflected in the fear of betrayal of one's fellow man, dominated. In larger communities, utilitarian interests both in terms of an individual's productivity in society and his health, were greater, although still limited.

The labellers, who opted for a "soft" rather than a "hard" approach, frequently gave two common reasons for their reluctance to take action, the first being, "I did not know anything could be done." and the second, "He was my friend." In many quarters there appeared to be no awareness that alternatives to the "humanitarian" approach were possible. Perhaps in some communities there were no alternatives. The gap between Stage Two and Stage Three of the identification process may, therefore, be explained as a dilemma arising from not knowing the difference between the "humanitarian" and "utilitarian" approaches and, as well, not knowing how to select and proceed with the alternative. Social disability can appropriately describe the
dilemma for the "identified." It can, however, also be applied to the labellers, which in the context of this study would potentially be all northerners.

Goldin et al (1970) speak of social disability as:

...inability to enter into negotiation with social institutions in the community to have his/her social, emotional, and concrete needs satisfied. Such disability stems from the lack of opportunity for experience..., a lack of information about the greater culture, and the anxiety which stems from these conditions.

Clearly, the inability to use the system stems from two areas:

1. Demands of Industrialization

The question of whether the north wants to be industrialized, which has been raised by numerous inquiries, commissions, and in reports on northern life, remains central. Many individuals have moved north to demonstrate their rejection of the work ethic. The question is even more central when considering an approach to alcohol preventive and treatment services and health services in general. The type of health services, and the extent to which they are developed, is dependent on the extent to which the market economy, as support in a region, has developed. It is impossible for an industrial society to function at its optimum without a healthy population throughout. To carry out this universal emphasis means developing access routes for all individuals. Knowing how to develop these routes is partially determined by the way
in which individuals perceive the problem, as well as by their desires to be part of a "health system."

2. **Destigmatization of the Problem**

Destigmatization is a common antecedent of program planning. There is, however, reason to believe that stigma does not play the focal role in the north that it does in other areas. An ability to describe and label, but at the same time a "normalization" or passive acceptance of drinking problems, was found in this study. In approaching the opposite end of the continuum to stigma the presentation of "hard" facts to the public is required. It is necessary to demonstrate that alcohol abuse is costly and unhealthy. A statement of these effects requires some understanding of the balance between "humanitarian" and "utilitarian" interests, and a decision on where to draw the line between social use and abuse of alcohol.

3. **Communication as a Resource**

Communication appears to be vital in reclassifying for action. For greater action, these consequences must be spelled out in a utilitarian sense which, in industry, will relate to organizational goals for quality and quantity of production. Outside of industry, however, utility may be based on a quite different set of values, such as effect on family or community. Money is a final determinant and it is in industry where money is earned.

Within the Kitimat-Stikine Regional District the pioneering efforts of the Canadian Association of Smelter and Allied Workers and the Aluminum Company of Canada are representative of one of the many communication
processes which should be occurring. Ultimately, for comprehensive programming, communication should extend beyond union and management. Dialogue is also necessary between industrial representatives and health and social service agencies, ethnic groups, and voluntary groups. For all-encompassing change there must be dialogue with political fervor. Krause (1976) has suggested that policies within both the industrial system and society in general must be firmed up, by legislation if necessary. He further suggests that inputs of groups must be fair: programmes should not be used "in a parasitical manner for organizational aggrandizement and simple profit making" or to coopt members of another group for some unspecified alternative purpose.

4. Industry as a Resource

The Honourable Robert McClelland, Minister of Health for the Province of British Columbia, in a speech to the British Columbia Medical Association in May, 1978, stated clearly that the "future" for successful treatment of the alcohol problem lay in the hands of industry. Industry, as it demands efficiency, must be prepared to do something about facing these demands.

Industry does have the potential to take the lead in planning; nevertheless, industrial resources will not be the only resources required. In many instances it is not wise for industry to "treat." Determining the role to be played by industry will, to a large extent, depend on a number of factors. The nature and size of community and its resources will be important determinants. In smaller communities with less industrialized cultures there may be less separation between work and leisure, which may allow industry to become more involved in the life of an individual or his family and, consequently, in the treatment process. Occupational health persons may be the only individuals
in such a community with basic understanding of the treatment process.

The type of problem exhibited and where it is identified will be two other determinants of industry's role. Incidents of alcohol abuse, such as drunken driving identified on the way to work, may be peripheral to industry's concern, and more adequately dealt with by the police. Where no police are present in the community, the problem may have to be approached by industry.

The fact that problems may be exhibited in different locations, yet affect several community service systems, may suggest a need for coordination. Because of the behavioral nature of alcohol abuse, a number of resources and agency services may have to be shared.

5. Imaginative Programming

Regardless of whether industry or some other group is providing the service, program options are numerous. As all presently developed services and therapeutic approaches have only limited success, there is merit in continuing to explore for alternatives. There is need for a mood of caution so that the exploration is not aimless. The roles and boundaries of a programme must be clear. McDonald (1969) pointed out a fundamental role difference between treatment and rehabilitation which is important to consider. He stated:

...treatment is aimed at disability, the illness, and is curative and alleviative in orientation. In contrast... rehabilitation aims at discovering and evolving those
assets within the person and enabling those assets to begin working.

Within the north there are many undiscovered reasons for drinking, and resistance to labelling or approaching services because of the complexities and diversity in the ethnic and cultural networks. Programs, to be efficient, must utilize the resources within the individual, his family, his peer and cultural group. In fact these are all variations of "self help" which is ultimate in both identification and treatment (Robinson, 1977). "Self help" appears to be a basis for the egalitarian approach which was previously discussed. In this egalitarian framework the focus does not become the institution, or the program, but the contributions to program which individuals from all levels and segments of a community can provide. With the egalitarian principle as a basis for planning, programs will remain the creation of the interpersonal processes which are operating, and not a substitute for these community processes.
REFERENCES


"Business copes with alcoholics : More and more companies meet problem head on with pre-treatment programs."  Business Week.  26 October, 1968, pp. 97-100.


APPENDIX A

1. Letter for Industry, Union Contact (May 1977)
2. Letter for Subject Contact (June, 1977)
3. Letter for Subject Contact (July, 1977)
4. Consent Form Card
5. Identification Card
June , 1977

Dear Respondent:

The Regional District in its efforts to improve and develop health facilities and programs is sponsoring a survey to determine public opinion on various health problems within the area. This particular survey will include men from the major industries in Terrace, Kitimat, Kitwanga, and Stewart. The questions relate to specific health problems in the north and to your opinions on such problems as alcohol problems.

The unions and management within all of the companies involved are supporting the activities of the research team. We have discussed this project with individuals in the Band Council Offices at Kitwanga and Kitwancool. The interviewers, who will be conducting the interviews, are from the Faculty of Medicine at the University of British Columbia.

Your name has been selected, by chance, from the employment records of the company in which you work. We would appreciate an opportunity to interview you. The opinions which you express will be compiled along with approximately 200 other employees within the region. To assure that what you say and who you are, will remain anonymous, only the researchers are aware that your name has been selected.

We will contact you at home by phone to arrange an appointment within the next few days. Either Ms. McPhee or myself will interview you. The interview will take between 20 and 30 minutes of your time. If you have any concerns or questions, we will be pleased to discuss them with you when we meet prior to the beginning of the interview.

Ms. McPhee and I are looking forward to meeting with you.

Sincerely,

Ted Myers
Project Director
July , 1977

Dear Respondent;

The Regional District in its efforts to improve and develop health facilities and programs is sponsoring a survey to determine public opinion on various health problems within the area. This particular survey will include men from the major industries in Terrace, Kitimat, Kitwanga, and Stewart. The questions relate to specific health problems in the north and to your opinions on such problems as alcohol problems.

The unions and management within all of the companies involved are supporting the activities of the research team. The interviewers, who will be conducting the interviews, are from the Faculty of Medicine at the University of British Columbia.

Your name has been selected, by chance, from the employment records of your company. We would appreciate an opportunity to interview you. The opinions which you express will be compiled along with those of approximately 200 other employees within the region. To assure that what you say and who you are, will remain anonymous, only the researchers are aware that your name has been selected.

A research assistant will contact you by phone to arrange an appointment within the next few days with Ms. McPhee or myself. We will be able to come to your home to interview you. The interview will take between 20 and 30 minutes of your time. If you have any concerns or questions, we will be pleased to discuss them with you when we meet prior to the beginning of the interview.

Ms. McPhee and I are looking forward to meeting with you.

Sincerely

Ted Myers
Research Director
CONSENT

I, ____________________________, consent to be interviewed by ____________________________, on behalf of the Department of Health Care and Epidemiology, Faculty of Medicine, The University of British Columbia.

The purpose of the interview has been explained to me, and I am satisfied that what I say will be kept confidential, and that my identity will not be revealed. My comments will not be attributed to me in any way.

I am aware that I need not answer all the questions, and that I may withdraw from the study at any time.

Signature: ____________________________

Witness:
(Required only if interviewee signs with "X"

DATED the _____ day of ____________, 1977.
<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Interview No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Telephone</th>
<th>COMMUNITY:</th>
<th>Interviewer</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Terrace</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kitimat</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kitwanga</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stewart</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Burns Lake</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INDUSTRY:</th>
<th>Reason for No Interview:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcan</td>
<td>Refusal</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Eurocan</td>
<td>Illness</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Cancel — Ter</td>
<td>Holidays</td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Cancel — Kit</td>
<td>Moved</td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Skeena-Price</td>
<td>Unable to contact</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Granduc</td>
<td>Other</td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Babine</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age:</th>
<th>Int. No.</th>
<th>Comm.</th>
<th>Ind.</th>
<th>Age</th>
<th>Int’er</th>
<th>Day</th>
<th>RNI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( ) _1</td>
<td>( ) _2</td>
<td>( ) _3</td>
<td>( ) _4</td>
<td>( ) _5</td>
<td>( ) _6</td>
<td>( ) _7</td>
</tr>
</tbody>
</table>
APPENDIX B

Interview Schedule
IDENTIFYING ALCOHOL PROBLEM WITHIN INDUSTRY

INTERVIEW SCHEDULE

Conducted by

T. Myers

Faculty of Medicine
Department of Health Care and Epidemiology

University of British Columbia
INTERVIEW SCHEDULE

INTRODUCTION AND EXPLANATIONS

(Interviewer will cover all the major points below)

My name is __________________________. I am from the Faculty of Medicine at the University of British Columbia. We are conducting a survey of individuals working at all levels of industry in the communities of Terrace, Kitimat, Stewart and Kitwanga. This project has the support of your union and your employer. (Company name).

It is hoped that the survey will help in the understanding of health problems of this area. The information will be useful in improving educational and other preventive approaches taken by industry and health agencies of the region. We are interested in learning from you whether health problems are different in the north, and also how people working in industry see the problem. I will be asking you some specific questions about the alcohol problem. Some of the questions that I ask you about your work will help me to understand the variation in the way problems occur in different situations.

It is not the purpose of this interview to probe or dig into any of your personal problems - I am only interested in your opinions on the health problems. Your name has been selected by chance (explain if necessary). You have been selected because you work in a particular part of the Company that is similar to other companies in this area.

You will not be quoted. What you say will be coded and computed so that you will remain anonymous (unidentified).

Hopefully you will be able to answer all of the questions. If there are questions that you don't want to answer I would rather that you would tell me so.

It is expected that this interview will take 1/2 to 3/4 hour of your time.

Do you have any questions?

Let's begin then.
I.D. Card Code
Interviewer's Identification

1. Have you lived in the Skeena Area all of your life? (show map if necessary)
   (1) yes
   (0) no

If no.

   How many years have you lived here (in total)

   Prior to moving to the Skeena Area where did you live for most of the time?
   (1) Northern B.C. (same latitude)
   (2) Elsewhere in B.C.
   (3) Another part of Canada
   (4) Another country

2. Were you born in Canada?
   (1) yes
   (0) no

3. Do you speak a language other than English?
   (1) yes
   (0) no

If yes -

   What language?

Code:
(1) French
(2) Austrian
(3) Czech
(4) Finnish
(5) German
(6) Hungarian
(7) Italian
(8) Hebrew
(9) Greek
(10) Dutch
(11) Polish
(12) Russian
(13) Scandinavian (Danish, Icelandic, Norwegian, Swedish)
(14) Ukrainian
(15) Yugoslavian
(16) Chinese
(17) Japanese
(18) East Indian Dialects
(19) Native Indian
(20) Inuit
(21) Other
Is this your first language?  
(1) yes  
(0) no  

4. How many years have you worked at  
(name of employer)  

5. Have you worked all of this time for the Company in  
(community)  
(1) yes  
(0) no  

6. Have you ever left the company and returned after a period of time?  
(1) yes  
(0) no  

7. What is your present job?  

Code:  
(1) management  
(2) supervisory  
- foreman  
(3) hourly  

8. What other jobs have you worked at in the Company?  

Code:  
(1) management  
(2) supervisory  
- foreman  
(3) hourly  
(4) #1 and #2  
(5) #1 and #3  
(6) #2 and #3  
(7) #1, #2, #3  

9. If individual has worked at other jobs in the company, then ask:  

How long have you been in this present position?  
(1) less than one year  
(2) between one and two years  
(3) two to five years  
(4) more than five years
10. Do you work with others most of the time?
   (1) team
   (2) task
   (3) assembly
   (0) no

If #1, #2, #3, then

How many persons do you work with in a day?

Does this group change?
   (1) yes
   (2) yes (go to 11)
   (0) no (go to 11)

If yes

How frequently is there a change in this work group?
   (1) daily
   (2) several times a week
   (3) once a month
   (4) twice a month
   (5) less frequently

How many persons (in total) do you work with in a "two month period"?

11. Do you eat lunch at work alone or in a group?
   (1) alone
   (2) group

If the answer is group and the individual answered 'group' for #10, then ask:

Is this the same group as you work with?
   (1) yes
   (0) no
   (3) partly

12. Do you travel to work alone or in a group?
   (1) alone
   (2) group

If the answer is group and answer for #10 was group then ask:

Is this the same group as you work with?
   (1) yes
   (0) no
13 How much variety is there in your job?

(1) a great deal
(2) some
(3) none

If (1) or (2) then ask:

How does your job change?

Code: (1) amount of work
(2) type of work
(3) outdoors - indoors
(4) #1, #2, #3
(5) #1 and #2
(6) #1 and #3
(7) #2 and #3
(8) other

Are you able to tell when you will be doing different work?

(1) yes
(0) no

14. Do you, through your work, have to speak directly with people in another part of this Company?

(1) yes
(2) no

If yes

Is it within another department or location?

(1) department
(2) location
(3) both above

How often do you speak to these persons?

(1) more than once a day
(2) once a day
(3) once a week
(4) less often

15. Are you presently?

(1) married
(2) single
(3) separated or divorced
(4) living common law
16. When you have a day off work do you generally spend it alone or with others?
   (1) alone  (2) with others

   If (2)

   Do you spend most of your day off work with
   (1) family
   (2) friends
   (3) alone
   (4) (1) and (2)

17. Do you spend any of your free time with individuals from work?
   (1) yes
   (0) no

18. Do you ever have times on your days off work when you feel there is nothing to do?
   (1) yes
   (0) no

19. Do you have any technical training?
   (1) yes
   (0) no

   If "yes", specify

   Did you receive this training
   (1) at technical college
   (2) by correspondence
   (3) in an apprenticeship
   (4) #1 and #2
   (5) #2 and #3
   (6) #1 and #3
   (7) all above
   (8) other

20. Do you have any _________ education?

   Code: (1) none
          (2) elementary (Grade VIII)
          (3) high school
          (4) university
21. Have you had any training in first aid and/or industrial safety?

- (1) yes
- (0) no

If yes:

Where did you receive the training?

- (1) within industry
- (2) within educational institution
- (3) worker's compensation
- (4) St. John's Ambulance
- (5) other

(specify)

22. Have you had any specific training in management, or supervision?

- (1) yes
- (0) no

If yes:

Where did you receive the training?

- (1) within industry
- (2) within educational institution
- (3) other

(specify)

23. Have you seen any shows, read any articles, or attended any presentations relating to (a) industrial health, (b) smoking, (c) drinking, (d) diet?

- (1) yes
- (0) no

If yes:

Which ones:

- (1) (a) and/or (b) and/or (d)
- (2) only (c)
- (3) all

Where did you get this information? (check and code later)

- (1) community club
- (2) television
- (3) school
- (4) union meeting
- (5) training meeting
- (6) readobook
- (7) combination
- (8) other

(specify)

(specify)
PART II

Now, I would like to read to you some typical incidents that may occur in industry. This part of my questioning will allow you to use your imagination. Let it go!

These are not real situations, but they could happen in any company. The individuals named are not from this company. There are a lot of details that are missing. I am interested in finding out what you think the problems might be. There are no correct answers. You may give the same answer for each type of problem.

I will read the incident to you, and then ask you whether it suggests to you that the individual is:

(a) Bored and tired of his job
(b) Worrying about problems at home
(c) Having an emotional problem
(d) Having a drinking problem
(e) Finding work too hard or stressful.

You will be asked to state whether this is (1) likely, (2) unlikely to be the problem.

I am looking forward to your opinions.

Now I will read the first incident.
24. SINCE JOHN CAME TO THE COMPANY FIVE YEARS AGO HIS WORK HAS DETERIORATED. AT FIRST HE WOULD PUT IN A FULL DAY'S WORK. HE WAS ALWAYS CHEERFUL. NOW HE HARDLY DOES ANY WORK. THE OTHER MEN ARE DOING MOST OF HIS WORK FOR HIM.

Does this suggest to you that John is:
- (a) Bored and tired of the job? (1) likely (0) unlikely
- (b) Worrying about problems at home? (1) likely (0) unlikely
- (c) Having an emotional problem? (1) likely (0) unlikely
- (d) Having a health problem? (1) likely (0) unlikely
- (e) Having a drinking problem? (1) likely (0) unlikely
- (f) Finding work too hard or stressful? (1) likely (0) unlikely

Is it likely to suggest another problem? (1) likely (0) unlikely

25. GEORGE COMES TO WORK LATE EVERY MONDAY. HE HAS PHONED IN SICK TWO DAYS IN THE LAST WEEK.

Does this suggest to you that George is:
- (a) Bored and tired of the job? (1) likely (0) unlikely
- (b) Worrying about problems at home? (1) likely (0) unlikely
- (c) Having an emotional problem? (1) likely (0) unlikely
- (d) Having a health problem? (1) likely (0) unlikely
- (e) Having a drinking problem? (1) likely (0) unlikely
- (f) Finding work too hard or stressful? (1) likely (0) unlikely

Is it likely to suggest another problem? (1) likely (0) unlikely
26. FRED HAS BEEN REALLY QUIET AT WORK LATELY. RUMOR HAS IT THAT HIS WIFE IS GIVING HIM A BAD TIME. HE IS NOT GOING HOME DIRECTLY AFTER WORK.

Does this suggest to you that Fred is:

(a) Bored and tired of the job? (1) likely (0) unlikely

(b) Worrying about problems at home? (1) likely (0) unlikely

(c) Having an emotional problem? (1) likely (0) unlikely

(d) Having a health problem? (1) likely (0) unlikely

(e) Having a drinking problem? (1) likely (0) unlikely

(f) Finding work too hard or stressful? (1) likely (0) unlikely

Is it likely to suggest another problem? (1) likely (0) unlikely

27. THIS IS THE FIFTH JOB THAT BILL HAS HAD IN THE LAST YEAR. DURING THAT TIME HE HAS LIVED IN THREE COMMUNITIES. HE IS A DIFFICULT PERSON TO GET TO KNOW.

Does this suggest to you that Bill is:

(a) Bored and tired of the job? (1) likely (0) unlikely

(b) Worrying about problems at home? (1) likely (0) unlikely

(c) Having an emotional problem? (1) likely (0) unlikely

(d) Having a health problem? (1) likely (0) unlikely

(e) Having a drinking problem? (1) likely (0) unlikely

(f) Finding work too hard or stressful? (1) likely (0) unlikely

Is it likely to suggest another problem? (1) likely (0) unlikely
(Instructions to Interviewer):

If drinking was indicated to be unlikely in all of the situations go to Part III.

If drinking was stated to be a 'likely' - then say:

You noted Nos. , , , , to be a 'drinking problem'. Which one do you think is most likely to be a drinking problem?

Assume, then, that * is a drinking problem. I will now ask you some specific questions about this incident.

**REPEAT** # 

28. How likely is this to occur in your company?
   (1) very likely
   (2) likely
   (3) unlikely
   (4) very unlikely

29. How likely is this to occur among management?
   (1) very likely
   (2) likely
   (3) unlikely
   (4) very unlikely

30. How likely is this to occur among foremen?
   (1) very likely
   (2) likely
   (3) unlikely
   (4) very unlikely

31. How likely is this to occur among hourly staff?
   (1) very likely
   (2) likely
   (3) unlikely
   (4) very unlikely
32. Would you expect this individual to be in a particular age group?

(1) yes
(0) no

If yes

In what age group (approximately)?

Code:
(1) 15-19
(2) 20-29
(3) 30-39
(4) 40-49
(5) 50-65

33. Would this individual be in a particular population group?

(1) yes
(0) no

If yes

Specify

34. If this is a drinking problem what might you expect to notice about his appearance at work?

35. If this is a drinking problem what might you expect to notice about his behavior at work?
36. If this is a drinking problem what might you expect to notice about his behavior away from work?

37. How would you most likely find out that a person has a problem?

(1) see for yourself
(2) be told by fellow worker
(3) be told by friend of person with problem
(4) it affects your work
(5) other (specify)

PART III

38. Do you know of anyone whose health is affected by drinking?

(1) yes
(0) no

39. Do you know of anyone whose personal relationships are affected by drinking?

(1) yes
(0) no

40. Do you know of anyone who has "run into trouble" with the law as a result of alcohol?

(1) yes
(0) no
41. Do you know of anybody in your company who, in your opinion, has a drinking problem?

- (1) yes
- (0) no (go to 42)

If yes -

Do you know more than one person:

- (1) yes
- (0) no

If yes -

How many do you know who currently work for the company?

42. Do you know of anyone with a drinking problem who has left the Company?

- (1) yes
- (0) no

If yes, how many?

Was drinking the main reason for anyone leaving the Company?

- (1) yes
- (0) no

If yes, for how many was it the main reason?

How many of these individuals have stayed in the North?

43. Are any of the individuals whom you presently know at work in your immediate work area?

- (1) yes
- (0) no (go to 44)

If yes -

How many are in your work area?
44. Can you think of one person who is (has been) in your work group or area in the last five years?

I would like you to think about this person while I ask you some questions.

At what level in the company is this individual?

(1) management
(2) foreman
(3) hourly staff

45. Is (was) this individual's drinking a problem for the Company?

(1) yes
(0) no

If yes -

How is (was) it a problem for the Company?

Any other way?

46. Is (was) this individual's drinking a problem for you?

(1) yes
(0) no

If yes -

How is (was) it a problem for you?

Any other way?
47. Did you first find out about the problem

(a) If at work

How did you find out about the problem?

1. saw for yourself
2. were told by a fellow worker
3. were told by a friend of the person with problem
4. found problem affected your work
5. other (specify)

(b) If outside of work

How did you find out about the problem?

1. was told by someone (specify below)
2. saw for yourself

48. What behavior did you first notice, or were told about?

Were there other specific behaviors?
49. Did you notice anything about the individual's face, dress, or general appearance?

________________________________________________________________________

________________________________________________________________________

50. Does this individual belong to a particular population group?

(1) yes
(0) no

If yes, specify__________________________

51. Are you aware if the individual has a reason for drinking?

(1) yes
(0) no

If yes, then what is the reason:

________________________________________________________________________

52. Can you think of an individual who is not in your group, but in another area, who has a drinking problem?

I would like you to think about this person and I will ask you some questions.

At what level in the company is this individual?

(1) management
(2) foreman
(3) hourly staff
53. Is (was) this individual's drinking a problem for the Company?

- (1) yes
- (0) no
- (3) don't know

If yes -

How is (was) it a problem for the Company?

Any other way?

54. Is (was) this individual's drinking a problem for you?

- (1) yes
- (0) no

If yes -

How is (was) it a problem for you?

Any other way?
55. Did you first find out about the problem

(a) If at work

How did you first find out about the problem?

(1) saw for yourself
(2) were told by a fellow worker
(3) were told by a friend of the person with the problem
(4) found the problem affected work
(5) other (specify)

(b) If outside of work

How did you first find out about the problem?

(1) were told by someone (specify below)
(2) saw for yourself

56. What behavior did you first notice or were told about?

Were there other specific behaviors?

57. Did you notice anything about the individual's face, dress, general appearance?
58. Does the individual belong to a particular population group?

- (1) yes
- (0) no

If yes, specify

59. Are you aware if the individual has a reason for drinking?

- (1) yes
- (0) no

If yes, what is the reason?

PART IV

(If the individual knows/knew someone with an alcohol problem, then ask): then ask

60. Would you now think of the individual in the Company with a drinking problem who is (was) closest to you.

When you recognized that this individual had a drinking problem did you think of either discussing it with someone or assisting the individual?

- (1) yes
- (0) no

61. Did you actually do anything?

- (1) yes
- (0) no (go to #3)
What did you do first?

(1) discuss the situation with some other person (#1)
(2) assist the individual (#2)
(3) do nothing (#3)

If #1

Did you first -
(1) discuss with a fellow worker
(2) discuss with a union representative
(3) discuss with a supervisor
(4) discuss with personnel department
(5) discuss with someone outside
(6) other (specify)

If #2

Did you assist the individual -
(1) within work
(2) outside of work

What did you actually do?

What were your reasons for doing this?

If #3

Why did you do nothing?
62. What did you do next? / Did you do anything at any point in time?

(1) discuss the situation with some other person
(2) assist the individual
(3) do nothing

If #1

Did you then -

(1) discuss with a fellow worker
(2) discuss with a union representative
(3) discuss with a supervisor
(4) discuss with personnel department
(5) discuss with someone outside of work
(6) discuss with the person with the problem
(specify)

If #2

Did you assist the individual -

(1) within work
(2) outside of work

What did you actually do?


What were your reasons for doing this?


If #3

Why did you do nothing?


63. What was the final outcome?

(Union or management involvement; problem still exists)

PART V

64. Are you aware of whether there is a company policy (rule) concerning problem drinking?

(1) yes
(0) no

If yes -

What is the policy (rule)?

How did you find out about the policy?

(1) It is part of your job to know
(2) Was informed by the union
(3) Was told by friend
(4) Attended information session or workshop
(5) News letter
(6) Other (specify)
65. (For those who actually did something)

In your actions did you follow (did you do) what the policy (rule) suggests?

(a) If yes -
   
   Were you satisfied with your action?
   
   (1) yes
   (0) no

   Was it appropriate?
   
   (1) yes
   (0) no

   If not appropriate --
   
   Why not?

(b) If no

   What was your reason for not following policy?

66. In your opinion is the policy sufficient?

   (1) yes
   (0) no

   Why?
The interviewer upon completion of the interview shall put the schedule away. In a few minutes of relaxation, the interviewer may explore for:

A. Whether the individual feels that drinking is a problem in the north.

Feedback or feelings about the questions asked.

B. The interviewer will record impressions of the interview. Was interviewee relaxed, bored, cautious? Was the interviewer relaxed, bored, cautious?

C. Note discrepancies in ethnic group, age, etc.,

D. The interviewer should record anecdotal comments.

Within the interview itself
Note: Additional explanation given (A)
Refusal to answer (B)
Answered elsewhere in the questionnaire eg. (N)(4)
APPENDIX C

Coding Manual
### C.OCCALC: Study of Occupational Alcohol Problems

**Documentation for the 303 Variables in the File **

<table>
<thead>
<tr>
<th>REL VARIABLE NAME</th>
<th>MISSING PCT</th>
<th>VALUES IMM</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 SPOUSE CONT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33 TRAVEL TRAVEL ALONE OR IN GROUP</td>
<td>0.0</td>
<td>38</td>
</tr>
<tr>
<td>34 SATRANL TRAVEL GROUP SAFE AS A GROUP</td>
<td>0.0</td>
<td>30</td>
</tr>
<tr>
<td>35 VARIETY AMOUNT OF VARIETY IN JOB</td>
<td>0.0</td>
<td>40</td>
</tr>
<tr>
<td>36 MEASURE TYPE OF VARIETY IN WORK</td>
<td>0.0</td>
<td>43</td>
</tr>
<tr>
<td>37 PRECINCT ABILITY TO PREDICT CHANGE</td>
<td>0.0</td>
<td>42</td>
</tr>
<tr>
<td>38 SPEAK CONTACT WITH OTHER EMPLOYEES</td>
<td>0.0</td>
<td>43</td>
</tr>
<tr>
<td>39 LOSSPEAK LOCATION OF CONTACT</td>
<td>0.0</td>
<td>46</td>
</tr>
<tr>
<td>40 LOSSPEAK FREQUENCY OF CONTACT</td>
<td>0.0</td>
<td>65</td>
</tr>
<tr>
<td>41 MORTINATION ABILITY TO PREDICT CHANCE</td>
<td>0.0</td>
<td>59</td>
</tr>
<tr>
<td>42 TYPETECH TECHNICAL TRAINING RECEIVED</td>
<td>0.0</td>
<td>52</td>
</tr>
<tr>
<td>43 MORTINATION ANY TECHNICAL TRAINING</td>
<td>0.0</td>
<td>51</td>
</tr>
<tr>
<td>44 TRAINING IN MANAGEMENT</td>
<td>0.0</td>
<td>56</td>
</tr>
<tr>
<td>45 RECIVED FIRSTAIOE TRAINING RECEIVED</td>
<td>0.0</td>
<td>55</td>
</tr>
<tr>
<td>46 EDUCATE TYPE LEVEL OF EDUCATION</td>
<td>0.0</td>
<td>50</td>
</tr>
<tr>
<td>47 TYPETECH CONT</td>
<td>0.0</td>
<td>59</td>
</tr>
<tr>
<td>48 EDUCATE TYPE LEVEL OF EDUCATION</td>
<td>0.0</td>
<td>53</td>
</tr>
<tr>
<td>49 FIRSTAIOE TRAINING IN FIRSTAIOE</td>
<td>0.0</td>
<td>54</td>
</tr>
<tr>
<td>50 RECIVED FIRSTAIOE TRAINING RECEIVED</td>
<td>0.0</td>
<td>55</td>
</tr>
<tr>
<td>51 MORTTRAIN IN MANAGEMENT</td>
<td>0.0</td>
<td>56</td>
</tr>
<tr>
<td>52 TYPETECH MANAGEMENT RECEIVED</td>
<td>0.0</td>
<td>57</td>
</tr>
<tr>
<td>53 SEEKED PRESENTATIONS RELATED TO HEALTH</td>
<td>0.0</td>
<td>58</td>
</tr>
<tr>
<td>54 METAPD HEALTH INFORMATION CONTACT</td>
<td>0.0</td>
<td>59</td>
</tr>
<tr>
<td>55 MORTTRAIN IN MANAGEMENT</td>
<td>0.0</td>
<td>59</td>
</tr>
<tr>
<td>56 TYPETECH TRAINING MANAGER RECEIVED</td>
<td>0.0</td>
<td>57</td>
</tr>
<tr>
<td>57 RECIVED TRAINING MANAGER RECEIVED</td>
<td>0.0</td>
<td>55</td>
</tr>
<tr>
<td>58 FIND A JOB OR DISABILITY</td>
<td>0.0</td>
<td>56</td>
</tr>
<tr>
<td>59 FEELING Source of HEALTH INFORMATION</td>
<td>0.0</td>
<td>60</td>
</tr>
<tr>
<td>60 FEELING Source of HEATH INFORMATION</td>
<td>0.0</td>
<td>60</td>
</tr>
<tr>
<td>61 WORK TOO HARD OR STRESSFUL</td>
<td>0.0</td>
<td>60</td>
</tr>
<tr>
<td>62 DEPRATIZED INTERNPS</td>
<td>0.0</td>
<td>67</td>
</tr>
</tbody>
</table>
C.OCCALC.STUDY OF OCCUPATIONAL ALCOHOL PROBLEMS

DOCUMENTATION FOR THE 303 VARIABLES IN THE FILE "NONAME"

<table>
<thead>
<tr>
<th>REL VARIABLE</th>
<th>NAME</th>
<th>MISSING PRT</th>
<th>VALUES PRT</th>
</tr>
</thead>
<tbody>
<tr>
<td>84 BCECC CONT</td>
<td>4. VERY UNLIKELY</td>
<td>0. 0</td>
<td>16</td>
</tr>
<tr>
<td>85 BCECP EXPECTED OCCURRENCE MANAGEMENT</td>
<td></td>
<td>0. 0</td>
<td>15</td>
</tr>
<tr>
<td>86 BCECP EXPECTED OCCURRENCE OCCUPATION</td>
<td>O.</td>
<td>0. 0</td>
<td>16</td>
</tr>
<tr>
<td>87 BCECH EXPECTED OCCURRENCE HOURLY</td>
<td>O.</td>
<td>0. 0</td>
<td>16</td>
</tr>
<tr>
<td>88 BCEC IN AGE GROUP 7</td>
<td>0. 0</td>
<td>0. 0</td>
<td>17</td>
</tr>
<tr>
<td>89 BCEC SPECIFIED EXPECTED AGE GROUP 0-30</td>
<td>0. 0</td>
<td>0. 0</td>
<td>18</td>
</tr>
<tr>
<td>90 BCEC IN POPULATION GROUP</td>
<td>0. 0</td>
<td>0. 0</td>
<td>18</td>
</tr>
<tr>
<td>91 BEPEG SPECIFIED EXPECTED POPULATION</td>
<td>O.</td>
<td>0. 0</td>
<td>20-45</td>
</tr>
<tr>
<td>92 BESC INAGE</td>
<td>O. 0</td>
<td>0. 0</td>
<td>21-15</td>
</tr>
<tr>
<td>REL VARIABLE</td>
<td>MISSING PAT VALUES</td>
<td>NAME</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>------------------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>92 EXPACE 034A</td>
<td>0 0</td>
<td>C.</td>
<td></td>
</tr>
<tr>
<td>93 EXPACE 034A</td>
<td>0 0</td>
<td>C.</td>
<td></td>
</tr>
<tr>
<td>94 EXPACE 034A</td>
<td>0 0</td>
<td>C.</td>
<td></td>
</tr>
<tr>
<td>95 EXPACE 034A</td>
<td>0 0</td>
<td>C.</td>
<td></td>
</tr>
<tr>
<td>96 TCTEXFAC TOTAL EXPECTED APPEARANCE C 034B</td>
<td>0 0 26</td>
<td>C.</td>
<td></td>
</tr>
<tr>
<td>97 EXPACE 035A</td>
<td>99 0 27-31</td>
<td>C.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REL VARIABLE</th>
<th>MISSING PAT VALUES</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>98 EXPACE 035A</td>
<td>99 0</td>
<td>C.</td>
</tr>
<tr>
<td>99 EXPACE 035A</td>
<td>99 0</td>
<td>C.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REL VARIABLE</th>
<th>MISSING PAT VALUES</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 EXPACE 035A</td>
<td>99 0</td>
<td>C.</td>
</tr>
<tr>
<td>101 EXPACE 035A</td>
<td>99 0</td>
<td>C.</td>
</tr>
<tr>
<td>102 EXPACE 035A</td>
<td>99 0</td>
<td>C.</td>
</tr>
<tr>
<td>103 EXPACE 035A</td>
<td>99 0</td>
<td>C.</td>
</tr>
<tr>
<td>104 EXPACE 035A</td>
<td>99 0 34-36</td>
<td>C.</td>
</tr>
<tr>
<td>105 EXPACE 035A</td>
<td>99 0</td>
<td>C.</td>
</tr>
<tr>
<td>106 EXPACE 035A</td>
<td>99 0</td>
<td>C.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REL VARIABLE</th>
<th>MISSING PAT VALUES</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>107 EXPACE 035A</td>
<td>99 0</td>
<td>C.</td>
</tr>
<tr>
<td>108 EXPACE 035A</td>
<td>99 0</td>
<td>C.</td>
</tr>
<tr>
<td>109 EXPACE 035A</td>
<td>99 0</td>
<td>C.</td>
</tr>
<tr>
<td>110 EXPACE 035A</td>
<td>99 0</td>
<td>C.</td>
</tr>
<tr>
<td>NO.</td>
<td>VARIABLE NAME</td>
<td>VARIABLE LABEL</td>
</tr>
<tr>
<td>-----</td>
<td>---------------</td>
<td>----------------</td>
</tr>
<tr>
<td>106</td>
<td>SSPRIP</td>
<td>EXP MEANS IDEAL PROBLEM</td>
</tr>
<tr>
<td>108</td>
<td>GSPM</td>
<td>AFFECTED HEALTH</td>
</tr>
<tr>
<td>109</td>
<td>GSPRM</td>
<td>AFFECTED PERSONAL RELATIONSHIPS</td>
</tr>
<tr>
<td>110</td>
<td>GSPFL</td>
<td>TROUBLE WITH LAW</td>
</tr>
<tr>
<td>111</td>
<td>CRSC</td>
<td>ANYONE IN COMPANY</td>
</tr>
</tbody>
</table>
C. O. OCCALC. STUDY OF OCCUPATIONAL ALCOHOL PROBLEMS

DOCUMENTATION FOR THE 303 VARIABLES IN THE FILE 'NAME' *

<table>
<thead>
<tr>
<th>REL VARIABLE NAME</th>
<th>VALUE</th>
<th>MISSING PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>168 OBST/GCP LOGT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>169 OBST/GCP LOGT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>170 OBST/GCP LOGT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>171 OBST/GCP LOGT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>172 OBST/GCP LOGT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>173 OBST/GCP LOGT</td>
<td>0</td>
<td>0.00</td>
</tr>
</tbody>
</table>

C. O. OCCALC. STUDY OF OCCUPATIONAL ALCOHOL PROBLEMS

DOCUMENTATION FOR THE 303 VARIABLES IN THE FILE 'NAME' *

<table>
<thead>
<tr>
<th>REL VARIABLE NAME</th>
<th>VALUE</th>
<th>MISSING PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>144 OBST/GCP CONT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>145 OBST/GCP CONT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>146 OBST/GCP CONT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>147 OBST/GCP CONT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>148 OBST/GCP CONT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>149 OBST/GCP CONT</td>
<td>0</td>
<td>0.00</td>
</tr>
</tbody>
</table>

C. O. OCCALC. STUDY OF OCCUPATIONAL ALCOHOL PROBLEMS

DOCUMENTATION FOR THE 303 VARIABLES IN THE FILE 'NAME' *

<table>
<thead>
<tr>
<th>REL VARIABLE NAME</th>
<th>VALUE</th>
<th>MISSING PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>140 OBST/GCP CONT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>141 OBST/GCP CONT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>142 OBST/GCP CONT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>143 OBST/GCP CONT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>144 OBST/GCP CONT</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>145 OBST/GCP CONT</td>
<td>0</td>
<td>0.00</td>
</tr>
</tbody>
</table>
### Documentation for the 303 Variables in the File "NAME"

<table>
<thead>
<tr>
<th>REL VARIABLE</th>
<th>VARIABLE LABEL</th>
<th>MISSING %</th>
<th>VALUES %</th>
</tr>
</thead>
<tbody>
<tr>
<td>178 O428</td>
<td>DISCUSS WITH</td>
<td>C.0 42</td>
<td></td>
</tr>
<tr>
<td>179 O42C</td>
<td>ASSIST WHERE</td>
<td>C. 0 63</td>
<td></td>
</tr>
<tr>
<td>180 O2201</td>
<td>ACTION</td>
<td>C. 0 46.15</td>
<td></td>
</tr>
<tr>
<td>181 O2202</td>
<td>ACTION</td>
<td>C. 0 46</td>
<td></td>
</tr>
<tr>
<td>182 O391</td>
<td>REASON</td>
<td>C. 0 47</td>
<td></td>
</tr>
<tr>
<td>183 O392</td>
<td>REASON</td>
<td>C. 0 47</td>
<td></td>
</tr>
<tr>
<td>190 O368</td>
<td>SATISFY</td>
<td>NO 0 54</td>
<td></td>
</tr>
<tr>
<td>191 O36C</td>
<td>APPRD</td>
<td>NO 0 55</td>
<td></td>
</tr>
<tr>
<td>192 O368</td>
<td>REASONS FOLLOW</td>
<td>C. 0 57</td>
<td></td>
</tr>
<tr>
<td>193 O368</td>
<td>SUPP</td>
<td>NO 0 58</td>
<td></td>
</tr>
<tr>
<td>194 O368</td>
<td>SUPP</td>
<td>NO 0 59</td>
<td></td>
</tr>
<tr>
<td>195 O368</td>
<td>SUPP</td>
<td>C. 0 60</td>
<td></td>
</tr>
<tr>
<td>196 O368</td>
<td>SUPP</td>
<td>C. 0 61</td>
<td></td>
</tr>
<tr>
<td>197 O368</td>
<td>SUPP</td>
<td>C. 0 64.55</td>
<td></td>
</tr>
<tr>
<td>198 O368</td>
<td>SUPP</td>
<td>C. 0 66.71</td>
<td></td>
</tr>
</tbody>
</table>
### Table 1: Personal Attitudes and Pressures

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERSONALITY ATTITUDE</td>
<td></td>
</tr>
<tr>
<td>PEER PRESSURE</td>
<td></td>
</tr>
<tr>
<td>SOCIAL LIFE</td>
<td></td>
</tr>
<tr>
<td>DRUGS</td>
<td></td>
</tr>
<tr>
<td>MISTRESS</td>
<td></td>
</tr>
<tr>
<td>LEGITIMATE LIES</td>
<td></td>
</tr>
<tr>
<td>LIKES TRAVEL</td>
<td></td>
</tr>
<tr>
<td>FINANCIAL</td>
<td></td>
</tr>
</tbody>
</table>

### Table 2: Motivations

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCIAL LIFE</td>
<td></td>
</tr>
<tr>
<td>DRUGS</td>
<td></td>
</tr>
<tr>
<td>MISTRESS</td>
<td></td>
</tr>
<tr>
<td>LEGITIMATE LIES</td>
<td></td>
</tr>
<tr>
<td>LIKES TRAVEL</td>
<td></td>
</tr>
<tr>
<td>FINANCIAL</td>
<td></td>
</tr>
</tbody>
</table>

### Table 3: Personality Attitudes

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERPERSONAL</td>
<td></td>
</tr>
<tr>
<td>MOTIVATION</td>
<td></td>
</tr>
<tr>
<td>PERSONALITY ATTITUDE</td>
<td></td>
</tr>
<tr>
<td>PEER PRESSURE</td>
<td></td>
</tr>
<tr>
<td>SOCIAL LIFE</td>
<td></td>
</tr>
<tr>
<td>DRUGS</td>
<td></td>
</tr>
<tr>
<td>MISTRESS</td>
<td></td>
</tr>
<tr>
<td>LEGITIMATE LIES</td>
<td></td>
</tr>
<tr>
<td>LIKES TRAVEL</td>
<td></td>
</tr>
<tr>
<td>FINANCIAL</td>
<td></td>
</tr>
</tbody>
</table>

### Table 4: Peer Pressures

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERSONALITY ATTITUDE</td>
<td></td>
</tr>
<tr>
<td>PEER PRESSURE</td>
<td></td>
</tr>
<tr>
<td>SOCIAL LIFE</td>
<td></td>
</tr>
<tr>
<td>DRUGS</td>
<td></td>
</tr>
<tr>
<td>MISTRESS</td>
<td></td>
</tr>
<tr>
<td>LEGITIMATE LIES</td>
<td></td>
</tr>
<tr>
<td>LIKES TRAVEL</td>
<td></td>
</tr>
<tr>
<td>FINANCIAL</td>
<td></td>
</tr>
</tbody>
</table>

### Table 5: Social Life

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERPERSONAL</td>
<td></td>
</tr>
<tr>
<td>MOTIVATION</td>
<td></td>
</tr>
<tr>
<td>PERSONALITY ATTITUDE</td>
<td></td>
</tr>
<tr>
<td>PEER PRESSURE</td>
<td></td>
</tr>
<tr>
<td>SOCIAL LIFE</td>
<td></td>
</tr>
<tr>
<td>DRUGS</td>
<td></td>
</tr>
<tr>
<td>MISTRESS</td>
<td></td>
</tr>
<tr>
<td>LEGITIMATE LIES</td>
<td></td>
</tr>
<tr>
<td>LIKES TRAVEL</td>
<td></td>
</tr>
<tr>
<td>FINANCIAL</td>
<td></td>
</tr>
</tbody>
</table>

### Table 6: Drug Use

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERSONALITY ATTITUDE</td>
<td></td>
</tr>
<tr>
<td>PEER PRESSURE</td>
<td></td>
</tr>
<tr>
<td>SOCIAL LIFE</td>
<td></td>
</tr>
<tr>
<td>DRUGS</td>
<td></td>
</tr>
<tr>
<td>MISTRESS</td>
<td></td>
</tr>
<tr>
<td>LEGITIMATE LIES</td>
<td></td>
</tr>
<tr>
<td>LIKES TRAVEL</td>
<td></td>
</tr>
<tr>
<td>FINANCIAL</td>
<td></td>
</tr>
</tbody>
</table>

### Table 7: Mistress

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERSONALITY ATTITUDE</td>
<td></td>
</tr>
<tr>
<td>PEER PRESSURE</td>
<td></td>
</tr>
<tr>
<td>SOCIAL LIFE</td>
<td></td>
</tr>
<tr>
<td>DRUGS</td>
<td></td>
</tr>
<tr>
<td>MISTRESS</td>
<td></td>
</tr>
<tr>
<td>LEGITIMATE LIES</td>
<td></td>
</tr>
<tr>
<td>LIKES TRAVEL</td>
<td></td>
</tr>
<tr>
<td>FINANCIAL</td>
<td></td>
</tr>
</tbody>
</table>

### Table 8: Legitimate Lies

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERSONALITY ATTITUDE</td>
<td></td>
</tr>
<tr>
<td>PEER PRESSURE</td>
<td></td>
</tr>
<tr>
<td>SOCIAL LIFE</td>
<td></td>
</tr>
<tr>
<td>DRUGS</td>
<td></td>
</tr>
<tr>
<td>MISTRESS</td>
<td></td>
</tr>
<tr>
<td>LEGITIMATE LIES</td>
<td></td>
</tr>
<tr>
<td>LIKES TRAVEL</td>
<td></td>
</tr>
<tr>
<td>FINANCIAL</td>
<td></td>
</tr>
</tbody>
</table>

### Table 9: Likes Travel

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERSONALITY ATTITUDE</td>
<td></td>
</tr>
<tr>
<td>PEER PRESSURE</td>
<td></td>
</tr>
<tr>
<td>SOCIAL LIFE</td>
<td></td>
</tr>
<tr>
<td>DRUGS</td>
<td></td>
</tr>
<tr>
<td>MISTRESS</td>
<td></td>
</tr>
<tr>
<td>LEGITIMATE LIES</td>
<td></td>
</tr>
<tr>
<td>LIKES TRAVEL</td>
<td></td>
</tr>
<tr>
<td>FINANCIAL</td>
<td></td>
</tr>
</tbody>
</table>

### Table 10: Financial

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERSONALITY ATTITUDE</td>
<td></td>
</tr>
<tr>
<td>PEER PRESSURE</td>
<td></td>
</tr>
<tr>
<td>SOCIAL LIFE</td>
<td></td>
</tr>
<tr>
<td>DRUGS</td>
<td></td>
</tr>
<tr>
<td>MISTRESS</td>
<td></td>
</tr>
<tr>
<td>LEGITIMATE LIES</td>
<td></td>
</tr>
<tr>
<td>LIKES TRAVEL</td>
<td></td>
</tr>
<tr>
<td>FINANCIAL</td>
<td></td>
</tr>
</tbody>
</table>

### Table 11: Expected Work Cues

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPECTED WORK CUES</td>
<td></td>
</tr>
<tr>
<td>INTERPERSONAL MOTIVATION</td>
<td></td>
</tr>
<tr>
<td>PERSONALITY ATTITUDE</td>
<td></td>
</tr>
<tr>
<td>PEER PRESSURE</td>
<td></td>
</tr>
<tr>
<td>SOCIAL LIFE</td>
<td></td>
</tr>
<tr>
<td>DRUGS</td>
<td></td>
</tr>
<tr>
<td>MISTRESS</td>
<td></td>
</tr>
<tr>
<td>LEGITIMATE LIES</td>
<td></td>
</tr>
<tr>
<td>LIKES TRAVEL</td>
<td></td>
</tr>
<tr>
<td>FINANCIAL</td>
<td></td>
</tr>
</tbody>
</table>

---

**Note:** The tables above summarize the variables and their descriptions related to occupational alcohol problems, including personality attitudes, peer pressures, social life, drug use, mistress, legitimate lies, likes travel, and financial aspects. Each table provides a structured overview of the variables involved in such studies for documentation purposes.
### C. Occalc-Study of Occupational Alcohol Problems

**Documentation for the 303 Variables in the File "NAME"**

<table>
<thead>
<tr>
<th>REL VARIABLE</th>
<th>VARIABLE LABEL</th>
<th>POS NAME</th>
<th>MISSING PAT</th>
<th>VALUES PAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>224 HABIT</td>
<td>DRINKING HABITS OF OCCUPATION</td>
<td></td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>235 ATMCL</td>
<td>INTERVIEW ATMOSPHERE NOTES</td>
<td></td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>236 ATMCL2</td>
<td>INTERVIEW ATMOSPHERE NOTES</td>
<td></td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>237 BELIEFS</td>
<td>CONCERNS BELIEFS</td>
<td></td>
<td>.07-09</td>
<td></td>
</tr>
<tr>
<td>238 BELIEFS</td>
<td>CONCERNS BELIEFS</td>
<td></td>
<td>.0</td>
<td></td>
</tr>
<tr>
<td>239 BELIEFS</td>
<td>CONCERNS BELIEFS</td>
<td></td>
<td>.0</td>
<td></td>
</tr>
<tr>
<td>240 ACTION</td>
<td>ACTION CONT</td>
<td></td>
<td>.0</td>
<td></td>
</tr>
<tr>
<td>241 ACTION</td>
<td>ACTION CONT</td>
<td></td>
<td>.0</td>
<td></td>
</tr>
<tr>
<td>242 ACTION</td>
<td>ACTION CONT</td>
<td></td>
<td>.0</td>
<td></td>
</tr>
<tr>
<td>243 ACTION</td>
<td>ACTION CONT</td>
<td></td>
<td>.0</td>
<td></td>
</tr>
<tr>
<td>244 ACTION</td>
<td>ACTION CONT</td>
<td></td>
<td>.0</td>
<td></td>
</tr>
</tbody>
</table>

---

**Values Present**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>224</td>
<td></td>
</tr>
<tr>
<td>235</td>
<td></td>
</tr>
<tr>
<td>236</td>
<td></td>
</tr>
<tr>
<td>237</td>
<td></td>
</tr>
<tr>
<td>238</td>
<td></td>
</tr>
<tr>
<td>239</td>
<td></td>
</tr>
<tr>
<td>240</td>
<td></td>
</tr>
<tr>
<td>241</td>
<td></td>
</tr>
<tr>
<td>242</td>
<td></td>
</tr>
<tr>
<td>243</td>
<td></td>
</tr>
</tbody>
</table>

**Missing Values**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>224</td>
<td></td>
</tr>
<tr>
<td>235</td>
<td></td>
</tr>
<tr>
<td>236</td>
<td></td>
</tr>
<tr>
<td>237</td>
<td></td>
</tr>
<tr>
<td>238</td>
<td></td>
</tr>
<tr>
<td>239</td>
<td></td>
</tr>
<tr>
<td>240</td>
<td></td>
</tr>
<tr>
<td>241</td>
<td></td>
</tr>
<tr>
<td>242</td>
<td></td>
</tr>
<tr>
<td>243</td>
<td></td>
</tr>
</tbody>
</table>

---

**Notes**

1. Community Problem
2. Provision Definition
3. Problem Increasing
4. Solution Discussed
5. Drug & Concern
6. Problem In North
7. Not Problem In North