

THE UNIVERSITY OF CALGARY

**A Psychometric Examination and Refinement of the Canadian Forces
Attrition Information Questionnaire (CFAIQ): Comparing the Reasons Cited by
Anglophones and Francophones in the "Leave Decision Process"**

by

Lt(N) David U. Molinari

A THESIS

**SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF MASTER OF SCIENCE**

DEPARTMENT OF PSYCHOLOGY

CALGARY, ALBERTA

June, 1996

© Lt(N) David U. Molinari 1996



National Library
of Canada

Acquisitions and
Bibliographic Services

395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque nationale
du Canada

Acquisitions et
services bibliographiques

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence

Our file Notre référence

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of his/her thesis by any means and in any form or format, making this thesis available to interested persons.

The author retains ownership of the copyright in his/her thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced with the author's permission.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de sa thèse de quelque manière et sous quelque forme que ce soit pour mettre des exemplaires de cette thèse à la disposition des personnes intéressées.

L'auteur conserve la propriété du droit d'auteur qui protège sa thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-20843-5

Abstract

The voluntary attrition process is highly complex with a multitude of influencing factors. Canadian Forces Personnel Applied Research Unit was tasked by National Defense Headquarters in 1981 to develop a conceptual model of attrition in the CF and a means by which it could be monitored. The Canadian Forces Attrition Information Questionnaire was subsequently developed (Lissak & Mendes, 1982). Questionnaire scales should be re-evaluated occasionally and systematically with respect to validity and reliability issues, and refinements should be made accordingly (e.g., Spector, 1992; Carmines & Zeller, 1979). The purpose of this study was to examine the psychometric properties of Section 1 of the CFAIQ. Additionally, this study tested the hypothesis that Anglophones and Francophones cite different reasons for voluntarily leaving the Canadian Forces. Results showed that the scale's high level of reliability can be maintained after the deletion of eight items while remaining a valid instrument. Results also showed that the aforementioned hypothesis was not fully supported. The implications of these findings are discussed.

ACKNOWLEDGEMENTS

I am in debt to a number of people for the assistance they provided me on this research project. First, I would like to thank my academic supervisor Dr. R. E. Franken and military supervisor Capt. K. Farley for their assistance and insights offered throughout this project. Second, I would like to thank Dr. L. Sulsky, Dr. D. Skarlicki, Dr. K. Courneya, and R. Isaac for their time and most helpful suggestions. Third, I would like to thank my friends Dr. R. Renger and Donovan Lawrence (MSc.) for their valuable thoughts and the many hours that they spent editing this paper. Finally, I would like to thank my wife, Denise, for believing in me and providing me with never-ending support.

TABLE OF CONTENTS

	Page
ABSTRACT.....	iii
ACKNOWLEDGEMENTS.....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	vii
LIST OF FIGURES.....	viii
LIST OF APPENDICES.....	ix
OVERVIEW.....	1
INTRODUCTION.....	4
LITERATURE REVIEW AND THEORETICAL OVERVIEW.....	9
Previous Research on Voluntary Attrition.....	9
Rationale Behind the Development of the CFAIQ.....	14
Phase 1: Conceptual Framework of CFARQ.....	15
Phase 2: Revision and Validation of the CFARQ.....	21
Phase 3: Distribution of CFAIQ and Implementation of CFAMS... 	24
Follow-up Research on the CFAIQ.....	29
Psychometric Issues.....	32
Objective of the Present Study.....	35

TABLE OF CONTENTS (continued)

METHOD..... 36

Participants..... 36

Procedure..... 37

Data Analysis..... 38

RESULTS..... 43

Step 1: Focus Groups and Item Analyses..... 43

Step 2: Reasons for Leaving for Sample One..... 54

Step 3: Reasons for Leaving for Sample Two..... 63

Step 4: Hypothesis Testing Anglophones Versus Francophones..... 73

Step 5: Item Analysis..... 87

DISCUSSION..... 88

LIMITATIONS..... 96

FUTURE DIRECTIONS..... 103

CONCLUSION..... 106

REFERENCES..... 108

APPENDICES..... 111

LIST OF TABLES

Table	Title	Page
1	Individual Variables of CF Model of Attrition/Retention.....	18
2	Organizational Variables of CF Model of Attrition/Retention.....	18
3	Extra-Organizational Variables of CF Model of Attrition/Retention.	18
4	Step 1 - Reliability Analysis on Original 46 Items.....	45
5	Step 1 - Item Analysis for Complete Data Set.....	47
6	Step 1 - Item Analysis for Filtered Data Set.....	48
7	Step 1 - Item Analysis Anglophone Data Set.....	49
8	Step 1 - Item Analysis Francophone Data Set.....	50
9	Step 1 - Deleted Items Section 1 CFAIQ.....	51
10	Step 1 - Most Important Reasons for Leaving for Anglophones.....	52
11	Step 1 - Most Important Reasons for Leaving for Francophones.....	53
12	Step 2 - PCA Ten-Factor Solution.....	55
13	Step 2 - PCA Six-Factor Solution.....	57-58
14	Step 2 - PCA Seven-Factor Solution.....	59-60
15	Step 2 - Reliability Analysis for Seven-Factor Solution.....	61
16	Step 2 - Hierarchical Factor Analysis for 4 Factor Solution (gp 1)..	62
17	Step 2 - Hierarchical Factor Analysis for 3 Factor Solution (gp 1)..	63
18	Step 3 - PCA Ten-Factor Solution.....	64
19	Step 3 - PCA Six-Factor Solution.....	68-69
20	Step 3 - PCA Seven-Factor Solution.....	70-71
21	Step 3 - Reliability Analysis for Seven-Factor Solution.....	71
22	Step 3 - Hierarchical Factor Analysis for 4 Factor Solution (gp 2)..	72
23	Step 3 - Hierarchical Factor Analysis for 3 Factor Solution (gp 2)..	73
24	Step 4 - PCA Seven-Factor Solution Anglophones.....	75-746
25	Step 4 - PCA Seven-Factor Solution Francophones.....	77-78
26	Step 4 - Most Important Reasons for Anglophones.....	82
27	Step 4 - Most Important Reasons for Francophones.....	83-84
28	Step 4 - Four-Factor Hierarchical PCA Anglophones.....	85
29	Step 4 - Three-Factor Hierarchical PCA Anglophones.....	85
30	Step 4 - Four-Factor Hierarchical PCA Francophones.....	86
31	Step 4 - Three-Factor Hierarchical PCA Francophones.....	87
32	Comparison of Factor Labels and Variance Accounted for by Factors for Separate Anglophone and Francophone Seven-Factor Solutions.....	94

LIST OF FIGURES

Figure	Title	Page
1	Mobley et al's. (1979) Expanded Turnover Model.....	13
2	CF Model of Attrition/Retention in the CF.....	17
3	Scree Plot Step 2 PCA's.....	55
4	Scree Plot Step 3 PCA's.....	66
5	Scree Plot Step 4 (Anglophones).....	78
6	Scree Plot Step 4 (Francophones).....	79

LIST OF APPENDICES

Appendix	Title	Page
A	Section 1 - Reasons for Leaving - CFAIQ.....	111-112
B	Attrition Information Questionnaire Comment Sheet...	113

**A Psychometric Examination and Refinement of the Canadian Forces
Attrition Information Questionnaire (CFAIQ): Comparing the Reasons Cited by
Anglophones and Francophones in the “Leave Decision Process”**

Overview

Voluntary employee attrition, defined as self-initiated turnover, as opposed to organization-initiated turnover, poses a serious problem for all organizations. Voluntary or “unscheduled” attrition results in millions of dollars in recruiting and selection expenses, training wastage, increased administration and decreased operational effectiveness (Parker, 1992; Koslowsky, 1987).

One way that organizations learn about personnel turnover is by developing and implementing an attrition monitoring system. More specifically, organizations may use an attrition monitoring system to forecast future turnover trends, understand the causes of problematic attrition, and analyze the outcomes or consequences of organizational turnover. In turn, management decisions are made as to whether changes to current policies, practices and programs are necessary. As required, plans to control and reduce attrition are developed and implemented (Parker, 1992).

Originally concerned about excessively high voluntary release rates, the Canadian Forces (CF) has over the past decade developed and implemented the Canadian Forces Attrition Monitoring System (CFAMS). CFAMS provides ongoing information on those attrition factors that result in personnel deciding to leave the military (Farley, 1994; Parker & Lyon, 1988; Lyon, 1987 & 1986; Mendes & Lyon, 1984; Lissak & Mendes, 1982). The Canadian Forces Attrition Information Questionnaire (CFAIQ) is an exit survey that is used to determine the reasons why service members have taken voluntary releases from the CF.

Steers and Mowday’s (1979) and Mobley, Griffeth, Hand, and Meglino’s (1979) models, that are based on job expectations, job attitudes, and intentions to leave,

provided the conceptual framework behind the CFAIQ (Lissak & Mendes, 1982; Mendes, 1983). The latter model specifically indicates how individual, organizational and extra-organizational factors affect attitudes and perceptions related to work, and outlines the linkages between these factors with intent to search, intent to leave, and turnover behaviors (Mobley et al, 1979). Mobley et al. (1979) also outlined a number of variables which can be used to identify the determinants of attrition. These variables were translated into a CF context and were then incorporated into the questionnaire (Mendes & Lyon, 1984). The CFAIQ was distributed to bases and stations in July 1989, thus making CFAMS operational (Parker, 1992).

Over the past several years the CF has been pressured to review its practices and procedures to ensure that it stays abreast of changes within our society from political, economical, social, and legal perspectives. This has resulted in the changing of many personnel policies over the past decade. Many of these changes are the product of forces which have been exerted both from outside of the CF and from within. For example, external influences, like the 1989 Canadian Human Rights Tribunal decision ordering the integration of women in the CF, have led to significant personnel changes in the CF. Social influences such as downsizing and budgetary constraints have also had a major impact on the way the CF conducts its business. These external changes have necessitated that the CF change internally.

Feedback received in Section 1 - Additional Reasons for Leaving - of the CFAIQ over the past several years alerted Canadian Forces Personnel Applied Research Unit (CFPARU) researchers that CF members might be leaving the organization as a result of being dissatisfied with the changes associated with newly implemented personnel policies. New and potentially problematic personnel issues were increasingly being reported by departing members and this alerted researchers about the possibility of a trend developing. Initial and qualitative analysis of completed questionnaires indicated that a large number of additional reasons for leaving the CF had not been previously

identified and included in the initial construction of the questionnaire. In addition, descriptive statistical analysis indicated that several of the questionnaire's original items appeared to be unimportant in the leave decision process.

As a result, CFPARU requested that the psychometric properties of Section 1 - Reasons for Leaving - of the CFAIQ be re-evaluated (Memorandum, 5 June 1995). Furthermore, it was determined that the initial formulation of items for this section had occurred under less than ideal conditions. Although the CFAIQ was designed to be a bilingual questionnaire, its original items were generated primarily by Anglophone research officers with little or no input from Francophone research officers or focus groups comprised of Francophone participants. Therefore, CFPARU requested that the psychometric properties of the items in Section 1 be examined from both an Anglophone and Francophone perspective. As a result, the purpose and scope of this study was to analyze the reasons for leaving section from a more practical validity perspective (as opposed to a strictly theoretical validity perspective) with respect to issues of content and construct validity, and reliability (for both Anglophones and Francophones). Also, hypothesis testing was conducted on the reasons that Anglophones and Francophones cite for leaving the CF. Archival research was conducted on the CFAIQ data base which currently consists of over 12,000 respondents.

Prior to proceeding to the development of the rationale behind the current study, however, a more in-depth introduction will be provided on voluntary turnover and the development of the CFAMS. In addition, several areas of theoretical and empirical research relevant to this project will be reviewed. First, previous research on voluntary attrition will be reviewed. Second, the rationale behind the development and implementation of the CFAIQ will be presented. Finally, follow-up research on the CFAIQ will be examined and reviewed.

Introduction

Over the past two decades, voluntary attrition rates, defined as self-initiated turnover, as opposed to organization-initiated terminations, in the Canadian Forces (CF) have fluctuated from one extreme to the other. Voluntary attrition was particularly high in the early part of the 1980's and was viewed by the CF as being perhaps the most significant organizational problem of that time. For example, for the entire 1980/81 fiscal year 6,443 officers and other ranks voluntarily took their release from the CF. During the 1981/82 fiscal year 5,573 officers and other ranks were released for voluntary reasons (DPIS 2-3-2, 1996). These figures respectively account for 55.9% and 53% of the total number of releases taken during these time frames.

In recent years the problematic issues associated with voluntary attrition have been temporarily superseded with other organizational concerns relating to "personnel downsizing" and "organizational restructuring/streamlining". Since 1990, the CF has implemented several personnel Forced Reduction Programs (FRP's) and, as a result, the number of voluntary releases have been drastically reduced. For example, for the entire 1992/93 fiscal year 1,993 officers and other ranks voluntarily took their release from the CF. During the 1993/94 fiscal year 1,905 officers and other ranks were released for voluntary reasons (DPIS 2-3-2, 1996). These figures respectively account for 41.4% and 37.8% of the total number of releases taken during these time frames.

The CF has set a minimum manning target of 60,000 Regular Force members. These personnel cuts are due to be met no later than by the end of the 1996/97 fiscal year. With no further cuts in sight, personnel turnover will inevitably stabilize somewhat in the CF and voluntary attrition will more than likely regain its previous status as a serious organizational problem. Despite the fact that the CF, like most other large organizations, views personnel turnover as "a necessary cost of doing business", it is still required to make a large capital investment in every individual that enrolls in the organization (Parker, 1992). Furthermore, researchers report that voluntary

employee attrition poses a serious problem for all organizations and personnel (Mobley, Griffeth, Hand, & Meglino, 1979; Koslowsky, 1987).

From an organizational perspective, voluntary or “unscheduled” attrition may result in millions of dollars in recruiting and selection expenses, training wastage, increased administration and decreased operational effectiveness (Koslowsky, 1987; Parker, 1992). Furthermore, in most cases, it is generally the organization and ultimately the public that absorbs the hidden costs associated with voluntary turnover.

This is not to say, however, that all outcomes of voluntary attrition have negative consequences for the organization. According to Koslowsky (1987), there are direct and indirect positive outcomes associated with personnel voluntarily leaving the organization. Directly, it has been shown that “replacement” employees tend to receive lower salaries and other compensation benefits than their predecessors. Interpersonal conflicts might also be reduced or eliminated with the departure of one or more of the antagonists. In addition, morale might increase when personnel see that opportunities exist for promotion within the organization. Indirectly, the organization might gain as the result of ridding itself of its “deadwood” and creating the opportunity for employees with new and creative ideas to be hired on (Koslowsky, 1987).

From a personnel or individual perspective, there are a number of negative consequences associated with voluntary turnover. In cases where the employee finds him/herself without a job, the individual may experience an increase in their level of personal stress. This type of scenario can have both a financial and psychological effect on the person. Increased personal stress and anxiety may also adversely impact on personal health, family cohesion, and commitment towards future employment (Koslowsky, 1987).

On a more positive note, it is possible that an individual might experience some form of clinical gain. For example, an employee might reduce his or her level of

personal stress upon leaving a stressful job or working environment for less stressful employment. In addition, the individual might experience career growth by leaving their present job for new opportunities. Voluntary turnover, therefore, can be a means of striving for or achieving specific career goals (Koslowsky, 1987).

Knowledge of the positive and negative consequences associated with voluntary attrition is not, however, sufficient information for most organizations. Some companies attempt, through various methods, to determine the reasons why their employees voluntarily leave the job. One way that organizations learn about turnover is by developing and implementing an attrition monitoring system. Attrition monitoring systems can provide organizations with ongoing information (which is normally attained through either exit questionnaires and/or interviews) on those attrition factors that result in personnel deciding to leave their organization (Parker, 1992). Furthermore, organizations may use an attrition monitoring system to forecast future attrition trends, understand the causes of problematic attrition, and analyze the outcomes or consequences of organizational attrition. In turn, management decisions are made as to whether or not changes to current policies, practices and programs are necessary (Parker, 1992).

Concerned about the excessively high voluntary release figures experienced in the early 1980's, the CF set out to reduce the financial losses and personnel deficiencies associated with voluntary attrition. As a result, the CF has over the past fourteen years developed and implemented the Canadian Forces Attrition Monitoring System (CFAMS). CFAMS provides National Defence Headquarters (NDHQ) with ongoing information on those attrition factors that result in personnel deciding to leave the military. CF research on attrition issues has shown that there are many reasons why personnel voluntarily leave the military, some of which include: undesirable working conditions, unwanted employee relocation, lack of job skills, out of position employment (e.g., female sailors employed as clerical staff ashore as a result of too

few sea-going positions), underemployment, lack of advancement opportunities, unfair promotion policies/system, inadequate pay, poor benefits, spousal and/or peer pressures, inadequate training, and insufficient opportunity to increase one's level of education (Farley, 1994; Parker, 1992; Parker & Lyon, 1988; Lyon, 1987 & 1986; Mendes & Lyon, 1984; Lissak & Mendes, 1982).

The Canadian Forces Attrition Information Questionnaire (CFAIQ) is a bilingual exit questionnaire that is presently being used to solicit the opinions of Anglophone and Francophone service members who have served in the military and are now returning to civilian life (questionnaires are, however, completed on a voluntary basis). The information gained from the CFAIQ is then analyzed and used to predict future attrition trends, understand the causes of problematic attrition, and analyze the outcomes or consequences of attrition in the CF (Parker, 1992). In turn, management decisions are made by Assistant Deputy Minister (Personnel) [ADM(Per)] in NDHQ as to whether changes to current CF policies, practices and programs are necessary. As required, plans to control and reduce attrition are developed and implemented (Parker, 1992).

The CF has for the past decade closely monitored the problems associated with personnel attrition. For example, past research has shown that there are different rates of voluntary attrition between Francophone and Anglophone non-commissioned members (NCM's) in the "hard" sea-going occupations of Canada's Navy - with Francophones experiencing significantly higher turnover rates than their Anglophone counterparts (Farley, 1994). Furthermore, Farley (1994) examined the reported reasons for Anglophones and Francophones voluntarily leaving the CF. Consistent with previous research, it was found that Francophones cited family issues as their most important reason for their turnover decision as opposed to Anglophones who reported job related issues (Farley, 1994; Parker, 1992; Mendes & Lyon, 1984).

The CFAIQ has been administered since 1987 and, to-date, a data base consisting of over 12,000 respondents has been accumulated. Although preliminary reliability, content validity and criterion-related validity analyses were conducted either during the development of the CFAIQ or shortly after its implementation, these earlier research projects were unable to draw any conclusive statements about the psychometric properties of the questionnaire as a result of their sample groups being too small (Lissak & Mendes, 1982; Mendes & Lyon, 1984; Parker & Lyon, 1988; Parker, 1992). As a result, it is believed that a psychometric re-evaluation at this point in time may prove beneficial to the future administration and analysis of the questionnaire.

Furthermore, the CF has been pressured over the past several years to review its practices and procedures to ensure that it stays abreast of changes within our society from political, economical, social, and legal perspectives. This has resulted in many recent changes to personnel policy. For example, external influences, like the 1989 Canadian Human Rights Tribunal decision ordering the integration of women in the CF, have led to significant personnel changes in the CF. Social influences such as downsizing and budgetary constraints have also had a major impact on the way the CF conducts its business. These external changes have necessitated that the CF change internally.

Feedback received in Section 1 - Additional Reasons for Leaving - of the CFAIQ alerted Canadian Forces Personnel Applied Research Unit (CFPARU) researchers that CF members were leaving the organization as a result of being dissatisfied with some of these changes to personnel policy. New and potentially problematic personnel issues were increasingly being reported by departing members. A superficial analysis of completed questionnaires over the past several years indicated that a large number of reasons for leaving the CF had not been previously identified and included in the initial construction of the questionnaire. In addition, descriptive statistical analysis

indicated that several of the questionnaire's original items appeared to be unimportant in the leave decision process.

As a result, CFPARU requested that the psychometric properties of Section 1 - Reasons for Leaving - of the CFAIQ be re-evaluated (Memorandum, 5 June 1995). In addition, they requested that the psychometric properties of this section be examined from both an Anglophone and Francophone perspective. The rationale for this request was based on the fact that the questionnaire, which is distributed in bilingual format, was formulated with minimal input from Francophone researchers and focus group participants.

The primary intent and scope of the current thesis was, therefore, to examine the psychometric properties of Section 1 - Reasons for Leaving - of the CFAIQ from a practical perspective and refine the scale so that it more accurately reflects today's organizational climate (with respect to both Anglophones and Francophones). In addition, hypothesis testing was conducted on the reasons that both Anglophones and Francophones cite as being important to their leave decisions. However, before proceeding to the logic of the current study; several areas of theoretical and empirical research will be reviewed.

Literature review and theoretical overview

Previous research on voluntary attrition

Early CF research on attrition and retention by Mallett (1974) indicated that, although military graduate officers expressed a high degree of satisfaction with their careers, they tended to focus mainly on the future and their decision to stay or leave was related to their perception of future military career opportunities. The officers in this study also tended to compare their future in the CF with a potential future outside the organization. For officers reaching the end of their compulsory service

engagement, the results of the study indicated that motivation toward further employment in the CF was generally linked to the opportunity for personal, educational and professional development, and the likelihood of using their skills and abilities in challenging employment.

Research by Fournier & Keates (1975) showed that a servicemember's decision to leave the military was a combination of "pull" and "push" factors. Pull factors were described as those things which attract a person toward some new form of employment and push factors were described as those things which cause an individual to leave their present employment. Several themes emerged from this research that indicated military personnel: (1) desired challenging, worthwhile employment to sustain a positive self image; (2) wished to be a part of an orderly, stable organization that utilized a code of discipline to achieve rational goals; and, (3) asked for strong, explicit people-oriented CF policies and management strategies.

Research by Pinch (1975) showed that geographical differences were associated with attrition rates. Results of this study found that a significantly higher percentage of Albertan than Nova Scotian military recruits took their releases from the CF to pursue employment in their own respective province. Hamel (1978) further examined environmental influences and individual differences on the stay/leave decision. Studying recruit attrition/survival, he found that staying behavior was related and varied with respect to social background, pre-enrollment education, and previous employment. Results indicated that those recruits who had less education and limited work experience were higher risks for leaving the organization.

In addition, Sinaiko, Scheflen, Anderson, Dodd, Godwin, James, and Pinch (1980) formed a common data base on attrition for the Canadian, British, and United

States' Forces and, in so doing, noticed that there were many similarities in attrition patterns. They found that such contributing variables as age, education, and mental ability, that have an impact on the attrition process, were similar across these militaries.

Although a multitude of civilian studies have examined various aspects of the turnover process, research has primarily focused on such issues as incentives, organizational practices, organizational climate, job content, satisfaction, intentions, expectations, demographic variables, psychological aptitude, and performance characteristics to help explain employee attrition/turnover (Mobley, Griffeth, Hand & Meglino, 1979). Over the past two decades, however, researchers have been advocating in increasing numbers that a comprehensive model/systems approach be used to more effectively study the turnover process (Koslowsky, 1987; Mobley, Griffeth, Hand & Meglino, 1979; Steers & Mowday, 1979).

Mobley et al. (1979) conducted a review of 90 employee turnover studies and best conceptualized the process in a comprehensive turnover model. They reported that age, tenure, overall satisfaction, job content, intentions to stay, and commitment were issues consistently and negatively associated with turnover. Mobley (1979) and his colleagues found, however, that these factors explained less than 20 percent of the turnover behaviour. They, therefore, argued that more in-depth research was necessary to account for additional contributing factors. Thus, they developed a conceptual model of the turnover process (see Figure 1 on page 13). Their model includes the following characteristics:

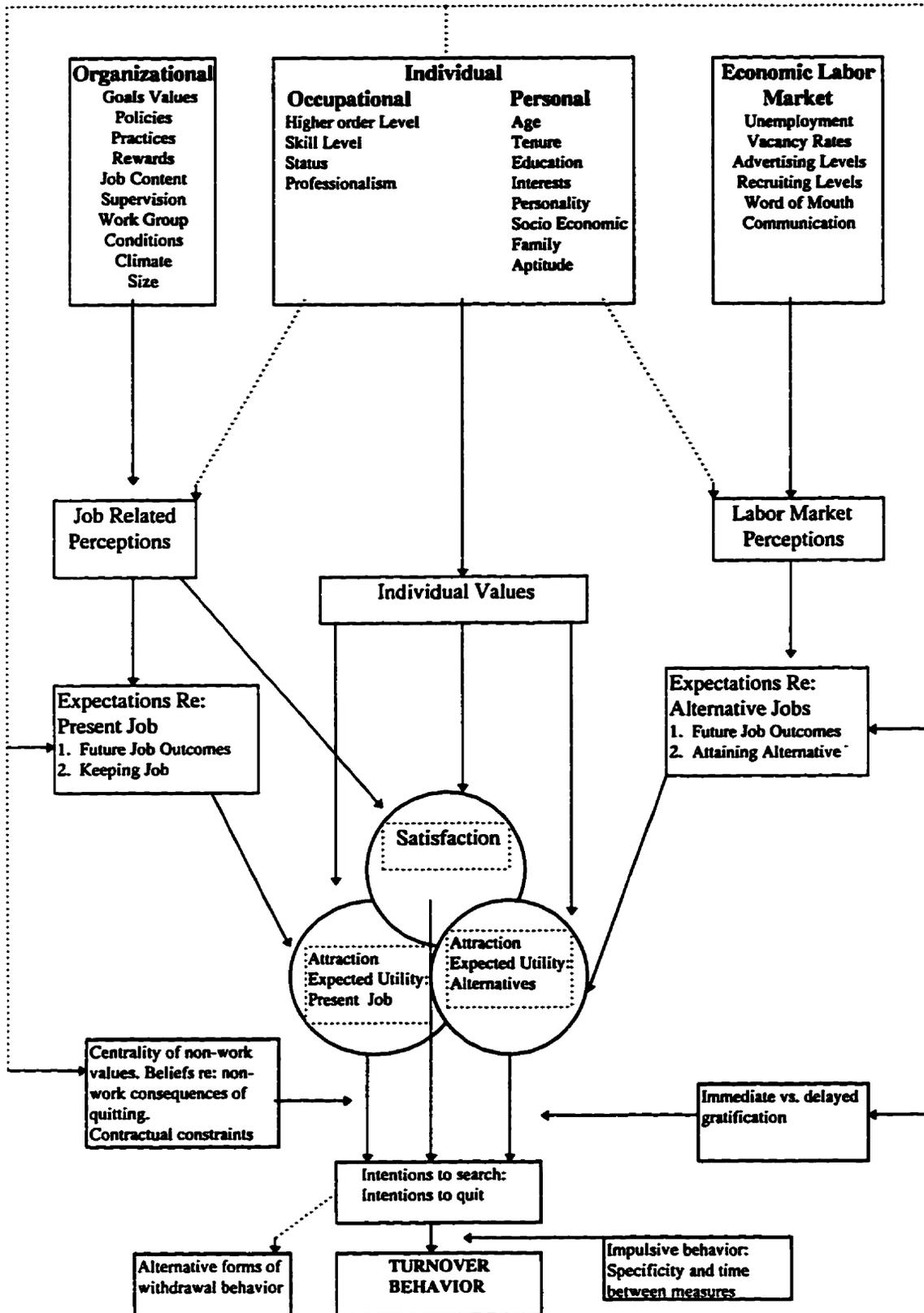
1. The model is based on individual-level turnover behaviors and explicitly recognizes individual differences in perceptions, expectations, and values. Also, it recognizes individual differences in personal and occupational variables.
2. Perception and evaluation of alternative employment is explicitly included in the model.

3. **The role of centrality of work values and interests are recognized. Beliefs regarding non-work consequences of staying or leaving are also specifically included.**
4. **Job satisfaction (present affect), job attraction (expected future affect), and attraction of attainable alternatives are postulated to contribute jointly toward voluntary attrition.**
5. **Intention to leave is believed to be the immediate precursor of voluntary attrition. This relationship can be attenuated by impulsive behavior and the time between measurement of intentions and behavior (Mobley et al., 1979).**

In addition, Mobley et al.(1979) postulated that attitudes and perceptions form occupational expectations that are associated with an individual's level of satisfaction with his/her present job or desire to pursue alternate work. In combination, these factors influence an individual's decision to look for other forms of employment.

Similarly, Steers and Mowday (1979) suggested that a model approach should be taken to more adequately determine the processes that give rise to voluntary personnel attrition. In supporting Mobley et al's. (1979) position, they concluded that more attention needs to be devoted to research that uses and tests models of the attrition process. Furthermore, they argued that future research on this topic must take more than just the processes that lead up to voluntary attrition into consideration and incorporate the notion of its consequences.

Figure 1: Mobley et al's. (1979) expanded turnover model



Michaels and Spector (1982) tested the expanded turnover model of Mobley et al. They conducted path analysis and found that their results were consistent with the model. In addition, Koslowsky (1987) reported that a large number of studies have shown that many different variables are associated with voluntary attrition. He reported that most studies explain less than 10% of variance and rarely is more than 16% accounted for. He added that, unlike most other models of attrition, Mobley et al.'s (1979) theoretical conceptualization of the turnover process was unique in that it was able to account for over 20% of the variance.

It is evident, therefore, that there are many factors that contribute to the turnover process. In addition, these factors are no longer typically studied in isolation. As recommended by Mobley et al. (1979) and Steers and Mowday (1979), researchers are currently using comprehensive model/systems approaches to study the voluntary attrition process (Koslowsky, 1987; Lissak & Mendes, 1982). Using Mobley et al.'s (1979) expanded model of the turnover process as a conceptual starting point, the CF developed its own theoretical model for personnel who voluntarily take their release from the organization

Rationale behind the development of the CFAIQ

The current version of the CFAIQ has evolved over the past fourteen years and is the result of a number of revisions that were made to the original Canadian Forces Attrition/Retention Questionnaire (CFARQ) (Lissak & Mendes, 1982; Mendes, 1983; Mendes & Lyon; 1984; Lyon, 1986; Parker & Lyon, 1988). From a chronological perspective, the CF's concern with voluntary or unscheduled attrition from the military was initially voiced in ADM(Per) Group Instruction 6/81, as follows:

“Voluntary attrition is one of the most significant problems facing the CF today. Every year millions of dollars in recruiting and training costs are wasted because members decide to leave the Service prior to CRA [Compulsory Retirement Age]. In years to come the problem will become even worse as the anticipated shrinkage

in the recruiting pool makes it increasingly difficult to replace members who leave” (cited in Lissak & Mendes, 1982, p.2).

These concerns resulted in the establishment of two attrition monitoring and analyses positions within ADM(Per) Group. The first position was located in the Directorate of Personnel Requirements and Control (DPRC), and was responsible for monitoring attrition rates and producing reports of collected data. The second position was located in the Directorate of Personnel Selection, Research and Second Careers (DPSRSC), and was responsible for providing interpretation of the DPRC attrition data.

At approximately the same time, the Canadian Forces Personnel Applied Research Unit (CFPARU) was tasked by ADM(Per) Group Instruction 6/81 to develop and implement CFAMS. The primary aim of this system was to determine why people leave the CF. CFPARU adopted a three-phase research strategy, as follows:

- a. Phase 1: Development of the basic conceptual framework that was followed by the preparation and pretesting of the CFARQ (Lissak & Mendes, 1982; Mendes, 1983);
- b. Phase 2: Revision and validation of the CFARQ (Mendes & Lyon, 1984; Lyon, 1986, 1987);
- c. Phase 3: Distribution of the CFAIQ and implementation of the CFAMS (Parker & Lyon, 1988).

Phase 1: Conceptual framework of CFARQ

Lissak and Mendes (1982) noted that, “Efforts to reduce attrition in the past have been hampered by an inability to create and implement a policy to deal with the problem in a uniform and consistent manner throughout the entire CF” (p.2). They felt that to overcome this problem, they would need to formulate a clear and comprehensive picture of the process of attrition in the CF. There were five objectives associated with Phase 1, and were as follows; (1) development of a conceptual model

of attrition/turnover in the CF; (2) development of a model outlining the stages that personnel encounter in deciding to leave the organization; (3) collection of preliminary data; (4) data analysis; and (5), modification of models and questionnaires.

Lissak and Mendes (1982) formulated a practical conceptual framework which incorporated a variety of variables from the existing literature while attempting to address CF specific issues such as military lifestyle and conditions of service (see Figure 2 on page 17). Mobley et al.'s (1979) Employee Turnover Process Model and Steers and Mowday's (1979) work provided the rationale for developing a conceptual model for a CF attrition information system. The CFARQ was developed, in part, based on job expectations, job attitudes, and intention to leave models.

The model was expanded to incorporate relevant CF issues and opportunity theory (Rothstein, 1980). According to Mendes and Lyon (1984), the availability of alternate employment opportunities is an extremely important factor with respect to attrition behavior. Opportunity theory postulates that as outside opportunities occur throughout service careers, personnel consider these external opportunities and in turn make future career and occupational decisions. In addition, when the economic climate in Canada worsens and unemployment rates increase, there is a reduction in the mobility of the work force as career change opportunities dry-up (Lissak & Mendes, 1982; Warner & Solon, 1991). These factors seem to have a major influence on CF attrition levels (Mendes & Lyon, 1984).

Lissak and Mendes' (1982) conceptual framework included a variety of individual, organizational, and extraorganizational factors which affect the formation of job attitudes (see Tables 1-3 on p.18). Individual variables include such things as: age, gender, education, language, and a variety of other characteristics that the person brings to the organization. Organizational variables include such things as: occupation, element, rank, and other characteristics that the organization provides to its personnel. Extra-organizational variables include such things as: marital status,

accommodation, dual careers, and other characteristics that might impact on the individual and the CF.

Figure 2: Conceptual model of attrition/retention in the CF

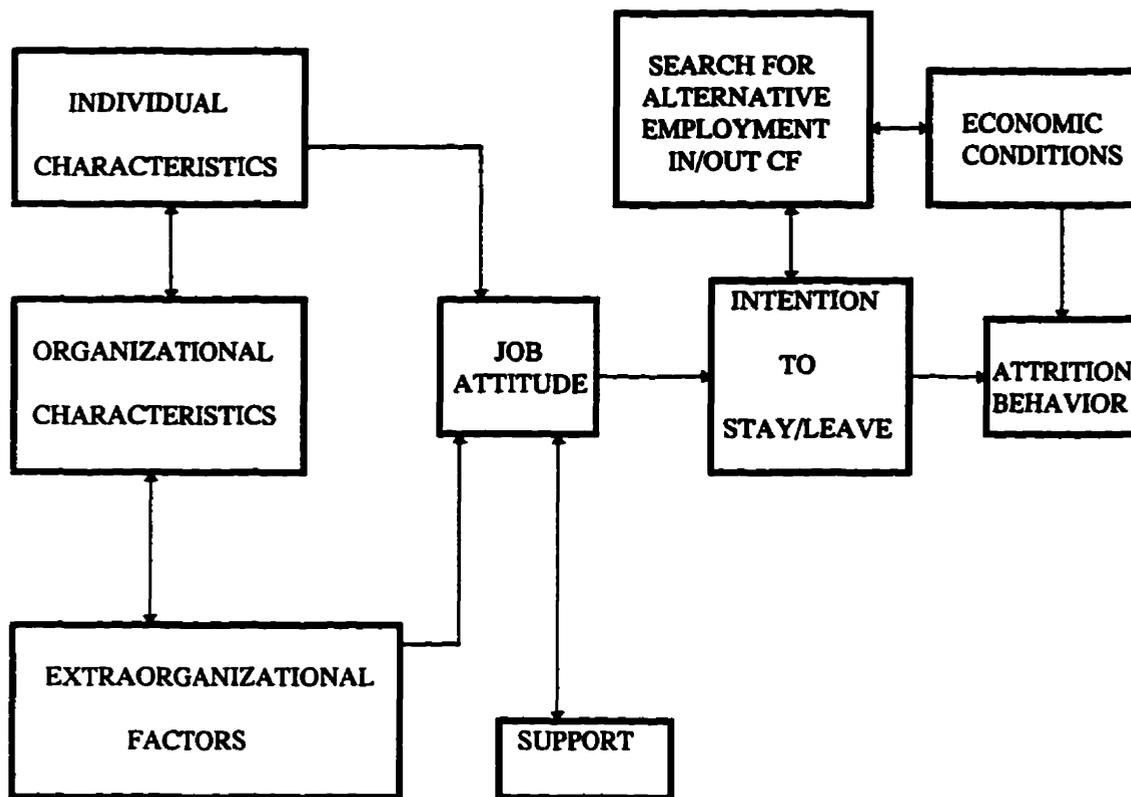


Table 1.

Individual Variables		
Work challenge	Credit for Work	Responsibility
Sex Discrimination	Respect	Stress
Co-worker Relationships	Freedom of Speech	Interest
Job/Vocation Match	Retraining Needs	Lifestyle
Supervisor Relationships		

Table 2.

Organizational Variables		
Postings	Pay	Benefits
Compensation	Job Security	Promotion
Performance Evaluation	Hours of Work	Time Away
Retirement Policy	Tools and Equipment	Safety Hazards
Physical Environment	Terms of Service	

Table 3.

Extra-organizational Variables		
Attractiveness of Alternatives	Accommodation Transportation	Family Distance from Work

Furthermore, Lissak and Mendes (1982) postulated that these variables and characteristics influence the cognitive processes by which personnel acquire job attitudes regarding “working conditions, advancement opportunities, pay and benefits, co-workers, and supervisors” (p.7). These job attitudes are then to some degree influenced by family (spouses and dependents) and support factors. In turn, job attitudes result in the formulation of an intention to either stay in or leave the organization. With respect to the leave intention, the individual may seek out alternate

employment both internally (e.g., occupation transfer) and externally in the civilian sector. In the latter case, present economic conditions and considerations also play a key role in explaining voluntary attrition. Once the individual is aware of and has evaluated the options available, he or she in turn makes a decision as to whether they will stay or leave the organization (Mendes & Lyon, 1984).

Mendes (1983) reported that the rate at which personnel voluntarily leave the CF is associated with such factors as “conditions in the local labour market, unemployment rates, and interest rates” (Mendes, 1983, p.3). According to Mendes (1983), personnel who want to leave the military tend to take their release after they find alternative work outside of the organization.

Based on all of the aforementioned factors, Lissak and Mendes (1982) developed a pilot-test version of the CFARQ and subsequently conducted a pilot study to determine why some members leave the CF, while others remain. Their instrument consisted of three sections. Section one listed reasons for staying or leaving, section two considered conditions of service in the military, and section three collected demographic information. The pilot study was administered to a total of 428 personnel from seven military bases across Canada. Other issues, for example, work attitudes, commitment, and intentions to stay or leave were also examined during this phase of the project (Mendes, 1983). In essence, the pilot study was conducted to determine whether the questionnaire was composed of items that could discriminate between stayers and leavers (Mendes, 1983).

Results of Mendes and Lissak’s (1982) research indicated that intention to leave the CF was associated with three factors: (1) a persons attitude towards the organization; (2) the support received from family, friends and peers related to the leave decision; and, (3) the availability of alternatives. According to the authors, personnel who were dissatisfied with the CF sought social support and started to look for alternatives. The authors noted, however, that their “model predicts [predicted]

intentions to leave, and not the actual act of leaving the CF. The relationship between intention to leave the CF and the act of leaving was expected to be quite strong (except under unusual circumstances)” (p.4).

Mendes and Lissak’s (1982) results indicated that a negative shift (lowering) in an individual’s general attitude toward the organization tended to activate the “leave or stay” decision process. As a result, the authors postulated that it would be extremely important to determine the factors that activate the process of leaving. Looking at the relationship between the benefits that personnel receive from the CF and their attitudes towards work, the authors found that members do not turnover voluntarily from the organization due to dissatisfaction with benefits. Instead, the data indicated that the manner by which personnel “perceive and evaluate the methods and procedures, used in the CF is related to their attitudes toward the CF. Those who feel that they can work within these arrangements and procedures tend to be more satisfied than those who do not” (p.5). They concluded, therefore, that research on the methods and procedures affecting personnel decisions (e.g., pay, performance appraisals, resource allocation, etc.) would be the best direction in which to proceed.

Using satisfaction ratings, ratings of peer support for leaving the CF, and measures of job opportunities, Lissak and Mendes (1982) were able to predict a member’s intention to leave the organization ($R=.81$) for a period of approximately one year. The authors noted that, although they had been reasonably successful in predicting intention to stay in the organization for up to one year, they were unable to predict intention to stay in the military until CRA. They did, however, report that the data collected in this phase of the project should be interpreted with caution due to a small sample size ($N=428$). From a practical perspective, they argued that these results indicated that there was a need to develop a “valid diagnostic instrument that can [could] be used to predict short-term (one to two years) intentions to stay in the CF” (p.5). Thus, the CFARQ was refined for later use in Phase 2 of the project.

Phase 2: Revision and validation of the CFARQ

Phase 2 of the project consisted of a CF-wide survey on attrition and retention. Similar to Phase 1, the aim of Mendes and Lyon's (1984) research was to identify those factors that contributed to either leave or stay decisions. Again, their study was designed to sample both those individuals leaving the military and those remaining in the organization. The rationale behind this approach was to examine the perceptions and views of both "leavers" and "stayers", incorporating an assessment of both actual and potential attrition factors. Sixteen CF bases and 11 of Her Majesty's Canadian Ships participated in this study, with a total combined sample of 1,920 - 1691 stayers and 229 leavers.

Some of the revisions to the pilot-test CFARQ consisted of "adapting the work-related questions to the military context, addressing issues related to peer and family support, and adding specific questions concerning benefits offered by the CF to its members" (Mendes & Lyon, 1984, p.14). The CFARQ-Revised was comprised of three sections of questions. The first section focused on reasons for leaving, job attitude, intention to stay-or-leave, job search behavior, and organizational commitment and loyalty. The second section focused on individuals' evaluations of the conditions of service in the military (e.g., perceived organizational fairness with respect to personnel evaluation, equity of the promotion system, and fairness of assigned postings). The third section requested demographic/biographic information.

A principal components factor analysis (PCA), using pairwise deletion and iteration, was conducted on Section 1 of the CFARQ in order to reduce the data into a more manageable number of homogeneous factors. Their analysis resulted in a seven-factor pre-rotation solution with eigenvalues ranging between 5.778 and 1.071. The authors reported that the seven factors explained 62.4% of the total variance. The factor matrix was rotated using a Varimax approach. The authors reported that

“variables having a significant loading on one or more of the seven factors were retained for use in the next stage of the analysis” (Mendes & Lyon, 1984, p.45).

More specifically, results from their research indicated that while both “leavers” and “stayers” held similar concerns about their employment in the CF, they had different perspectives on the nature of their work, their relationships with supervisors, and family or lifestyle issues. As previously mentioned, their results identified seven major factors associated with a leave or a potential leave decision, which they labeled: postings (undesirable postings, postings without promotion, and postings not having been requested); nature of work (unclear idea of job requirements, insufficient skills to accomplish the job, out of occupation employment, and underemployment within occupation); advancement opportunities (insufficient opportunities for advancement, unfair promotion policies, unfair promotion system, and insufficient promotions); pay (insufficient pay, higher wages for civilian equivalent employment); benefits (insufficient compensation incentives, inadequate fringe benefits, unsatisfactory pension plan, and problematic accommodation); CF lifestyle (negative peer and/or family support, dissatisfaction with CF rules and regulations, loss of organizational pride, and military not perceived as being a career); and, occupation/classification recognition (lack of new skill acquisition, lack of feeling of belongingness to one’s occupation, military occupations/acquired skills not recognized in civilian world, and dissatisfaction with respect to the usability of occupational skills).

During the second level of analyses, Mendes and Lyon (1984) conducted a discriminant analysis to identify which factors were most highly correlated with the stayer and leaver groups. The authors also showed that five out of the seven aforementioned factors significantly discriminated between stayers and leavers. Leavers reported four factors - the nature of their work, benefits, CF lifestyle, and occupation/ classification recognition - as playing a role in their leave decision. Stayers, on the other hand, frequently cited postings as being a factor of concern with

respect to a potential leave decision. Both leavers and stayers reported that pay and advancement opportunities were important issues in their decision or potential decision to leave the military.

With respect to differences between Anglophone and Francophone leavers, their results showed that Anglophones reported that nature of work (75.7%), benefits (69.4%), and CF lifestyle (66.3%) were the three major factors associated with their voluntary leave decision. Similarly, Francophones reported that nature of work (71.1%) and CF lifestyle (84.7%) were the two major factors related to their voluntary decision to leave the organization.

Mendes and Lyon's (1984) analysis of Canadian unemployment rates and the attrition rates for CF personnel showed that when unemployment rates increase, attrition rates decrease. A significant negative relationship was found to exist for both Other Rank ($r = -.739$) and Officer ($r = -.424$) groups. They, therefore, concluded that unemployment is a particularly important predictor of attrition of military personnel. Thus, they postulated that in times of high unemployment rates, attrition rates will be low, and, conversely, when unemployment rates are low, attrition rates will increase. Responses to the loyalty scale showed that 82.9% of stayers and 73.4% of leavers reported a high level of loyalty to the CF. Therefore, they reported that it does not appear as though loyalty is a factor which is related to either a leave or a potential leave decision. In addition, occupation and skills recognition was viewed as an important issue for leavers, especially for those individuals in operational occupations/classifications. According to the authors, a lack of skill transferability to the civilian sector increased the likelihood of members to consider leaving the military prior to CRA.

Mendes and Lyon (1984) concluded that their results were consistent with previous research and that a leave or potential leave decision is associated with individual, organizational, and extraorganizational factors. Several factors emerged

that showed concerns toward such issues as: (1) pay; (2) benefits; (3) promotion opportunities; (4) nature of work; (5) postings; (6) CF lifestyle; and, (7) occupation recognition. The authors subsequently stated that attrition, and the attitudes of military personnel toward the CF that build up to a leave decision, is strongly related to “dynamic” economic conditions. Thus, they recommended that an ongoing attrition monitoring system be developed and implemented to achieve a continuous perspective on attrition issues in the CF.

Mendes and Lyons’ (1984) research led to the further refinement of the CFARQ and its eventual implementation as an exit questionnaire. The CFARQ was eventually renamed the CFAIQ and was composed of the following five sections: (1) reasons for leaving; (2) comparison of the CF with civilian life; (3) attitudes toward the CF experience; (4) preparation for civilian life; and, (5) biographic data. Section 1 of the CFAIQ - Reasons for Leaving - was presented in two parts: the most frequently responded to items (a total of 46 items); and, the three most important items. The most frequently reported items are deemed to be those to which 50% or more of the respondents reported as being an important reason for leaving. The second part of Section 1 required respondents to indicate their three most important reasons for leaving the CF. An extra question was included in Section 1 that solicited additional reasons for leaving not listed but that might be considered to be related and important to the leave decision. Biographic information, collected in Section 5, included rank, official language, gender, element, command, military occupation, type of unit, age at release, length of service at release, marital status, release item, and education (Parker, 1992).

Phase 3: Distribution of CFAIQ and implementation of CFAMS

The CFAIQ was evaluated prior to its distribution throughout the CF, to:

- a. examine the content, comprehensiveness and clarity of the CFAIQ;

- b. evaluate the procedures required for efficient questionnaire administration, data collection, and analysis; and,
- c. determine the potential of the CFAIQ to answer specific attrition-related questions (Parker & Lyon, 1988).

Base Personnel Selection Officers at 13 CF locations administered the CFAIQ evaluation surveys. This ensured the standardization of administration and the confidentiality of responses. Five hundred and five out of 1000 CF members who had requested voluntary release between October 1987 and March 1988 responded to the questionnaire.

Results of the CFAIQ evaluation indicated that from a practical perspective, the questionnaire content was deemed to be relevant and useful for participants to report on their personal decisions to leave the CF. Descriptive statistical analysis showed that 96% of respondents stated that they were aware of the reasons for developing the CFAIQ and 93% held a positive view towards completing the questionnaire. In addition, 98% of the respondents completed the whole questionnaire once started (Parker & Lyon, 1988).

The technical evaluation of the questionnaire content was performed to establish norms from the scaled items for respondents by rank, element, gender and official language designation. According to Parker and Lyon (1988):

“Unfortunately, even though the evaluation sample size was adequate enough to classify the data into these particular groupings, it was not sufficiently large to establish complete norms for the CFAIQ data...thus precluding the cross-tabulation of the data...though the expectation of developing detailed norms was not met, per se, the evaluation analysis revealed a potential for establishing normative and baseline information when a large data set is available” (p,7).

In addition, an examination of the item scales for the data set indicated the potential for using descriptive statistics (i.e., mean, median, mode and standard deviation) to analyze the Reasons For Leaving and CF/Civilian Comparison sections. Thus, Parker

and Lyon (1988) recommended the use of descriptive statistics to report on CF attrition patterns.

The comprehensiveness of the CFAIQ was examined by asking respondents if there were any other reasons they would consider in their decision to leave the military. Several new items were suggested and later included into the Reasons for Leaving section of the questionnaire. An exploratory factor analysis was conducted on this section to assess its construct validity and eliminate those items which did not add to the CFAIQ's effectiveness. However, Parker and Lyon (1988) felt that the results from the factor analysis did not seem to be particularly meaningful. They stated that:

“It was determined that the peculiarities of the data did not conform to the assumptions necessary to conduct factor analysis. Essentially, due to the design of the questionnaire, the opinions given by respondents on the items were polarized, leading to a restriction of response range, a skewing of the distributions and a bias in the correlation coefficients” (p.9).

Thus, the authors concluded that the results of the factor analysis were spurious and misleading.

In addition, each section of the CFAIQ was examined for clarity. Respondents were asked to comment on whether the instructions were easy to understand and if any questions or parts were poorly worded, unclear or confusing. Parker and Lyon (1988) reported that 96% of the respondents found the questionnaire easy to understand and use. The remaining 4% stated that there were problems with the wording of the instructions for Section 1B of the CFAIQ. The instructions were revised accordingly (Parker & Lyon, 1988).

A third objective of the preliminary evaluation of the CFAIQ was to find out whether the questionnaire had the potential to answer questions regarding the CF voluntary attrition process. In particular, the Reasons for Leaving section was created to determine the number of factors or issues that contribute to a respondent's decision to leave the CF and then ascertain how important each factor or issue was in their

decision (see Appendix A). Five point scales to represent the initiating attrition variables of the Mobley et al. model (1979) that affect attitudes and perceptions related to work and leave decisions were developed and are used in the questionnaire (Lissak & Mendes, 1982). The five point levels of importance scale adopted for Section 1 include: extremely important, very important, important, of some importance, not true or of no importance. Parker and Lyon (1988) identified and presented the top ten items that had been reported by voluntary leavers as having played some importance in their leave decision:

- a. I want more challenging work (69%).
- b. I do not get credit for a job well done (64%).
- c. My work performance is not evaluated fairly (63%).
- d. I want to increase my family stability by establishing roots in one community (63%).
- e. Future postings in my MOC are unattractive because of the nature of the work (63%).
- f. I am taking full advantage of my pension and potential civilian salary (52%).
- g. I am spending too much time away from home (51%).
- h. I am not being adequately compensated for overtime (50%).
- k. My supervisor lacks interest in his/her subordinates (43%).

The authors concluded that this type of data indicate that practical information can be drawn from the Section 1A data.

Parker and Lyon (1988) also analyzed the responses to Section 1A to determine each respondent's actual number of items in the Reasons for Leaving list that were deemed to be of some or greater importance. They reported that an average of fourteen items (not the same items for each person) were indicated as being important to a respondent's leave decision. The top five items that were mentioned most often by

respondents as being one of the three most important reasons for leaving the CF were as follows:

- a. I want more challenging work (28%).
- b. I want to increase my family stability by establishing roots in one community (25%).
- c. I am going back to school (18%).
- d. I am spending too much time away from home (14%).
- e. I am taking full advantage of my pension and potential civilian salary (14%).

The authors reasoned that the determination of the most important reasons for leaving the CF can provide valuable information. They deduced from their analysis that although leavers may have many general reasons for taking a voluntary release, they are able to prioritize these reasons into a few key or fundamental concerns when required. As well, the authors included an open-ended question at the end of Section 1 of the questionnaire, which asked respondents for additional release items. The authors felt that this would enable CFAMS to remain dynamic and current.

The CFAIQ was distributed to bases and stations in July 1989, thus making CFAMS operational (Parker, 1992). The CFAMS provides information on who is leaving the CF, and why. The data collected can be analyzed in aggregate or some prescribed form based on a number of biographic and demographic variables. These variables include: release date, military occupation code, element (air, sea, land), rank level, occupation qualification level, total number of years service, terms of service, release item, date of birth, marital status, dependent children, sex, first official language, highest level of education, highest level of academic accreditation, etc. More specifically, the responses to questions in Section 1 can be extracted individually or in groups and cross-referenced with the biographic data in Section 5 (Parker, 1992).

In turn, information gained from the CFAIQ is reported on a periodic basis and is used in personnel policy formulation within the CF.

Biographical data is included in the questionnaire to categorize voluntary leavers by important individual, organizational and extra-organizational variables which allow CFAIQ responses to be statistically analyzed according to a variety of groupings. The objective of the evaluation of biographical data was more to determine patterns of attrition than to identify individual leavers. Parker and Lyon (1988) reported that descriptive analysis of the evaluation data showed that the biographic categories were answered appropriately.

In conclusion, the CFAIQ has been administered for over six years and a data base of more than 12, 000 respondents has been collected during this time. As previously discussed, the CFAIQ can and has been used to provide information on who is leaving the CF, and why. The next section will review and summarize the research that has been conducted since CFAMS became operational.

Follow-up research on the CFAIQ

Parker (1992) reported that Francophones cite a diverse number of reasons for voluntarily leaving the CF, "including work and occupational (e.g., work challenge and unfair evaluations), family (e.g., family stability and time away), and extra-organizational (e.g., school, military role undervalued and civilian job offers)" (p.9). Moreover, he added that Anglophones reported fewer and less diverse reasons for leaving as being important. The reasons cited by Anglophones included: desire for more challenging work (62.6%); desire to increase family stability by establishing roots in one community (61.2%); lack of credit for a job done well (56.8%); work performance not evaluated fairly (50.7%); and, future postings in occupation are unattractive because of the nature of the work (50.2%).

An analysis of three most important reasons for leaving for Francophones showed the following breakdown: desire to go back to school (14.2%); desire to increase

family stability by establishing roots in one community (13.9%); too much time spent away from home (11.1%); desire not to be separated from family (9.9%); and, desire for more challenging work (9.1%). According to Parker (1992), Francophones consistently report family and extra-organizational issues as being the most prominent reasons for leaving. Anglophones similarly reported the following five issues as being amongst their three main reasons for leaving: desire to increase family stability by establishing roots in one community (17.0%); desire to go back to school (14.8%); desire for more challenging work (12.1%); desire to take advantage of combining military pension with a potential civilian salary (11.4%); and, desire not to be separated from family (11.1%).

With respect to the CFAIQ's analytical potential, Parker (1992) reported that the questionnaire allows statistical analysis that can provide "sound interpretative" information with respect to voluntary attrition. He noted, however, that several confounds exist within the demographic data that might obscure some of the relationships. He commented that:

"Release age, rank level, and length of service are closely correlated, as the youngest members usually are at the lowest ranks with the shortest years of service...Education and rank (i.e. officer vs. NCM) also can be synonymous, since applicants possessing advanced academic accreditation are routinely selected to become officers" (p. 5-6).

These issues indicate that multicollinearity exists within Section 5 - Demographical Data - that might confound data interpretation. In addition, several of the demographic variables (e.g., release ages, years of service, ranks and education level), due to their continuous nature, need to be collapsed into fewer groupings for simplifying analysis and interpretation (Parker, 1992).

Parker (1992) stated that, although the first part of Section 1 - Reasons for Leaving - has five levels of responding, the information can be combined into two categories: important (includes "of some importance", "important", "very important"

and extremely important”), and unimportant. Also, in the second part of Section 1, the three most important reasons can be collapsed into a single category, and compared against the unimportant category (Parker, 1992). According to Parker (1992), there are 46 reasons offered in the first part of Section 1, however, only a few reasons are chosen by the majority of respondents. As noted by Parker (1992), only eleven reasons were identified by the majority of respondents from the language and rank groupings as being important.

Farley (1994) examined differential rates of voluntary attrition and reasons for leaving for Anglophone and Francophone sailors in the Canadian Navy. Archival attrition data and completed CFAIQ's by hard-sea personnel were analyzed to identify the reasons they cited for leaving the Navy (N=94). Although the sample group size was acknowledged as being small, his results were reported as being consistent with previous research and indicating that Francophones continue to leave the Navy at twice the rate of Anglophones.

Furthermore, Francophones reported family issues as their most prominent reason for leaving as opposed to job related issues for Anglophones. According to Pinch (1987), Francophones cite family issues as being the most important reason because of the linguistic and environmental discontinuity that they experience when posted to a hard sea posting. More specifically, Francophones arrive at their environmental destination unprepared to be completely immersed in an Anglophone work environment and culture (cited in Farley, 1994). In addition, several researchers have reported that there are known value differences between Anglophones and Francophones with respect to job related perceptions. Research indicates that Francophones have stronger esteem and social needs than do Anglophones, and that they place greater emphasis on their cultural group (Farley, 1994). These factors are believed to account for Francophones citing family issues as being the most important reason in their leave decision.

Psychometric concerns were voiced to this researcher about Section 1 of the CFAIQ by fellow research officers at CFPARU in June, 1995. A memorandum (dated 5 June 1995) and subsequent phone conversations specifically requested that the psychometric properties of the Reasons for Leaving section be examined and refined accordingly. In addition, CFPARU requested that the psychometric properties of the scale be evaluated with respect to both Anglophone and Francophone respondents.

Psychometric issues

It is common knowledge in the industrial/organizational literature that a good summated scale is both highly reliable and valid. Reliability of measurement refers to the accuracy of how any measure produces the same results on different occasions. A reliable measuring instrument is, therefore, one which accomplishes this aim (Spector, 1992; Carmines & Zeller, 1979). Validity is essentially defined as the property of being true, correct, and in conformity with reality (Spector, 1992; Maxwell & Delaney, 1990; Coolican, 1990; Anastasi, 1982; Carmines & Zeller, 1979).

Although reliability and validity issues will be addressed in greater detail later on in this section, there are several specific considerations that enable researchers to develop good scales. First, it is extremely important that items should be clear, concise, and contain a single idea. Second, items should be appropriate to the target population (e.g., items should be worded in a straight-forward and simple language and not too advanced for the age and education of the respondents). Third, a good scale should be developed devoid of possible biasing factors. According to Spector (1992), one of the most problematic sources of biases is social desirability:

“Social desirability (or SD) is the tendency for some subjects to respond to items in a socially desirable or acceptable direction rather than giving their true feelings or responses to an item” (p. 11).

Similarly, Coolican (1990) stated that the following points are of extreme importance when scales and questionnaires which attempt to measure psychological constructs or characteristics are developed:

1. They should discriminate as widely as possible across the variety of responses - referred to as discriminatory power;
2. They should be highly reliable;
3. They should be supported by tests of validity; and,
4. They should be standardized if they are to be used as general, practical measures of human characteristics.

Also, it is important that psychometric scales be formally evaluated on an ongoing basis to ensure that they remain reliable and valid (Cortina, 1993; Spector, 1992; Leavitt, 1991; Coolican, 1990; Binning & Barrett, 1989; Landy, 1986; Guion, 1983; Anastasi, 1982; Carmines & Zeller, 1979). Psychological questionnaires and tests are usually queried as to their internal reliability, meaning the degree to which various items measure the same variable(s) and/or factor(s). It is, therefore, the level to which an instrument can be said to be internally consistent. Coolican (1990) states that internal consistency is normally measured by examining whether individuals answer each item in a similar manner to all the other items. Also, questionnaires and tests can be examined for their consistency in producing similar results on different occasions. Cronbach (1960) termed these two different approaches to determining the reliability of a psychological measure as internal consistency and stability (external reliability), respectively (cited in Coolican, 1990).

Although there are several methods available for checking internal reliability, item analysis and coefficient alpha are perhaps the most appropriate methods for examining archival data. The aim of item analysis is to determine those items that form an internally consistent scale and to remove those items that do not (Spector, 1992). When choosing items for a scale, it is recommended that both item-remainder

coefficients and coefficient alpha be used. Spector (1992) argued that a criterion for the coefficient (e.g., .30) may be set, and all items with coefficients lower than the criteria would after further inspection be dropped from the scale. Furthermore, he stated that a widely accepted rule of thumb is that coefficient alpha should be at least .70 for a scale to demonstrate internal consistency.

Questionnaire items are also said to be good if they can discriminate well between people. According to Coolican (1990), there are two main methods for examining the discriminatory power of items:

1. For each item in the test or questionnaire, the correlation is computed between each person's score on the item and their score as a whole. This only works when individuals can answer each item along a scale, like a Likert scale; and,
2. Looking at individuals' overall frequency scores for each item on the test, and comparing the totaled scores of two groups of people. An item is highly discriminative if the scores of the two groups are very different. If these scores are not very different, the item is low in discriminatory power and it may be removed.

According to Spector (1992) and Anastasi (1982), coefficient alpha can be used to determine the interitem consistency of responses to all items in a questionnaire when utilizing a single administration of a single form. Interitem consistency is associated with two forms of error variance: (1) content sampling; and, (2) heterogeneity of the behavior domain sampled (the more homogeneous the domain, the greater the interitem consistency).

Although a questionnaire or test might be deemed to be highly reliable, it may not be measuring what it was originally designed to measure. As well as being reliable it is extremely important that a questionnaire or test be valid. Although researchers tend to differ in their opinions with respect to the notion of validity and how it should be established, it is generally accepted that validity can be classified under the three

following principled categories: (1) content validity, (2) construct validity and (3) predictive validity (Coolican, 1990; Anastasi, 1982; Carmines & Zeller, 1979).

Of particular importance to this research project are the issues of content and construct validity. Content validation consists of systematically examining the questionnaire or test items for the purpose of determining whether it adequately contains a representative sample of the behavior domain to be measured and are any of these items irrelevant or inappropriate (Anastasi, 1982; Carmines & Zeller, 1979). Although it is important that content validity be built into the questionnaire or test during the initial design phase of the process by selecting appropriate items, content validation can and should be conducted on an ongoing basis. One method of assessing content validity is to have either “experts” evaluate and/or “users” provide feedback on the content of the questionnaire, to ensure that it satisfactorily represents the concept that it is supposed to describe. Another method of assessing content validity is to conduct item analysis (Spector, 1992; Coolican, 1990; Carmines & Zeller, 1979).

Construct validation is the process of evaluating a questionnaire based on whether the questionnaire items accurately capture the hypothetical construct(s) they were designed to measure (Maxwell & Delaney, 1990; Coolican, 1990; Anastasi, 1982; Carmines & Zeller, 1979). For example, if a questionnaire is supposed to measure the reasons for leaving an organization, it is important to determine: (1) Which reasons for leaving actually characterize the leave decision? and (2) if the questionnaire items actually measure this construct? Although there is no mathematical bases for determining content and construct validity, it can be estimated by using factor and item analyses (Spector, 1992; Maxwell & Delaney, 1990; Coolican, 1990; Anastasi, 1982; Carmines & Zeller, 1979).

Objective of the present study

The problematic factors outlined earlier by Parker (1992) and CFPARU (1995) indicate that the psychometric properties of the CFAIQ need to be examined from a

practical perspective with respect to the issues of reliability and content/construct validity. The objective of this thesis research project, therefore, is twofold. First, a systematic research strategy will be developed to conduct validation testing on Section 1 - Reasons for Leaving - of the CFAIQ. The CFAIQ data base will be used to examine the psychometric properties of Section 1 with respect to content and construct validity, and the reliability of its 46 items. More specifically, item analysis, focus groups, exploratory factor analysis and higher order factor analysis will be used to analyze the CFAIQ data set. Follow-up research will consist of conducting item analysis on a random sample of already completed questionnaires to determine whether additional items need to be incorporated into the CFAIQ. Results will be used to re-work the CFAIQ and ultimately make it a more reliable and valid document.

Second, this thesis research project will replicate and extend upon the research previously conducted by Mendes and Lyon (1984), Parker (1992), and Farley (1994) on the reasons for leaving the CF for both Anglophones and Francophones. This examination will specifically test the hypothesis that Anglophone leavers cite job related issues as being the most important reason for their leaving the CF, whereas Francophone leavers cite family issues. Also, it is also hypothesized that Francophones will cite a larger number of and more diverse reasons for leaving than will Anglophones. The results from this examination will be used to generate additional hypotheses which can be tested in the future.

Method

Participants

Twelve thousand and sixty-eight departed military members have completed the CFAIQ since 1987 and are now included in data base. The existing CFAIQ data set was, however, with the exception of the first item analysis conducted, filtered to exclude those personnel who were released from the CF as a result of FRP or for

compulsory reasons. It was evident that these personnel did not meet Lissak and Mendes' (1982) theoretical definition of being "voluntary leavers". This resulted in 4,284 respondents being excluded from further analysis. Therefore, a total of 7,784 completed questionnaires from departed personnel were included in this study. Included in this sample were 6,183 Anglophones and 1,601 Francophones. The data set was then partitioned into three randomly selected groups of approximately equal sizes (group 1 $N=2634$; group 2 $N=2575$; and, group 3 $N=2575$. These figures do not, however, take into account cases with missing values).

In addition, two focus groups were conducted at CFB Esquimalt with a total of nine participants (all males). Each of the participants had requested a voluntary release from the CF and were engaged in the release process. The rank of the participants ranged from Leading Seaman to Acting/Sub-Lieutenant (3 Leading Seaman, 2 Master Corporal, 2 Warrant Officers, 1 Master Warrant Officer, and 1 Acting/Sub-Lieutenant) and their years of military service was a mean of 17.2 years. The military occupational classification of the participants included: Traffic Technician, Naval Electronic Sensory Operator, Military Policeman, Artilleryman, Marine Engineer Mechanic, MARS, Naval Weapons Technician, and Photograph Technician. Participants represented the three elements of the CF: Sea, Land, and Air.

Furthermore, 300 (93 Francophone and 207 Anglophone leavers) randomly selected and previously completed questionnaires were visually examined for additional reasons for leaving not currently listed in Section 1 of the CFAIQ.

Procedure

The CFAIQ is routinely administered and processed as part of the release process. The CFAIQ is presently administered to all personnel who are leaving the CF voluntarily or compulsory, either under the Force Reduction Program (FRP) or as a result of completing terms of service, prior to Compulsory Retirement Age (CRA). This is a standard part of their base, station, or unit out-clearance routine. The CFAIQ

is, however, completed by service members on a voluntary basis. Completed questionnaires are collected and secured by local Base Personnel Selection Officers or Designated Administrators and are directly mailed to CFPARU each month. At CFPARU, the CFAIQ data is encoded and stored to compile a data base for research purposes.

Approval to conduct focus groups at CFB Esquimalt was attained from the Base Commander (via the Base Administration Officer). Participants were requested to attend the focus group wearing civilian attire. It was felt that this would allow each of the participants to remain anonymous and thus allow free speech. Each participant was initially asked to complete Section 1 of the CFAIQ (Appendix A) and complete the Attrition Information Questionnaire Comment Sheet (Appendix B. Lyon, 1987). This questionnaire asked each participant to comment on the following: After answering this section, was it clear to you why this survey was developed?; Were there any parts of the reasons for leaving section that were poorly worded, unclear or confusing? Are there any other factors you consider would be reasons for leaving the CF?.

Upon completing the comment sheets, the participants' comments were summarized in point form for further group discussion. In addition, each of the items in Section 1 were discussed individually and the two groups were then asked to come to a consensus as to whether or not they felt these items were valid. Prior to this, the participants were asked to respect the opinions and comments expressed by other members of the group. Each focus group lasted for approximately four hours.

Data analysis

All statistical analyses for this research project were conducted using SPSS for Windows (Version 6). A five-step analytical strategy was used to achieve the research goals of this thesis project. First, two focus groups were conducted at CFB Esquimalt to determine whether the existing items in Section 1 of the CFAIQ possessed content

validity. In addition, the focus groups were requested to generate additional reasons for leaving that might be important with respect to their leave decision but were not presently included in Section 1 of the questionnaire. Additional reasons were listed and tabulated by hand. General themes were identified and additional questions generated that might be incorporated in a refined and modified version of the CFAIQ.

Item analysis was also conducted on the existing 46 items in Section 1 of the CFAIQ. Frequencies and summary statistics were also tabulated for each item for each of the following data sets: (1) the whole data set ($N=12,681$); (2) the filtered data set ($N=7,784$); (3) the Anglophone data set ($N=6,183$); and, the Francophone data set ($N=1,601$). In particular, frequencies, percentage of responses accounted for, mean, mode, variance, and skewness for each of the 5-anchored scaled items were examined. The criteria used for determining poor/low discriminatory power were decided on a priori and based on the following factors: the not true or of no importance anchor of the scale accounting for a large proportion of all the responses (over 75%); variance being equal to or less than 1; and, a high negative skewness score. Reliability analyses were also conducted on Section 1 items using the filtered data set ($N=5,536$. The original filtered data set taking into account missing cases). As a result, items 1, 21, 23, 32, 34, 39, 40, and 42 were removed from any further analyses. Furthermore, reasons for leaving for both Anglophones ($N=5,976$) and Francophones ($N=1,544$) were examined and those items with frequencies indicating importance to the leave decision of 50% or over were tabulated.

After the initial analyses had been conducted, the data set was divided into three relatively even and randomly selected groups. Thus, exploratory PCA was conducted on group 1, group 2, and a third exploratory PCA and hypothesis testing between and Anglophones and Francophones was conducted on group 3. This ensured that each level of analysis was conducted in a highly systematic manner.

Second, exploratory principal components factor analyses (PCA) were conducted on the first sample group to determine the factor loadings for the remaining 38 items. PCA is a method of data analysis that is used to reduce a large number of individual variables/items into a smaller number of grouped variables based on their interrelationships. The number of factors to be retained can be determined by examining the residual correlations (variance accounted for), eigenvalues (greater than 1), and/or scree plots (retain factors up to where the 'scree' slope begins). Factor analysis extracts factors based on successive maximization. Generally, the number of factors retained should account for between 50 and 75 per cent of the variance with approximately 1/4 to 1/3 as many factors as there are variables (Kim & Mueller, 1978).

A listwise PCA was first utilized to reduce the 38 items retained from Section 1 - Reasons for Leaving - of the CFAIQ into a smaller number of grouped items and subsequently obtain a general picture of the factor structure for the first CFAIQ sample group ($N=1954$). The factor structure obtained was, however, unclear and poorly-defined. It was decided, therefore, that two separate PCA's would be conducted in which six and seven factor solutions were specified to clarify the factor structure for the first sample group. Consistent with existing literature, technical issues such as factor extraction criteria (principal components), method of factor rotation (varimax - orthogonal rotation), eigenvalues (equal to or greater than 1.0) and factor loading cutoffs (loadings equal to or greater than .3) were decided a priori.

Reliability analysis was then conducted on the 38 item scale and the seven-factor solution to assess the internal consistency of the overall scale and items identified under each factor. Reliability analysis can, therefore, be used to look at the characteristics of the individual scale items, the characteristics of the overall scale, and the relationship between the individual items and the entire scale. The reliability of the identified factors can be assessed by computing an estimate of reliability based on

the observed correlations for each of the items identified under each factor. One of the most widely used reliability coefficients is Cronbach's alpha, that tests the internal reliability of a set of items and the extent to which all items reflect the same underlying construct (internal consistency). Cronbach's alpha depends on both the length of the scale and the correlation of the items on the test. In this case, it depends on the number of items identified under each factor and the correlation of these items.

Furthermore, a higher order factor analysis was conducted on the factor scores calculated for the seven factor solution identified in the exploratory PCA (obtained using varimax rotation). The purpose of this analysis was to determine whether these factors could be reduced further to fit Mobley et al's. (1979), Lissak and Mendes' (1982), and Lyon's (1987) conceptualization of the reasons for leaving the CF: labeled as individual, organizational and extra-organizational factors.

Third, exploratory PCA was performed on the second sample group to determine whether the factor structures for the first and second sample groups were consistent and well-defined. Again, a listwise PCA was first utilized to reduce the 38 items retained from Section 1 - Reasons for Leaving - of the CFAIQ into a smaller number of grouped items and subsequently obtain a general picture of the factor structure for the second CFAIQ sample group.

Separate PCA's were then conducted in which six and seven factor solutions were specified to clarify the factor structure for the second sample group. Reliability analysis was then conducted on the 38 item scale and the seven-factor solution to assess the internal consistency of the overall scale and items identified under each factor. A higher order factor analysis was also conducted on the factor scores that had been calculated for the seven factor solution in order to determine whether these factors could be further reduced.

Fourth, exploratory PCA was performed on the third sample group to determine whether the factor structures for the first, second, and third sample groups

(Anglophones and Francophones) were consistent, well-defined, and strong. PCA's were conducted on the combined group (N=1847), and Anglophone (N=1,478) and Francophone (N=369) respondents for which seven factor solutions were specified. The factor structures for these groups were then compared both quantitatively (through the calculation of factor scores and conducting of independent t-tests) and qualitatively (through visual inspection and subjective grouping and factor labeling).

Reliability analysis was then conducted on the 38 item scale and the seven-factor solutions to assess the internal consistency of the overall scale and items identified under each factor. In addition, the frequencies of responses on the 38 items were tabulated for both Anglophones and Francophones and the percent of the variance accounted for was analyzed. The most important reasons for leaving the CF were subsequently determined and reported for the Anglophone and Francophone participants in group 3. Finally, higher order factor analyses were conducted on the factor scores that had been calculated for each of the seven factor solutions (Anglophone and Francophone) in order to determine whether these factors could be further reduced.

Fifth, item analysis, in the form of a visual examination, was performed on 300 randomly selected and previously completed questionnaires. The "other reasons" for leaving portion of Section 1 of the CFAIQ were analyzed and additional reasons for leaving were listed and tabulated by hand. General themes were identified and additional questions generated that might be incorporated in a refined and modified version of the CFAIQ. There was no experimental treatment or manipulation used in this research project.

Results

Step 1: Focus groups and item analyses

Results from the two focus groups conducted at CFB Esquimalt showed that all the participants agreed that a number of items might be added to and deleted from Section 1 of the CFAIQ. Both groups felt that several of the items that addressed leadership, morale, career management and promotions, family, finances/benefits, and posting issues were “not relevant...too broad, non specific, and vague”. In addition, group members agreed that there were no items on the questionnaire that specifically addressed the specific turnover issues associated with the FRP (e.g., lucrative monetary incentives being offered to those who voluntarily leave the organization).

Moreover, when asked which items might be dropped from Section 1, participants reported that several items did not seem to be important reasons for leaving the CF and, therefore, should be either dropped or reworded. Focus group participants felt that item 1 (I have had too many postings) was typically not an important reason with respect to leaving the CF. Participants felt that most people join the CF to travel and that they are informed, prior to enrollment at the recruiting centre, that they will be posted on an the average of every three to five years. Thus, they believed that most personnel are consciously aware that they will be posted many times throughout their careers and, conversely, this is a feature that actually attracts the individual to the organization.

Items 23, 34, and 42 (I don't expect to get an offer of re-engagement, I want to avoid compulsory release, My career is limited because of my medical category, respectively) were also deemed to be unimportant because they appeared to be more related to the notion of compulsory as opposed to voluntary release. Participants felt that these items pertained mainly to those individuals who were either leaving the CF involuntarily as a result of medical problems/restrictions or for retirement reasons. As a result, they felt that these items would not be viewed as being important by the

majority of personnel who would be leaving the organization on a voluntary basis and thus should be removed from Section 1.

With respect to items that might be included, the participants felt that additional items should be included which specifically address the lack of or poor leadership at both the junior and senior levels (e.g., I am dissatisfied with the leadership and decisions that are being made by senior officers at NDHQ). Participants also voiced concerns about there being no items which specifically address the lack of advancement opportunities within the organization (e.g., most officer development programs and occupational training programs have been either cut completely or restricted as a result of organizational downsizing over the past several years). Related to this concern, both groups were unanimous in their dissatisfaction with the present performance evaluation system being used for NCMs and the career management system (e.g., Career Managers) in general. Participants felt that specific items might be developed and incorporated which address these issues (e.g., I feel that I have been unfairly discriminated against by either my career manager or the current performance appraisal records).

With respect to pay/benefits and postings, participants stated that an item should be included that reflects the fact that the high standard of living in specific geographical regions (e.g., Victoria, Vancouver) and low wages (e.g., as a result of extended pay and incentive freezes) might contribute to a member's leave decision. Related to this was the notion that spouses of military members can not always find employment after being posted and this may in turn cause the family unit to experience increased financial stress. This in turn might be an important reason for leaving the CF (e.g., My spouse was unable to secure employment after being posted, The combined wages of my spouse and myself are insufficient to sustain our family). In addition, participants mentioned that an item might be included which relates to the organization's inflexibility and lack of response to its members' needs (e.g., My

personnel needs were not adequately met by the CF). Furthermore, the participants stated that there were no items in Section 1 which specifically address CF morale/esprit de corps issues and dangerous working conditions (e.g. 's, Team spirit is not encouraged at my present unit and My present job requires that I work under dangerous conditions).

With respect to the reliability analyses that were performed during the first step of this study, Table 4 below illustrates the item-remainder coefficient scores for each of the items (1, 21, 23, 32, 34, 39, 40, and 42) that were dropped from Section 1 as a result of not meeting the .30 criteria. A Coefficient Alpha score of .87 was subsequently attained for the remaining 38 items. Although the initial reliability analysis conducted on all 46 items attained a Coefficient Alpha score of .88, the removal of the aforementioned items did not appreciably lower the internal consistency of the scale.

Table 4
Step 1: Reliability analysis on original 46 items

Item	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
1	.27	.20	.88
21	.19	.14	.88
23	.19	.15	.88
32	.30	.16	.88
34	.24	.16	.88
39	.20	.08	.88
40	.27	.13	.88
42	.10	.06	.88

Note. Coefficient Alpha was .88 for the 46 items ($N=5,536$). Coefficient Alpha was .87 for the 38 remaining items after items 1, 21, 23, 32, 34, 39, 40, and 42 were removed ($N=5,628$).

Providing additional support, Tables 5-8 (p.47-50) also show the results of the item analyses conducted during the first step of research for the following data sets:

(1) the whole data set ($N=12,681$); (2) the filtered data set ($N=7,784$); (3) the Anglophone data set ($N=6,183$); and, the Francophone data set ($N=1,601$).

Specifically, the proportion of all the responses being rated as not true or of no importance, variance, and skewness scores are reported. Results from the analyses of the four data sets clearly showed that items 1, 21, 23, 32, 34, 39, 40, and 42 had been rated as untrue or being of no importance by well over 75% of the respondents from all four data sets.

In addition, these items had variances of 1 or less and the frequency distributions for responses were not normally distributed but heavily skewed in a negative direction (toward the fifth anchor on the scale - not true or of no importance). These findings clearly and consistently showed that these items possessed poor discriminatory power. Each of the eight items were then subsequently dropped from Section 1 of the CFAIQ for the remainder of the analyses (see Table 9 on p.51).

The most important and commonly cited reasons (as determined by 50% or more of the respondents) for leaving for both Anglophones and Francophones are shown in Tables 10 and 11, respectively (see p.52 and p.53-54). For Anglophones, the five most important and commonly cited reasons for leaving the CF were: I want more challenging work (65.1%); I want to increase family stability by establishing roots in

some community (64.6%); My work performance is not evaluated fairly (58.5%); I do not want to be separated from my family (53.6%); and, I do not get credit for a job well done (53.5%).

Table 5
Step 1: Item analysis for complete data set (N=12,681)

Item #	% of Responses*	Variance	Skewness
1	75.2	.755	-2.353
21	91.2	.305	-4.450
23	85.3	1.049	-2.730
32	89.5	.397	-4.006
34	85.2	.965	-2.749
39	91.7	.504	-4.165
40	85.9	.727	-3.112
42	89.0	.815	-3.293

***Note.** Each item has five levels of responding, which are as follows: “not true or of no importance”, “of some importance”, “important”, “very important” and “extremely important”. % of Responses is reported only for the “not true or of no importance” anchor.

Table 6
Step 1: Item analysis for the filtered data set (N=7,784)

Item #	% of Responses*	Variance	Skewness
1	75.2	.755	-2.353
21	91.4	.312	-4.526
23	89.6	.652	-3.600
32	88.7	.422	-3.806
34	87.5	.813	-3.102
39	91.3	.536	-4.017
40	86.4	.697	-3.181
42	90.3	.728	-3.562

***Note.** Each item has five levels of responding, which are as follows: “not true or of no importance”, “of some importance”, “important”, “very important” and “extremely important”. % of Responses is reported only for the “not true or of no importance” anchor.

Table 7
Step 1: Item analysis for the Anglophone data set (N=6,183)

Item #	% of Responses*	Variance	Skewness
1	78.3	.646	-2.612
21	92.3	.297	-4.718
23	90.9	.617	-3.817
32	89.7	.372	-4.042
34	88.9	.711	-3.387
39	90.8	.561	-3.886
40	88.6	.562	-3.589
42	90.6	.711	-3.628

***Note.** Each item has five levels of responding, which are as follows: “not true or of no importance”, “of some importance”, “important”, “very important” and “extremely important”. % of Responses is reported only for the “not true or of no importance” anchor.

Table 8
Step 1: Item analysis for the Francophone data set (N=1,601)

Item #	% of Responses *	Variance	Skewness
1	63.4	1.104	-1.664
21	88.1	.367	-3.938
23	84.4	.782	-2.961
32	84.7	.609	-3.123
34	82.1	1.178	-2.347
39	93.0	.435	-4.644
40	77.7	1.164	-2.215
42	89.1	.790	-3.334

***Note.** Each item has five levels of responding, which are as follows: “not true or of no importance”, “of some importance”, “important”, “very important” and “extremely important”. % of Responses is reported only for the “not true or of no importance” anchor.

Table 9
Step 1: Deleted items from Section 1 of CFAIQ

Item #	Reasons for Leaving the CF
1	I have had too many postings
21	I have been offered a civilian job with less responsibility
23	I don't expect to get an offer of re-engagement
32	I do not get along with my co-workers
34	I want to avoid compulsory release
39	I do not want to work in a mixed gender unit
40	I do not want to work in an operational role
42	My career is limited because of my medical category

Table 10
Step 1: Most important reasons for leaving cited by Anglophones (N=5,976)

Item Number	Descriptor	Cumulative % of Responses
3	I want more challenging work	65.1
30	Want to increase family stability by establishing roots in community	64.6
15	My work performance is not evaluated fairly	58.5
44	I do not want to be separated from my family	53.6
20	I do not get credit for a job well done	52.3
10	Future postings unattractive because of nature of work	51.7
30	I am spending too much time away from home	50.3
6	I am not being adequately compensated for overtime	

Table 11**Step 1: Most important reasons for leaving cited by Francophones (N=1,544)**

Item Number	Descriptor	Cumulative % of Responses
10	I do not get credit for a job well done	72.3
3	I want more challenging work	70.1
4	I am not being adequately compensated for overtime	70.1
30	Want to increase family stability by establishing roots in community	68.8
15	My work performance is not evaluated fairly	67.3
20	I am spending too much time away from home	64.7
44	I do not want to be separated from my family	63.0
41	I am leaving because of compassionate reasons	61.1
36	I am going back to school	56.8
8	I was offered a job with more responsibilities	56.1
46	My role in CF undervalued in Canadian society	55.3
5	Posting does not make good use of knowledge/training	54.4
6	Future postings unattractive due to nature of work	53.1
7	I have difficulty living on what I earn in CF	51.9

Table 11 Continued...

45	I am not getting equal pay for equal work	50.7
25	I don't like my physical work conditions	51.5
28	My supervisor lacks interest in his/her subordinates	50.0

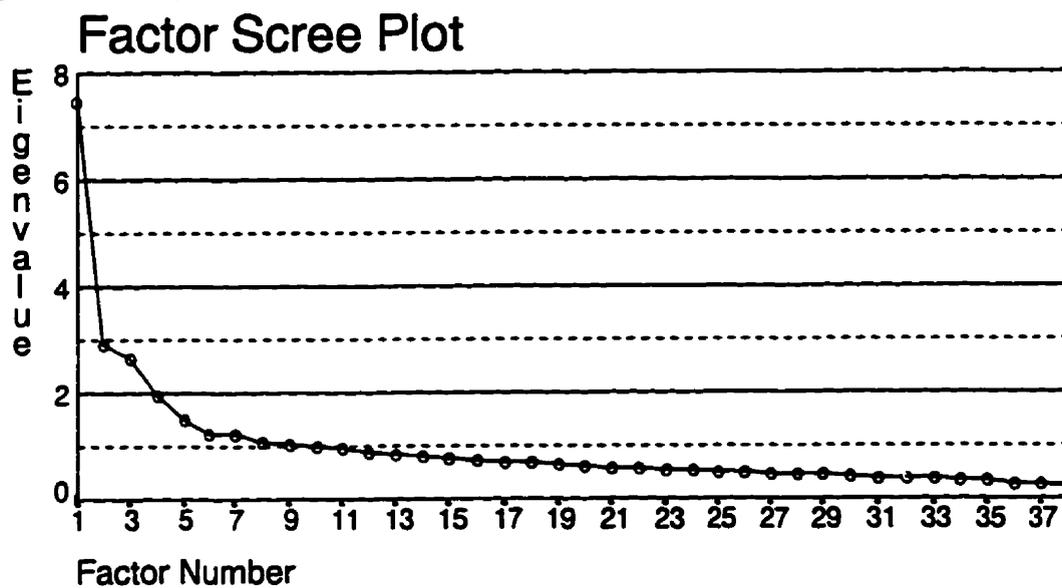
For Francophones, the five most important and commonly cited reasons for leaving were: I do not get credit for a job well done (72.7%); I want more challenging work (70.1%); I am not being adequately compensated for overtime (70.1%); I want to increase family stability by establishing roots in some community (68.8%); and, My work performance is not evaluated fairly (67.3%). Francophones, however, cited 17 reasons for leaving as being important (50% or over) whereas Anglophones only cited 8 reasons.

Step 2: Reasons for leaving for sample one (N=1954)

Using listwise PCA to examine the data, ten factors were extracted for the first sample (N=1954). Percentage of variance refers to the proportion of voluntary leaving behavior that can be accounted for by the factors identified by PCA. Ten factors were identified by the PCA as having eigenvalues greater than 1. The ten-factor solution accounted for 58.5% of the total variance as shown in Table 12 on page 55. However, a visual examination of the rotated factor matrix showed a large number of items loading on several different factors and the elbow in the Scree Plot (i.e. where the 'scree' slope begins) indicated that there were either six or seven stable factors (see Figure 3 on p.55).

Table 12**Step 2: Listwise PCA ten-factor solution - reasons for leaving (N=1954)**

Factor	Eigenvalue	% of Variance	Cumulative %
1	7.49691	19.7	19.7
2	2.95989	7.8	27.5
3	2.65566	7.0	34.5
4	1.96639	5.2	39.7
5	1.51132	4.0	43.7
6	1.25741	3.3	47.0
7	1.23152	3.2	50.2
8	1.08883	2.9	53.1
9	1.05629	2.8	55.9
10	1.01006	2.7	58.5

Figure 3: Scree plot step 2 PCA's

Two additional PCA's were conducted in which six and seven factor solutions were specified to clarify the factor structure for the first sample group. In accordance with past research by Mobley et al. (1979), Lissak and Mendes (1982), Mendes and Lyon (1984), and Lyon (1987), descriptive labels were assigned to factors in a rational manner based on the underlying theme of the observed relationships among the various items. As seen in Tables 13 and 14 (see p.57-58 and p.59-60), the six-factor and seven-factor solutions accounted for 47% and 50.2% of the variance, respectively.

For the six-factor solution, the first factor accounted for 19.7% of the variance and appeared to be related to respondents' work environment and performance related perceptions. The items that make up this factor were heavily loaded with several fairness items (e.g., work performance not evaluated fairly, no credit for a job well done, and younger servicemembers getting promoted faster). The second factor accounted for 7.8% of the variance and included items that reflect respondents' perceptions about pay and benefits (e.g., offered a new job that pays more, offered a job with more responsibilities, and attracted to a civilian job with more fringe benefits). The third factor explained 7.0% of the variance and represented respondents' individual values with respect to family issues (e.g., do not want to be separated from family, want to increase family stability by establishing roots in one community, and want to stay at home and raise family). The fourth factor accounted for 5.2% of the variance and reflected individuals' dissatisfaction with their present occupation, education or job (e.g., MOC not useful for future civilian employment, cannot get the MOC that I want, going back to school, and hours of work are too long). The fifth factor explained 4.0% of the variance and represented respondents' dissatisfaction with their present job (e.g., want more challenging work, recent posting does not make use of knowledge/skills, and immediate supervisor is incompetent). The sixth factor accounted for 3.3% of the variance reflecting individuals' posting attitudes

Table 13
Step 2: PCA six-factor solution - reasons for leaving (N=1954)

Item	Variance	Load
<u>Factor 1 - Work Environment/Performance</u>	19.7%	
Work performance not evaluated fairly		.72
No credit for job well done		.68
Younger members promoted faster		.63
Unlikely to get promoted		.62
Been discriminated against		.60
Supervisor disinterested in subordinates		.57
Under too much stress		.49
Role in military undervalued/unappreciated in society		.38
Insufficient tools or equipment to do job properly		.34
<u>Factor 2 - Pay and Benefits</u>	7.8%	
Offered a job that pays more		.83
Offered a job with more responsibilities		.81
Attracted to civilian job with more benefits		.76
Offered job with better job security		.76
Difficulty living on what I earn		.46
Not getting equal pay for equal work		.40
Taking advantage of pension and potential civilian wage		.32
<u>Factor 3 - Family Issues</u>	7.0%	
Do not want to be separated from family		.81
Increase family stability by establishing roots in community		.66
Stay at home and raise family		.63
CF career conflicts with spouse's career		.63
Spending too much time away from home		.61
Spouse unwilling to move		.56
Postings disruptive to children's education		.46
Leaving because of compassionate circumstances		.34
<u>Factor 4 - Dissatisfied With Present MOC/Career/Job</u>	5.2%	
MOC not useful for future civilian employment		.65
Cannot get the MOC I want		.63
Going back to school		.51
Hours of work too long		.51
Dislike physical work conditions		.46
MOC becoming or is obsolete		.44

		58
Table 13 continued...		
Not compensated adequately for overtime		.43
<u>Factor 5 - Dissatisfied With Present Job</u>	4.0%	
Want more challenging work		.64
Most recent posting does not make use of knowledge/training		.58
Immediate supervisor is not competent		.53
<u>Factor 6 - Postings</u>	3.3%	
Future postings unattractive because of location		.70
Future postings unattractive due to nature of work		.56
Cannot get the postings requested		.46

Note. Total variance accounted for = 47%.

(e.g., future postings are unattractive because of location/nature of work, and cannot get the postings I asked for).

For the seven-factor solution, the first factor accounted for 19.7% of the variance and clearly reflected respondents' perceptions about pay and benefits (e.g., offered a new job that pays more, offered a job with more responsibilities, and attracted to a civilian job with more fringe benefits/job security). The second factor accounted for 7.8% of the variance and represented respondents' individual values with respect to family issues as they relate to the CF lifestyle (e.g., do not want to be separated from family, CF career conflicts with spouses career, and want to increase family stability by establishing roots in one community). The third factor explained 7.0% of the variance and reflected individuals' personal dissatisfaction with the nature of their present work (e.g., hours of work are too long, not being adequately compensated for overtime, and spending too much time away from home). The fourth factor accounted

Table 14
Step 2: PCA seven-factor solution - reasons for leaving (N=1954)

Item	Variance	Load
<u>Factor 1 - Pay/Benefits</u>	19.7%	
Offered a job that pays more		.83
Offered a job with more responsibilities		.82
Offered job with better job security		.76
Attracted to civilian job with more		.76
Difficulty living on what I earn		.44
Taking advantage of pension and potential civilian wage		.32
<u>Factor 2 - Family Issues</u>	7.8%	
Do not want to be separated from		.80
CF career conflicts with spouse's career		.66
Increase family stability by establishing roots in community		.63
Spouse unwilling to move		.61
Stay at home and raise family		.58
Leaving because of compassionate circumstances		.45
Postings disruptive to children's education		.44
<u>Factor 3 - Dissatisfaction With Present Job</u>	7.0%	
Hours of work too long		.73
Not compensated adequately for overtime		.65
Spending too much time away from home		.53
Dislike physical work conditions		.50
Not getting equal pay for equal work		.49
Insufficient tools or equipment to do job properly		.43
<u>Factor 4 - Work Performance/Promotions</u>	5.2%	
Younger members promoted		.71
Unlikely to get promoted		.70
Work performance not evaluated fairly		.60
Been discriminated against		.53
No credit for job well done		.51
Under too much stress		.42
<u>Factor 5 - Disillusionment With Supervisor/CF Role/Job</u>	4.0%	
Immediate supervisor is not competent		.68
Most recent posting does not make use of knowledge/training		.61
Want more challenging work		.59

		60
Table 14 continued...		
Role in military undervalued/unappreciated in society		.36
<u>Factor 6 - Dissatisfaction With Present Occupation/Career</u>	3.3%	
MOC not useful for future civilian employment		.70
Cannot get the MOC I want		.68
Going back to school		.58
MOC becoming or is obsolete		.47
<u>Factor 7 - Postings</u>	3.2%	
Future postings unattractive because of		.70
Future postings unattractive due to nature of work		.56
Cannot get the postings requested		.46

Note. Total variance accounted for = 50.2%.

for 5.2% of the variance was related to respondents' perceptions about advancement opportunities. The items which make up this factor were heavily loaded with several fairness items (e.g., younger servicemembers getting promoted faster, unlikely to get a promotion, and work performance not evaluated fairly). The fifth factor explained 4.0% of the variance and represented respondents' disillusionment with their present supervisor, job or the role of CF (e.g., immediate supervisor is incompetent, supervisor disinterested in subordinates, posting does not make good use of knowledge/training, role in military undervalued/ unappreciated by society). The sixth factor explained 3.3% of the variance and mirrored individuals' dissatisfaction with their present occupation (e.g., MOC is not useful for future civilian employment, cannot get MOC I want, and going back to school). The seventh factor accounted for 3.2% of the variance and reflected respondents' attitudes toward postings (e.g., future postings are unattractive because of location/nature of work, and cannot get the postings I asked for).

Based on the obtained results, it was determined that the seven-factor solution was the more well-defined and stable of the two solutions. The seven-factor solution accounted for over 50% of the variance associated with reasons for leaving with approximately 1/5 to 1/6 as many factors as there were items. In addition, the seven-factor solution was the most consistent with past research (Mendes & Lyon, 1984; Lyon, 1987).

Results from the reliability analyses for each factor are shown in Table 15 below. Alpha coefficients were attained for the following factors: (1) pay/benefits (.75); (2) CF lifestyle issues (.74); (3) nature of the work (.75); (4) advancement opportunities (.78); (5) disillusionment with supervisor, job or role of CF (.73); (6) dissatisfaction with present MOC (.62); and, (7) postings (.47). Alpha coefficient scores ranged from .78 to .47 and showed that the internal reliability (consistency) for each factor was

Table 15
Step 2: Reliability analysis for seven-factor solution

Factor	Number of items	Alpha	Mean Score
1. Pay and Benefits	7	.75	4.06
2. Lifestyle Issues	7	.74	4.00
3. Nature of Job	6	.75	4.05
4. Advancement Opportunities	6	.78	4.01
5. Disillusionment With Supervisor/CF Role/Job	5	.73	3.80
6. Dissatisfaction With Present MOC	4	.62	4.05
7. Postings	3	.47	3.89

relatively high, with factors one through five being the most reliable. Reliability analysis on the 38 item scale for group 1 ($N=1,954$) produced a Coefficient Alpha score of .88.

Lastly, a higher order factor analysis was conducted on the seven-factor structure solution to determine whether these factors could be further reduced into individual, organizational and extra-organizational factors. Factor scores were computed for each of the factors. A PCA was then performed on the seven factor scores using an orthogonal rotation (see Table 16 below).

Table 16

Step 2: Higher order factor analysis for 4 factor solution (group 1)

Factor Score	Factor 1	Factor 2	Factor 3	Factor 4
1	.68	.10	.30	-.18
7	.58	.08	-.36	.34
6	-.37	.13	.08	.05
3	.10	.76	.18	.10
5	-.23	.62	-.24	-.13
2	-.03	.00	.83	.07
4	-.11	-.01	.07	.90

The higher order PCA produced a four factor solution with factor scores 1, 7, and 6 loading on factor 1. This factor consisted of primarily organizational items and was thus clearly defined. Factor scores 3 and 5 loaded on factor 2 that was comprised of both individual and organizational items. Factor score 2 loaded on factor 3 and reflected extraorganizational items. Factor score 4 loaded on factor 4 and consisted of organizational items. Higher order PCA with a 'forced' three factor solution was also

conducted. Factor scores 7, 1, and 6 loaded on factor 1 which was comprised of both individual and organizational items. Factor scores 3 and 5 loaded on factor 2 and consisted of primarily individual items. Factor scores 2 and 4 loaded on factor 3 and represented both extraorganizational and organizational items (see Table 17 below). Although the four-factor structure appeared to be most clear and well-defined of the two, neither higher order factor structures produced a completely consistent, clear and well-defined picture of Mobley et al's (1979), Lissak and Mendes' (1982), and Lyon's (1987) conceptualization of reasons for leaving the CF. Visual inspection of the three and four-factor solutions showed, however, that the three and four-factor higher order solutions were made-up of individual, organizational, and extra-organizational items.

Table 17
Step 2: Higher order factor analysis for 3 factor solution (group 1)

Factor Score	Factor 1	Factor 2	Factor 3
7	.63	-.02	-.10
1	.63	.15	.08
6	-.39	.12	.04
3	.12	.77	.17
5	-.21	.59	-.28
2	-.05	.13	.73
4	-.04	-.12	.59

Step 3: Reasons for leaving for sample two (N=1827)

Using listwise PCA to examine the data, ten factors were extracted for the second sample group (N=1827) having eigenvalues greater than 1. The ten-factor solution accounted for 57.7% of the total variance as shown in Table 18 on page 64. However, a visual examination of the rotated factor matrix showed a large number of items

loading on several different factors and the elbow in the Scree Plot indicated that there were either six or seven stable factors (see Figure 4 on p.66).

Two additional PCA's were, therefore, conducted in which six and seven factor solutions were specified to clarify the factor structure for the second sample group. In accordance with procedures used in step 2, descriptive labels were assigned to factors in a rational manner based on the underlying theme of the observed relationships among the various items. As can be seen in Tables 19 and 20 (see p.68-69 and p.70-71), the six-factor and seven-factor solutions accounted for 46.3% and 49.3% of the variance for Reasons for Leaving respectively.

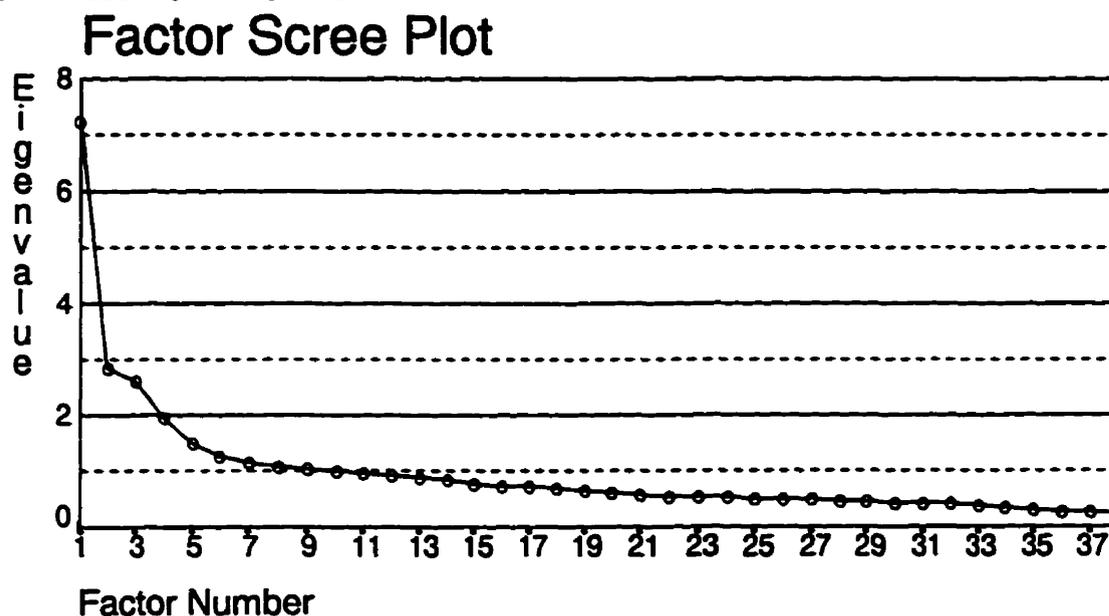
Table 18

Step 3: Listwise PCA ten-factor solution - reasons for leaving (N=1827)

Factor	Eigenvalue	% of Variance	Cumulative %
1	7.26795	19.1	19.1
2	2.85877	7.5	26.6
3	2.64549	7.0	33.6
4	1.99512	5.3	38.9
5	1.51749	4.0	42.9
6	1.29325	3.4	46.3
7	1.15774	3.0	49.3
8	1.10839	2.9	52.2
9	1.07069	2.8	55.0
10	1.02894	2.7	57.7

For the six-factor solution, the first factor accounted for 19.1% of the variance and was related to respondents' work environment and performance related perceptions. The items which make up this factor were heavily loaded with several fairness items (e.g., work performance not evaluated fairly, no credit for a job well done, and supervisor lacks interest in his/her subordinates). The second factor accounted for 7.5% of the variance and included items that reflected respondents' perceptions about pay and benefits (e.g., offered a new job that pays more, offered a job with more responsibilities, and attracted to a civilian job with more fringe benefits/job security). The third factor explained 7.0% of the variance and represented individuals' dissatisfaction with their present military occupation (e.g., MOC not useful for future civilian employment, future postings unattractive because of nature of work, and cannot get MOC I want). The fourth factor accounted for 5.3% of the variance and reflected respondents' individual values with respect to family issues (e.g., do not want to be separated from family, my career conflicts with spouse's career, and spending too much time away from home). The fifth factor explained 4.0% of the variance and represented respondents' dissatisfaction with their present job and pay (e.g., hours of work too long, not getting equal pay for equal work, and not being adequately compensated for overtime). The sixth factor accounted for 3.4% of the variance and reflected individuals' attitudes toward postings (e.g., future postings are unattractive because of location, postings disruptive to children's education, and cannot get the postings I asked for).

Figure 4: Scree plot step 3 PCA's



For the seven-factor solution, the first factor accounted for 19.1% of the variance and reflected respondents' perceptions about their new civilian jobs with respect to pay and benefits (e.g., offered a new job that pays more, offered a job with more responsibilities, and attracted to a civilian job with more fringe benefits/job security). The second factor accounted for 7.5% of the variance and represented respondents' dissatisfaction with the nature of their present work (e.g., hours of work are too long, not getting equal pay for equal work, and not being adequately compensated for overtime). The third factor explained 7.0% of the variance and reflected respondents' dissatisfaction with their present supervisor and the role of CF (e.g., supervisor disinterested in subordinates, immediate supervisor is incompetent, posting does not make good use of knowledge/training). The fourth factor accounted for 5.3% of the variance and represented individuals' values with respect to family issues as they relate to the CF lifestyle (e.g., do not want to be separated from family, CF career conflicts with spouses career, and spouse unwilling to move to new posting). The fifth factor explained 4.0% of the variance and represented respondents' perceptions about

advancement opportunities. The items which make up this factor were heavily loaded with several fairness items (e.g., unlikely to get a promotion, younger servicemembers getting promoted faster, and work performance not evaluated fairly). The sixth factor explained 3.4% of the variance represented individuals' dissatisfaction with their present military occupation classification (e.g., cannot get the MOC I want, MOC is not useful for future civilian employment, and going back to school). The seventh factor accounted for 3.0% of the variance and reflected respondents' attitudes toward postings (e.g., future postings are unattractive because of location/nature of work, and postings are disruptive to children's education).

Based on the obtained results, it was determined that the seven-factor solution was again the stronger, more well-defined, and stable of the two factor solutions. The seven-factor solution accounted for approximately 50% of the variance associated with reasons for leaving with about 1/5 to 1/6 as many factors as there were items. In addition, the seven-factor solution was the most consistent with past research and the results obtained in step 2 of this research project (Mendes & Lyon, 1984; Lyon, 1987).

Results from the reliability analyses for each factor are shown in Table 21 on page 71. Cronbach's alpha scores show the internal reliability of a set of items and the extent to which all items reflect the same underlying construct. Alpha coefficients were attained for the following factors: (1) perceptions about pay/benefits (.77); (2) nature of present job (.76); (3) dissatisfaction with supervisor or role of the CF (.75); (4) family issues (.75); (5) advancement opportunities (.68); (6) dissatisfaction with present MOC (.57); and, (7) postings (.48). Alpha coefficient scores ranged from .77 to .48 and showed that the internal reliability (consistency) for each factor was relatively high, with factors one through five showing the highest reliability. Reliability analysis on the 38 item scale ($N=1827$) produced a Coefficient Alpha score of .87.

Table 19
Step 3: PCA six-factor solution - reasons for leaving (N=1827)

Item	Variance	Load
<u>Factor 1 - Work Environment/Performance</u>	19.1%	
Work performance not evaluated fairly		.76
No credit for job well done		.72
Supervisor disinterested in subordinates		.68
Been discriminated against		.66
Immediate supervisor is not competent		.65
Unlikely to get promoted		.54
Younger members promoted faster		.51
Most recent posting does not make use of knowledge/training		.50
Insufficient tools or equipment to do job properly		.33
<u>Factor 2 - New Job Perceptions</u>	7.5%	
Offered a job that pays more		.84
Offered a job with more responsibilities		.77
Attracted to civilian job with more benefits		.77
<u>Factor 3 - Dissatisfaction With MOC</u>	7.0%	
MOC not useful for future civilian employment		.65
Future postings unattractive due to nature of work		.59
Cannot get the MOC I want		.56
Want more challenging work		.64
Going back to school		.54
MOC becoming or is obsolete		.46
Dislike physical work conditions		.40
Role in military undervalued/unappreciated in society		.38
<u>Factor 4 - Family Issues</u>	5.3%	
Do not want to be separated from family		.77
CF career conflicts with spouse's career		.68
Spending too much time away from home		.57
Spouse unwilling to move		.56
Stay at home and raise family		.55
Increase family stability by establishing roots in community		.55
Leaving because of compassionate circumstances		.44
<u>Factor 5 - Dissatisfied With Present Job/Pay</u>	4.0%	
Hours of work too long		.72

Table 19 continued...

Not getting equal pay for equal work		.59
Not compensated adequately for overtime		.56
Under too much stress		.43
Difficulty living on what I earn		.38
<u>Factor 6 - Postings</u>	3.4%	
Future postings unattractive because of location		.70
Postings disruptive to children's education		.46
Taking advantage of pension and potential civilian wage		.48
Cannot get the postings requested		.46

Note. Total variance accounted for = 46.3%.

Table 20
Step 3: PCA seven-factor solution - reasons for leaving (N=1827)

Item	Variance	Load
<u>Factor 1 - Pay/Benefits</u>	19.1%	
Offered a job that pays more		.85
Offered a job with more responsibilities		.82
Offered job with better job security		.77
Attracted to civilian job with more benefits		.77
<u>Factor 2 - Dissatisfaction With Present Job</u>	7.5%	
Hours of work too long		.73
Not getting equal pay for equal work		.61
Not compensated adequately for overtime		.61
Under too much stress		.45
Dislike physical work conditions		.43
Role in military undervalued/unappreciated in society		.40
Difficulty living on what I earn		.39
<u>Factor 3 - Dissatisfaction With Supervisor/role of CF</u>	7.0%	
Supervisor disinterested in subordinates		.72
Immediate supervisor is not competent		.71
Most recent posting does not make use of knowledge/training		.63
Want more challenging work		.53
No credit for job well done		.52
Insufficient tools or equipment to do job properly		.42
<u>Factor 4 - Family Issues</u>	5.3%	
Do not want to be separated from family		.78
CF career conflicts with spouse's career		.67
Spouse unwilling to move		.59
Increase family stability by establishing roots in community		.58
Spending too much time away from home		.56
Stay at home and raise family		.54
Leaving because of compassionate circumstances		.43
<u>Factor 5 - Advancement Opportunities</u>	4.0%	
Unlikely to get promoted		.72
Younger members promoted faster		.70
Work performance not evaluated fairly		.54
Been discriminated against		.54

Table 20 continued...

Cannot get the postings requested		.39
<u>Factor 6 - Dissatisfaction With Present MOC</u>	3.4%	
MOC not useful for future civilian employment		.66
Cannot get the MOC I want		.65
Going back to school		.59
MOC becoming or is obsolete		.45
<u>Factor 7 - Postings</u>	3.0%	
Future postings unattractive because of location		.70
Future postings unattractive due to nature of work		.56
Postings disruptive to children's education		.42
Taking advantage of pension and potential civilian wage		.42

Note. Total variance accounted for = 49.3%.

Table 21
Step 3: Reliability analysis for seven-factor solution

Factor	Number of items	Alpha	Mean Score
1. Pay and benefits	4	.77	4.02
2. Nature of Job	7	.76	4.08
3. Dissatisfaction With Supervisor/role of CF	6	.75	3.83
4. Family Issues	7	.75	3.86
5. Advancement Opportunities	5	.68	4.01
6. Dissatisfaction With Present MOC	4	.57	4.03
7. Postings	4	.48	3.91

Finally, a higher order factor analysis was conducted on the seven-factor structure solution to determine whether these factors could be further reduced into individual, organizational and extraorganizational factors. Consistent with the rationale provided for step 2 analysis, factor scores were computed for each of the seven factors. A PCA was then performed on the seven factor scores using an orthogonal rotation (see Table 22 below).

Table 22

Step 3: Higher order factor analysis for 4 factor solution (group 2)

Factor Score	Factor 1	Factor 2	Factor 3	Factor 4
4	.80	.18	-.16	.10
1	.57	-.39	-.006	-.14
3	.13	.85	.07	.03
5	.11	-.27	.06	.17
2	.02	-.08	.90	-.15
7	.03	-.08	-.43	-.27
6	-.01	-.09	.01	.92

The higher order PCA produced a four factor solution with factor scores 4 and 1 loading on factor 1, that was comprised of both extraorganizational and organizational items. Factor scores 3 and 5 loaded on factor 2 and reflected both individual and organizational items. Factor scores 2 and 7 loaded on factor 3 and once again represented both individual and organizational items. Factor score 6 loaded on factor 4 and was made-up of individual items. Higher order PCA with a 'forced' three factor solution was also conducted. Factor scores 2, 7, and 6 loaded on factor 1 which was made-up of organizational items. Factor scores 4 and 1 loaded on factor 2 and consisted of both extraorganizational and organizational items. Factor score 3 and 5 loaded on factor 3 and reflected both individual and organizational items (see Table 23

below). Neither the four-factor nor three-factor solutions provided a completely consistent, clear and well-defined picture of Mobley et al's. (1979), Lissak and Mendes' (1982), and Lyon's (1987) conceptualization of reasons for leaving the CF. Visual inspection of the three and four-factor solutions showed, however, that the three and four-factor higher order solutions were made-up of individual, organizational, and extra-organizational items.

Table 23

Step 3: Higher order factor analysis for 3 factor solution (group 2)

Factor Score	Factor 1	Factor 2	Factor 3
2	.60	.03	.56
7	-.51	.00	-.08
6	.46	-.04	-.16
4	.02	.82	-.05
1	-.25	.47	.44
3	.31	.32	-.64
5	.05	.04	.22

Step 4: Hypothesis testing Anglophones versus Francophones

PCA's, for which seven-factor solutions were specified, were conducted on sample group 3 Anglophone and Francophone respondents. The results obtained show that the factor structures for both Anglophones and Francophones are consistent, well-defined, and loadings were consistently high.

For Anglophones, the first factor accounted for 17.6% of the variance and reflected respondents' perceptions about career advancement opportunities (e.g., insufficient opportunities for advancement and promotions, unfair performance evaluations and promotion practices). The second factor accounted for 7.7% of the variance and represented respondents' individual values with respect to pay and

benefits (e.g., insufficient pay and benefits, and better job security). The third factor explained 7.4% of the variance and reflected individuals' personal dissatisfaction with the nature of their present work (e.g., hours of work are too long, not being adequately compensated for overtime, and I don't like the physical working conditions). The fourth factor accounted for 5.5% of the variance and was related to respondents' perceptions about CF lifestyle (e.g., I do not want to be separated from my family, and negative family/peer support). The fifth factor explained 4.7% of the variance and represented respondents' disillusionment with their MOC (e.g., lack of new skill acquisition, alienation from one's occupation, occupational skills not recognized in civilian world). The sixth factor explained 3.4% of the variance and mirrored individuals' dissatisfaction with postings (e.g., undesirable postings, postings without promotion, and postings not having been requested). Although the seventh factor accounted for only 3.2% of the variance and was not clearly defined, it appeared to be primarily comprised of "individualistic" items (e.g., I want more challenging work, posting does not make good use of my knowledge and skills, and I am going into business for myself). The seven-factor solution accounted for over 49.5% of the variance associated with reasons for leaving with approximately 1/5 to 1/6 as many factors as there were items (see Table 24 on p.75-76 and Figure 5 on p.78). This seven-factor solution was consistent with the seven factor solutions identified in both steps 2 and 3 and past research (Mendes & Lyon, 1984; Lyon, 1987).

For Francophones, the first factor accounted for 19.5% of the variance and clearly reflected respondents' perceptions about career advancement opportunities (e.g., insufficient opportunities for advancement and promotions, unfair performance evaluations and promotion practices). The second factor accounted for 8.4% of the

Table 24
Step 4: PCA seven-factor solution for Anglophones (N=1478)

Item	Variance	Load
<u>Factor 1 - Advancement Opportunities</u>	17.6%	
Work performance not evaluated fairly		.77
Supervisor disinterested in subordinates		.69
No credit for job well done		.67
Been discriminated against		.65
Immediate supervisor is not competent		.64
Younger members promoted faster		.58
Unlikely to get promoted		.49
<u>Factor 2 - Pay/Benefits</u>	7.7%	
Offered a job that pays more		.83
Offered a job with more responsibilities		.81
Attracted to civilian job with more benefits		.79
Offered job with better job security		.76
Difficulty living on what I earn		.41
<u>Factor 3 - Nature of Work</u>	7.4%	
Hours of work too long		.68
Not compensated adequately for overtime		.66
Not getting equal pay for equal work		.54
Dislike physical work conditions		.50
Under too much stress		.48
Role in military undervalued/unappreciated in society		.43
Insufficient tools or equipment to do job properly		.35
<u>Factor 4 - CF Lifestyle</u>	5.5%	
Do not want to be separated from family		.78
Stay at home and raise family		.63
CF career conflicts with spouse's career		.60
Increase family stability by establishing roots in community		.57
Spending too much time away from home		.52
Spouse unwilling to move		.49
Leaving because of compassionate circumstances		.49
Postings disruptive to children's education		.45
<u>Factor 5 - Dissatisfaction With Present MOC</u>	4.7%	
MOC not useful for future civilian employment		.71
Cannot get the MOC I want		.67
Going back to school		.56

Table 24 continued...

MOC becoming or is obsolete		.45
<u>Factor 6 - Postings</u>	3.4%	
Future postings unattractive because of location		.70
Future postings unattractive due to nature of work		.59
Cannot get the postings requested		.44
Taking advantage of pension and potential civilian wage		.39
<u>Factor 7 - Not Well-defined</u>	3.2%	
Want more challenging work		.71
Most recent posting does not make use of knowledge/training		.58
I am going into business for myself		.41

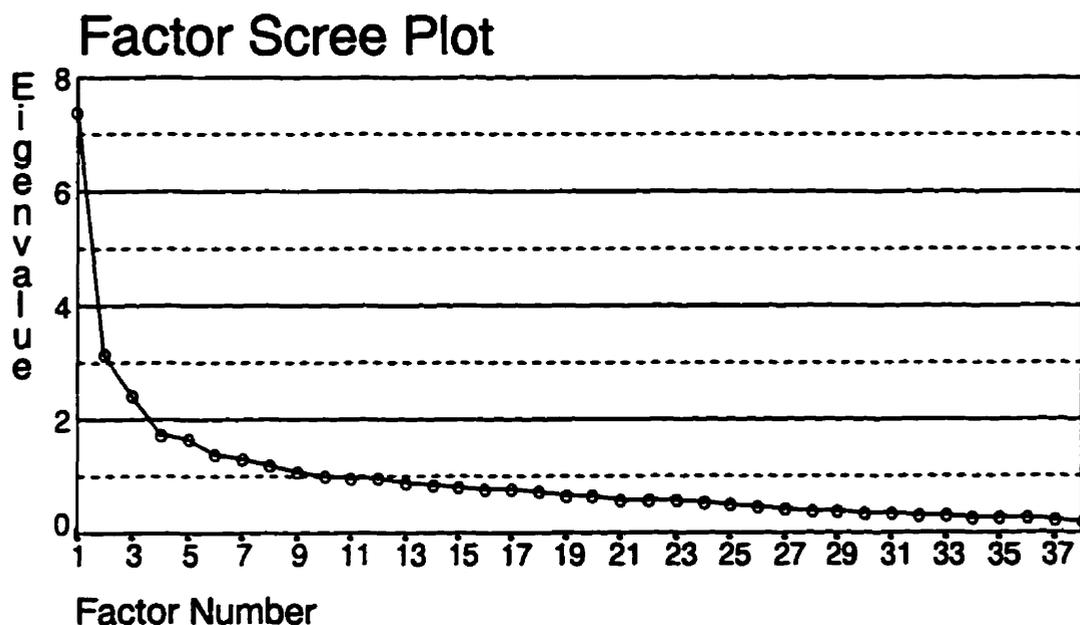
Note. Total variance accounted for = 49.5%.

variance and represented respondents' individual values with respect to pay and benefits (e.g., insufficient pay and benefits, and better job security). The third factor explained 6.4% of the variance and reflected individuals' personal dissatisfaction with the nature of their present work (e.g., hours of work are too long, not being adequately compensated for overtime, and I don't like the physical working conditions). The fourth factor accounted for 4.6% of the variance and seemed to be related to respondents' perceptions about CF lifestyle (e.g., I do not want to be separated from my family, and negative family/peer support). The fifth factor explained 4.4% of the Table 25 variance and represented respondents' disillusionment with their MOC (e.g., lack of new skill acquisition, alienation from one's occupation, occupational skills not recognized in civilian world). The sixth factor explained 3.7% of the variance and mirrored individuals' dissatisfaction with postings (e.g., undesirable postings, postings without promotion, and postings not having been requested). Although the seventh

Table 25
Step 4: PCA seven-factor solution for Francophones (N=369)

Item	Variance	Load
<u>Factor 1 - Advancement Opportunities</u>	19.5%	
Immediate supervisor is not competent		.68
Unlikely to get promoted		.67
Supervisor disinterested in subordinates		.65
No credit for job well done		.62
Younger members promoted faster		.60
Work performance not evaluated fairly		.59
Been discriminated against		.51
MOC becoming or is obsolete		.36
<u>Factor 2 - Pay/Benefits</u>	8.4%	
Offered a job that pays more		.81
Offered a job with more responsibilities		.79
Attracted to civilian job with more benefits		.73
Offered job with better job security		.69
Difficulty living on what I earn		.45
<u>Factor 3 - Nature of Work</u>	6.4%	
Insufficient tools or equipment to do job properly		.64
Hours of work too long		.63
Dislike physical work conditions		.55
Not compensated adequately for overtime		.55
Not getting equal pay for equal work		.48
Under too much stress		.46
Role in military undervalued/unappreciated in society		.41
<u>Factor 4 - CF Lifestyle</u>	4.6%	
Do not want to be separated from family		.77
Spouse unwilling to move		.68
Increase family stability by establishing roots in community		.66
CF career conflicts with spouse's career		.64
Postings disruptive to children's education		.54
Stay at home and raise family		.48
Spending too much time away from home		.46
<u>Factor 5 - Dissatisfaction With Present MOC</u>	4.4%	
MOC not useful for future civilian employment		.71
Going back to school		.64
Cannot get the MOC I want		.64

Figure 6: Scree plot step 4 PCA (Francophone)



factor accounted for only 3.5% of the variance and was not clearly defined, it appeared to be primarily comprised of “individualistic” items (e.g., I am taking full advantage of my pension and potential civilian salary, I want more challenging work, I am leaving because of compassionate reasons, and I am going into business for myself). The seven-factor solution accounted for over 50.4% of the variance associated with reasons for leaving with approximately 1/5 to 1/6 as many factors as there were items (see Table 25 on p.77-78 and Figure 6 above). This seven-factor solution was also consistent with the seven factor solutions identified in steps 2, 3, 4 (Anglophones) and past research (Mendes & Lyon, 1984; Lyon, 1987).

Factor scores were calculated for group 3 respondents (combined, Anglophone, and Francophone) for each of the factors in the seven factor solution. Independent t-tests were then conducted between the Anglophone and Francophone groups on these factor scores. These tests were conducted to analyze whether differences existed

between Anglophones and Francophones on the seven identified factors, using factor scores. Seven post-hoc independent t-tests were run. A Bonferroni adjustment resulted in $p=.007$. Results from the independent t-tests conducted between Anglophones and Francophones showed: the factor scores were significantly different between groups on factor 1 - career advancement opportunities ($t(575.12)=3.74, p=.000$), factor 4 - CF lifestyle issues ($t(524.31)=8.09, p=.000$), and factor 7 - not well defined ($t(550.44)=6.79, p=.000$). Although Anglophones and Francophones did not differ significantly on factor 6 - postings, the t-test did approach significance ($t(560.96)=-2.59, p=.01$). Anglophones and Francophones did not differ significantly on factor 2 (pay/benefits), 3 (nature of work), and 5 (dissatisfaction with MOC).

Results from the reliability analyses for each factor for both Anglophones and Francophones are reported below. Alpha coefficients were attained for Anglophones for the following factors: (1) career advancement opportunities (.82); (2) pay/benefits (.81); (3) dissatisfaction with nature of work (.75); (4) CF Lifestyle issues (.71); (5) disillusionment with MOC (.61); (6) postings (.51); and, (7) not well-defined (.45). Alpha coefficient scores ranged from .82 to .45 and show that the internal reliability for each factor ranges from high to moderate, with factors one through five being the most reliable.

Alpha coefficients were attained for Francophones for the following factors: (1) career advancement opportunities (.82); (2) pay/benefits (.79); (3) dissatisfaction with nature of work (.76); (4) CF Lifestyle issues (.76); (5) disillusionment with MOC (.53); (6) postings (.51); and, (7) not well-defined (.11). Alpha coefficient scores ranged from .82 to .45 and show that the internal consistency for each factor ranges

from high to moderate (with exception to factor 7), with factors one through four being the most reliable. Reliability analysis on the 38 item scale for group 3 ($N=1,847$) produced a Coefficient Alpha score of .86.

In addition, the frequencies of responses on the 38 items were tabulated for both Anglophones and Francophones and the percent of the variance accounted for was analyzed. The most important and commonly cited reasons (as determined by 50% or more of the respondents) for leaving for both Anglophones and Francophones are shown in Tables 26 and 27, respectively (see p.82-84). For Anglophones, the five most important and commonly cited reasons for leaving the CF were: I want more challenging work (65.0%), Want to increase family stability by establishing roots in community (65%), future postings unattractive because of nature of work (65%), I am not being adequately compensated for overtime (57.2%), and I do not want to be separated from my family (53.2%).

For Francophones, the five most important and commonly cited reasons for leaving were: I do not get credit for a job well done (72.6%); I want more challenging work (70.5%); I want to increase family stability by establishing roots in some community (69.8%); I am not being adequately compensated for overtime (68.3%); and, My work performance is not evaluated fairly (66.3%). As previously seen in the step 1 analyses, Francophones cited 17 reasons for leaving as being important (50% or over) whereas Anglophones only cited 8 reasons.

Higher order factor analyses were also conducted on the factor scores that had been calculated for each of the seven factor solutions for group 3 Anglophone and Francophone respondents. Again, this analysis was performed in order to determine whether or not the seven factors could be further reduced into individual, organizational and extra-organizational factors.

Table 26**Step 4: Most important reasons for leaving cited by Anglophones (N=2,042)**

Item Number	Descriptor	Cumulative % of Responses
3	I want more challenging work	65.0
30	Want to increase family stability by establishing roots in community	65.0
10	Future postings unattractive because of nature of work	57.2
6	I am not being adequately compensated for overtime	53.2
44	I do not want to be separated from my family	53.1
15	My work performance is not evaluated fairly	52.8
30	I am spending too much time away from home	51.7
20	I do not get credit for a job well done	50.7

Table 27**Step 4: Most important reasons for leaving cited by Francophones (N=533)**

Item Number	Descriptor	% of Responses
10	I do not get credit for a job well done	72.6
3	I want more challenging work	70.5
30	Want to increase family stability by establishing roots in community	69.8
4	I am not being adequately compensated for overtime	68.3
15	My work performance is not evaluated fairly	66.3
20	I am spending too much time away from home	64.3
44	I do not want to be separated from my family	63.9
41	I am leaving because of compassionate reasons	61.7
8	I was offered a job with more responsibilities	57.8
46	My role in CF undervalued in Canadian society	56.6
5	I am going back to school	55.6
36	Posting does not make good use of knowledge and training	52.6
31	I have been offered a job that pays more	52.9
7	I have difficulty living on what I earn in CF	52.5

Table 27 Continued...

6	Future postings unattractive due to nature of work	52.2
25	I don't like my physical work conditions	52.5
28	My supervisor lacks interest in his/her subordinates	51.1
45	I am not getting equal pay for equal work	50.7

The higher order PCA for Anglophones produced a four factor solution with factor scores 5 and 7 loading on factor 1. This factor was primarily made-up of individual items. Factor scores 3 and 4 loaded on factor 2 and consisted of both organizational and extra-organizational items. Factor score 2 loaded on factor 3 and was comprised of organizational items. Factor scores 1 and 6 loaded on factor 4 and were made-up of organizational items. A higher order PCA with a 'forced' three factor solution was also conducted. Factor score 6 loaded on factor 1 and consisted of organizational items. Factor scores 3, 1, and 4 loaded on factor 2 and was comprised of both organizational and extra-organizational items. Factor scores 5, 2 and 7 loaded on factor 3 and was made-up of individual and organizational items (see Tables 28 and 29 on the next page). Neither the three-factor nor four-factor solution was able to provide a completely consistent, clear and well-defined picture of Mobley et al's. (1979), Lissak and Mendes' (1982), and Lyon's (1987) conceptualization of the reasons for leaving the CF. Visual inspection of the three and four-factor solutions showed, however, that the three and four-factor higher order solutions were made-up of individual, organizational, and extra-organizational items.

Table 28**Step 4: Four-factor Higher Order PCA for Anglophones (group 3)**

Factor Score	Factor 1	Factor 2	Factor 3	Factor 4
5	.78	.16	-.10	-.15
7	-.51	.17	-.05	-.10
3	.10	.83	.07	-.06
4	-.11	.45	-.03	.09
2	-.10	.08	.89	-.11
1	-.08	.14	-.12	.86
6	.30	-.16	.43	.44

Table 29**Step 4: Three-factor Higher Order PCA for Anglophones (group 3)**

Factor Score	Factor 1	Factor 2	Factor 3
6	.70	-.09	.00
3	-.11	.61	-.03
1	.52	.58	-.04
4	-.06	.44	.07
5	.10	-.08	-.68
2	.35	-.20	.62
7	-.32	.21	.39

Similar results were attained for the Francophone group (see Table 30 on p.86). The higher order PCA for Francophones produced a four factor solution with factor scores 5 and 7 loading on factor 1. This factor was primarily made-up of individual items. Factor scores 6 and 2 loaded on factor 2 and consisted of mainly organizational items. Factor score 4 loaded on factor 3 and was comprised of extra-organizational

items. Factor scores 1 and 3 loaded on factor 4 which was made-up of mostly organizational items.

Higher order PCA with a 'forced' three factor solution was also conducted (see Table 31 on p.87). Factor scores 7, 5, and 3 loaded on factor 1 which consisted of both individual and organizational items. Factor scores 6 and 1 loaded on factor 2 which was comprised of mainly organizational items. Factor scores 2 and 4 loaded on factor 3 and was made-up of both organizational and extra-organizational items. Although the four-factor solution for Francophones appeared to be the best solution of the two, neither the four-factor nor three-factor solutions were able to provide a completely consistent, clear and well-defined picture of Mobley et al's. (1979), Lissak and Mendes' (1982), and Lyon's (1987) conceptualization of the reasons for leaving the CF. Visual inspection of the three and four-factor solutions showed, however, that the three and four-factor higher order solutions were made-up of individual, organizational, and extra-organizational items.

Table 30
Step 4: Four-factor Higher Order PCA for Francophones (group 3)

Factor Score	Factor 1	Factor 2	Factor 3	Factor 4
7	.70	-.07	-.00	-.02
5	-.62	-.05	-.03	-.02
6	-.18	.77	.23	-.03
2	.22	.63	-.39	.04
4	.04	.03	.78	.00
1	-.14	-.08	-.27	.73
3	.14	.08	.32	.68

Table 31
Step 4: Three-factor Higher Order PCA for Francophones (group 3)

Factor Score	Factor 1	Factor 2	Factor 3
7	.68	-.06	.03
5	-.61	-.03	-.07
3	.31	.01	-.26
6	-.13	.70	.27
1	-.02	-.47	.07
2	.19	.19	.71
4	.14	.50	-.59

Step 5: Item analysis

Results from the item analysis that was conducted on the “additional reasons” for leaving portion of Section 1 of the CFAIQ indicated that a number of items should be added to the questionnaire. Three hundred previously completed questionnaires were visually scanned and the additional comments critically analyzed and sorted into categories or general themes. Seventy-nine respondents indicated that they had left the CF as result of their dissatisfaction with leadership in the organization, both at the senior and immediate supervisory levels. A number of respondents added that they were disgruntled with the obvious double standards that seem to exist between Officers and Non-Commissioned Members (NCM’s).

The second most commonly reported additional reason was that there are an insufficient number of promotions available as a result of the low turnover rates and downsizing experienced by the CF over the past several years (reported by sixty-five of the individuals). This has resulted in promotion backlogs for most occupations. The third most commonly stated additional reason was a general dissatisfaction with the CF’s Performance Evaluation Recording (PER) systems for both Officers and

NCM's (fifty-eight personnel cited this reason). Twenty-nine respondents indicated that a general lack of training and career/ professional development had contributed to their leave decision. Twenty-three respondents cited poor morale and lack of unit cohesion/discipline as being an additional reason for leaving the CF. Furthermore, twenty respondents wrote that they were extremely frustrated with the lack of political support that the CF has received over the past couple of years, and that this frustration had influenced their leave decision.

Finally, twenty leavers reported that they were dissatisfied with either their present job or military occupation. Sixteen respondents also cited a general disillusionment with the future direction of the CF (e.g., personnel reduction, increased United Nations commitments, and too much political interference). Eight leavers also reported that they needed a change from the CF and the same number mentioned that they were dissatisfied with their Career Manager. In addition, three individuals reported "life-threatening" or potentially dangerous employment and two individuals mentioned sexual harassment as having influenced their leave decision.

Discussion

Test validation of the CFAIQ began during the early stages of its initial development. Over a period of approximately five years, the psychometric properties of the questionnaire were examined and refinements made accordingly. More recently, however, Parker (1992) and CFPARU (1995) questioned the psychometric properties of Section 1 - Reasons for Leaving - and raised the issue of whether or not it was equally valid and reliable for both Anglophones and Francophones. Moreover, the industrial/organizational literature indicates that validation studies should be conducted on an on-going basis (Spector, 1992; Carmines & Zeller, 1979).

Although the test validation strategy utilized in this research project involved replicating earlier validity tests, additional statistical (inferential and descriptive) tests

and procedures were used in this research project to strengthen and support these earlier findings. The validation evidence gained and accumulated in this research project has clearly shown that the extremely high level of reliability (internal consistency) currently associated with Section 1 of the CFAIQ can be maintained by eliminating certain items, while at the same time vastly improving its content and construct validity. This can be achieved by simply eliminating items 1, 21, 23, 32, 34, 39, 40, and 42 from Section 1 of the questionnaire. Results from this research project have consistently shown that the revised and refined version of Section 1 possesses a satisfactory level of internal-consistency, that is an indication of how well its individual items represent the common, underlying construct of voluntary attrition/turnover in the CF.

The item analyses and the information gained from the two focus groups at CFB Esquimalt provided evidence to support dropping items 1, 21, 23, 32, 34, 39, 40, and 42 from Section 1 of the CFAIQ. The item analyses conducted during step 1 of this research project clearly showed that these items were deemed to be unimportant by the majority of personnel who had left the CF and that they could be dropped without affecting the high level of internal consistency of the scale. Qualitatively, additional support for dropping some of these items (1, 23, 34, and 42) was received in the form of feedback from the focus group sessions. Participants felt that these items were not really relevant to the issue of voluntary attrition as they were more related to compulsory release or retirement from the CF.

Four additional items were dropped from Section 1. These items included: 21 - "I have been offered a civilian job with less responsibility"; 32 - "I do not get along with my co-workers"; 39 - "I do not want to work in a mixed gender unit"; and, 40 - "I do not want to work in an operational role". Intuitive suggestions are offered as to why they were deemed to be of no or little important with respect to the voluntary leave decision. Although item 21 might be valid in some cases, it appears that the issue of

responsibility associated with a civilian job is more adequately and positively addressed by item 8 ("I was offered a civilian job with more responsibilities). It was felt that most respondents would not be willing to admit to accepting a job with less responsibility, even if it were true. In addition, social desirability issues may bias and restrict the range of responses on this item. Item 32 appears to be of little or no importance to the leave decision as a result of its negative and somewhat anti-social connotations. It is unlikely that members would report this for fear of being viewed negatively or, in reality, give up their careers/jobs as a result of not getting along with their co-workers (personnel are posted regularly and would be able remove themselves from these situations).

Item 39 also appears to be of little or no importance to the leave decision as a result of respondents not wanting to be viewed as sexist. Another explanation for this might be that very few people are actually intimidated or offended by having to work with members of the opposite sex. In cases where an individual is offended or intimidated, it is unlikely that this reason alone would be sufficient to active their leave decision as most civilian organizations are also mixed gender employers. With respect to item 40, the majority of people who enroll in CF are being actively recruited for operational type employment (e.g., Combat Arms). Even those people that are recruited into support type occupations are informed that they will serve in some operational capacity throughout various stages of their career. Most personnel have, therefore, already made a conscious decision to be employed in various operational settings prior to joining the CF.

The reliability analyses conducted in step 1 also showed that these same eight items could be dropped from the scale without reducing its current high level of internal consistency (Coefficient Alpha score of .87). In addition, the item analyses conducted during this step clearly indicated that the aforementioned items were rated as being either untrue or of no importance by well over 75% of the respondents from

all four data sets (which included both an Anglophone and Francophone group). Thus, both Anglophones and Francophones felt that these items were unimportant with respect to their leave decisions.

In essence then, items 1, 21, 23, 32, 34, 39, 40, and 42 were shown to have poor discriminatory power, content validity, and internal consistency. These items were subsequently dropped from the scale and any of the latter analyses conducted in steps 1-4. As a result, it was believed that the high level of internal consistency currently associated with the reasons for leaving scale was maintained while its content and construct validity was improved.

Furthermore, the analyses conducted for step 1 and step 5 indicate that Section 1 might be expanded to include several additional items. Results from the two focus groups and item analysis conducted on the previously completed questionnaires indicate that additional items pertaining to and/or clarifying issues of poor leadership, lack of advancement opportunities, dissatisfaction with the present performance appraisal system, pay/benefits, postings, spousal employment, employee needs/support, morale, and dangerous working conditions might be included in any future revisions to Section 1 of the questionnaire.

The analyses conducted for step 1 and step 4 also showed that Anglophones and Francophones generally cite the same five reasons for leaving the CF as being the most important in the leave decision process. These items typically consist of: "I want more challenging work", "I want to increase family stability by establishing roots in some community", "my work performance is not evaluated fairly", "I do not want to be separated from my family", and "I do not get credit for a job well done." Although there are differences between the two groups as to how they rank order these items, they consistently appear as the five most important reasons cited for leaving the organization. These findings do not, however, support the second hypothesis put forward in this study. The hypothesis was that Anglophones would cite job related

issues as being most important in their leave decision, whereas Francophones would cite family issues.

In addition, unlike Farley (1994) and Parker's (1992) earlier research, the results from the seven-factor PCA's identified in step 4 analyses clearly showed that the most important reasons cited for leaving by Anglophones and Francophones are extremely similar (see Table 32 on p.94). That is, the factor accounting for the most variance (17.6%) in the voluntary attrition behavior for Anglophones is related to their perceptions about career advancement opportunities. These are also the most important reasons cited by Francophones (accounting for 19.5% of the variance). The remaining six factors for both Anglophones and Francophone are very similar with respect to their rank ordering and the amount the total variance that each factor accounts for. Contrary to previous research, these findings may be the result of having used a much larger and less specific Anglophone and Francophone sample groups (e.g., not looking at NCM hard-sea occupations).

As previously reported by Parker (1992), the results of this study confirmed that Francophones consistently cite a larger number of and more diverse reasons as being important in their leave decision. Their reasons typically reflect work and occupational (e.g., work challenge and unfair evaluations), family (e.g., family stability and time away), and extra-organizational (e.g., school, military role undervalued and civilian job offers) issues. Conversely, Anglophones typically report fewer and less diverse reasons as being important in their leave decision. Francophones consistently report 17 items as being important to the leave decision process, whereas Anglophones report only 8 items as being important (see Tables 10, 11, 26, and 27). Thus, the hypothesis that Francophones would report a larger number of and more diverse reasons for leaving than Anglophones was supported.

The PCA's conducted for step 2, step 3, and step 4 clearly and consistently showed that a seven-factor structure provided the clearest, most stable and well-

defined solution for the remaining 38 items. Although the seven factors are sorted and labeled in a subjective manner and they tend to account for differing proportions of the variance associated with voluntary leave decision behavior, the seven factors were consistently identified and labeled as pay/benefits, CF lifestyle, nature of the job, advancement opportunities, dissatisfaction with supervisor/job/role of the CF, dissatisfaction with MOC, and postings. The results of the separate PCA's conducted in stage 2 and 3 showed that the most important reasons cited for leaving for both group 1 and group 2 are very similar. That is, the factor accounting for the most variance (19.1%) in the voluntary attrition behavior of group 1 respondents was related to their perceptions about pay and benefits. The same was true for group 2 (accounting for 19.7% of the variance). Furthermore, the seven factor solutions typically accounted for over 50% of the total variance associated with reasons for leaving, with there being approximately 1/5 to 1/6 as many factors as there were items. These results are consistent with the earlier findings of Lissak and Mendes (1982), Mendes and Lyon (1984), and Lyon (1987).

The seven-factor solutions identified in steps 2-4 were, therefore, deemed to be extremely consistent, well-defined, and strong. Independent t-tests conducted on Anglophone and Francophone factor scores in step 4 indicated that differences do exist between these two groups on these seven factors. Significant differences were detected between Anglophones and Francophones on factors 1 (career advancement opportunities), 4 (CF lifestyle issues), and 7 (poorly defined). There were no differences, however, between Anglophones and Francophones for factors 6 (postings), 2 (pay/benefits), 3 (nature of work), and 5 (dissatisfaction with MOC).

Reliability analyses conducted during steps 2-4 showed that the remaining 38 items consistently loaded on and reflected the same underlying construct for each of the seven respective factors. Alpha coefficients of .70 or higher were attained for the first five of the seven factors. As expected, the last two factors were generally the

least stable and reliable of the factors in the solution. The reliability analyses that were conducted for steps 1-4 for the entire 38 item scale also consistently produced Coefficient Alpha scores well above .80. These results clearly showed that the revised Section 1 is an equally reliable (internally consistent) and much more valid scale than the present one.

Table 32

Comparison of factor labels and variance accounted for by factors for separate Anglophone and Francophone seven-factor solutions

Factor Labels	Variance
1. (ANG) Advancement Opportunities	17.4%
(FRA) Advancement Opportunities	19.5%
2. (ANG) Pay/Benefits	7.7%
(FRA) Pay/Benefits	8.4%
3. (ANG) Nature of Work	7.4%
(FRA) Nature of Work	6.4%
4. (ANG) CF Lifestyle	5.5%
(FRA) CF lifestyle	4.6%
5. (ANG) Dissatisfaction with Present MOC	4.7%
(FRA) Dissatisfaction with Present MOC	4.4%
6. (ANG) Postings	3.4%
(FRA) Postings	3.7%
7. (ANG) Individual Items	3.2%
(FRA) Individual Items	3.5%
Total (ANG)	49.5%
(FRA)	50.4%

Higher order factor analyses also showed that the seven general factors that had been consistently identified during steps 2-4 could be reduced further into three or four higher order (principal) factors. These factors were easily identified as consisting of

individual, organizational, and extra-organizational items and were moderately to highly consistent with Mobley et al's. (1979), Lissak and Mendes' (1982), and Lyon's (1987) three-factor conceptualization of reasons for leaving the CF. The three and four-factor higher order solutions were, however, sometimes made-up of a mixture of individual, organizational, and extra-organizational items. The higher order factor structures were not, therefore, as clear and well-defined as previously postulated in earlier research. It is believed that the reason for this was due, in part, to the fact that many of the items reflect and load on more than one factor. This is due, in part, to the great deal of overlap that exists between the various items and the three higher order factors. For example, family issues can influence and have an impact on all three factors. An employee may be experiencing pressure from a spouse (an extra-organizational variable), which may lead to the member seeking alternative employment which pays more or provides better benefits (an organizational variable), which may in turn decrease his/her interest (an individual variable) in their present job.

In addition, Parker's (1992) suggestion about collapsing the five levels of responding for each item into two categories (important and unimportant) seems to be unfounded and unnecessary. As argued by Spector (1992) and Coolican (1990), a two response item might severely restrict the range of potential responses and thus, not all the turnover behavior information would be gained. Although it is commonly believed that the larger the number of responses an item has, the greater is its precision, there is a point of diminishing returns. It is, therefore, generally agreed upon that five to nine choices are optimal for most uses (Spector, 1992).

In summary, Spector (1992) postulated that the development of a scale is a continual process which typically never ends. It is, therefore, important to keep in mind when both creating and refining a scale that content/construct validity and reliability (internal consistency) can only be supported and never actually proven. It is possible, however, to show that a construct performs in a fashion that is consistent

with its conceptual framework. This research project has successfully shown that a revised and refined Section 1 can provide the CF with an equally reliable (internally consistent) and more valid (from both a content and construct perspective) scale. This will inevitably provide the CF with a better picture of the reasons why personnel voluntarily leave the CF.

Although primarily concerned with examining the psychometric properties of Section 1 from a practical perspective, results from this study have also confirmed and provided support for Mobley et al.'s (1979), Lissak and Mendes' (1982), and Lyon's (1987) theoretical conceptualization of the reasons for leaving the CF. It is clearly evident that the three principal factors (identified as consisting of individual, organizational, and extra-organizational variables) can be decomposed into seven highly stable, strong, and well-defined general factors. These factors were identified and labeled as: pay/benefits; CF lifestyle issues; dissatisfaction with immediate supervisor/role of CF; nature of the work; career advancement opportunities; dissatisfaction with MOC; and, postings.

Limitations

There are, however, several limitations associated with this research project. As previously mentioned, this research project was primarily concerned with examining the psychometric properties of Section 1 from a practical perspective. Although the results from this study have provided partial support for Mobley et al.'s (1979), Lissak and Mendes' (1982), and Lyon's (1987) theoretical conceptualization of the reasons for leaving the CF, a more sophisticated and complete validation strategy might have been incorporated to test the theoretical model out of which the questionnaire was formulated and developed. Mobley et al.'s (1979) model provided the theoretical and conceptual framework around which the CFAIQ was designed and constructed. In

view of this, it is argued that the analyses conducted in this research project should have been both of a practical and theoretical nature.

More specifically, by using both exploratory principal components analysis and confirmatory factor analysis the issues of practical and theoretical validity could have been better addressed in this research project. Exploratory factor analysis attempts to describe and summarize data by grouping together variables which are correlated and is used mainly in the initial stages of research. Thus, it provides a framework for identifying variables and generating hypotheses about underlying processes. Confirmatory factor analysis is, on the other hand, a more sophisticated analytical technique. It is typically used in the advanced stages of research to test a theory about latent processes or to examine hypothesized differences in latent processes between groups of subjects. Constructs or variables are carefully and specifically selected to show underlying processes.

Furthermore, FA produces factors whereas PCA produces components. The most significant difference between these two techniques is in the type of variance in the observed variables that is analyzed. In PCA, all the variance in the observed variables is analyzed. In essence, this provides the researcher with an empirical summary of the data set. In FA, only shared variance is analyzed in an attempt to estimate and remove variance due to error and variance that is unique to each variable (uncontaminated).. Confirmatory FA, therefore, is the recommended technique to be used when the intent of the research is to specifically test theory.

By using both exploratory PCA and confirmatory FA, this research project would have been able to more adequately address issues of practical and theoretical validity. It is proposed, therefore, that the data analyzed in this research project be re-examined in the future using a more sophisticated validation strategy. The first two stages of data analysis in this research project should not be altered. In particular, exploratory PCA (conducted in stage two) is essential for reducing the data into potential components

(factors) and generating hypotheses about underlying processes. Confirmatory FA should then be utilized and substituted, however, for exploratory PCA in stages three and four of this project. This would enable the researcher to test the theory (model) that was generated in earlier research and stage two of this project. By using the proposed data analysis strategy, Mobley et al.'s (1979), Lissak and Mendes' (1982), and Lyon's (1987) theoretical conceptualization (model) of the reasons for leaving the CF would be better examined and its validity tested.

Second, the CFAIQ is an exit questionnaire which solicits attitudinal information from personnel on their departure from the CF (questionnaires are, however, filled out on a voluntary basis). This information is then used to identify personnel problems and subsequently minimize turnover by changing personnel policies. The fact that the CFAIQ is completed on a voluntary basis poses a problem in itself. It has been found that approximately fifty percent of voluntary leavers do not complete the questionnaire. This is a somewhat poor response rate and indicates that there might be a lot of relevant information associated with the leave decision process that is not being reported.

Personal experience, as an administrator of the CFAIQ, indicates that a large number of voluntary leavers do not fill out the questionnaire because they are frustrated and upset with the perceived lack of response from the "military personnel system." They know that their comments will not improve their situation because they are solicited on their departure from the CF. Some personnel also believe that the "personnel policy-makers" in the CF are neither responsive to personnel issues nor interested in trying to meet the individual needs of its members (these attitudes were also witnessed in the focus groups conducted in this research project). Furthermore, the CFAIQ is administered during the final days of an individual's release process. This period of time is extremely hectic and stressful for personnel. Personnel are simultaneously attempting to clear out from their respective base or unit (a lengthy and

arduous process in itself) whilst ensuring that pay, benefits, medical/dental, and travel (etc.) issues are also being sorted out. As a result, it appears that personnel find completing the CFAIQ to be an imposition and they are reluctant to complete the questionnaire. This, in turn, limits and possibly skews the type of information gained on the CFAIQ. Thus, it may not be providing researchers and personnel policy-makers with a complete and clear picture of voluntary attrition in the CF.

Another body of research also shows that exit questionnaires, like the CFAIQ, might not be as practical as once thought. Research by O'Reilly and Caldwell (1981) and Kline and Peters (1991) shows that behavioural commitment has a substantial impact on employee tenure and that there are relationships between behavioural commitment and perceived volition, publicness, and revocability. Job acceptance is defined as an identifiable act on the part of applicants which implies their potential willingness to form and maintain a continuing relationship with an organization. According to theory, the more highly committed applicants are to job acceptance, the greater should be their job longevity. As outlined by Salancik (1977a, b), the degree to which high volition, low revocability, and high publicness represent an act of job acceptance, an individual's behavioural commitment should increase (Kline & Peters, 1991).

O'Reilly and Caldwell (1981) examined Salancik's model and found that both volition and revocability had significant relationships with behavioural commitment. They also found that behavioural commitment and turnover were significantly associated. Kline and Peters (1991) replicated and extended O'Reilly and Caldwell's earlier research. More specifically, they found that newly hired employees that entered the organization with high behavioural commitment stayed nearly three times longer than those with low behavioural commitment. They also suggested that behavioural commitment and other contributors to commitment propensity may act as a link between initial organizational contact and later organizational experience. Hence, they

argued that employees with high behavioural commitment tend not only to stay longer than their counterparts but may be predisposed to interpret and evaluate their organizational experiences more positively. With this in mind, they further postulated that behavioural commitment might not only influence early turnover decisions but also add to later employee adjustment for those who continue after the initial period of employment.

The results of the aforementioned researchers suggest that new employees arrive on their first day of work with measurable differences in their commitment to their employment choice. Their findings, and the findings of other prominent theorists (such as Locke and Latham), also indicate that interventions aimed at managing behavioural commitment and voluntary attrition should include an assessment of relevant individual differences in commitment and conscious efforts to influence and modify important contextual precursor variables. Thus, the approach advocated by O'Reilly and Caldwell (1981) and Kline and Peters (1991) appears to be more sophisticated and proactive than other existing approaches. For example, the CFAIQ fails to assess behavioural commitment and does not make a conscious effort to control key contextual precursor variables. Instead, the CFAIQ solicits attitudinal information as an individual leaves the organization. Personnel concerns or negative attrition trends are then reported to NDHQ only if and when they are detected. NDHQ then decides upon whether or not the key respective contextual precursor variable should or should not be modified. This process occurs after the fact and does not address the needs of those personnel who feel compelled to leave the CF. In reality, the CFAIQ has been used ineffectively and as a result little has been done to manage and control voluntary attrition.

Based on the above discussion, it is suggested that entrance measures might be more valuable than the more traditional exit measures currently being used by organizations like the CF. Due to the scope of this research project, however, this

newer body of literature was not incorporated into this study. Instead, it is recommended that any future research conducted on the CFAIQ should incorporate behavioral commitment theory and the notion of attaining entrance measures into the existing CF model of turnover.

Third, the CFAIQ was designed to be a “dynamic” measurement instrument which would reflect current personnel concerns and issues. Although the scale items included in Section 1 of the CFAIQ appeared to have been well constructed initially and inclusive of most potential personnel concerns/issues, a number of limitations associated with its development have since been identified. The political and economical climate within the CF has changed dramatically since the questionnaire was implemented in 1989. Employment equity, personnel downsizing, and massive budgetary cuts (etc.) have drastically changed and reshaped personnel policy in the CF over the past decade. These changes have in turn created new and potentially problematic reasons for large numbers of military personnel voluntarily leaving the organization. For example, large numbers of departing members have reported that they were leaving the CF as a result of either voluntary (motivated primarily by cash incentives) or compulsory downsizing (certain occupations were targeted and members were subsequently forced to leave).

The CFAIQ, therefore, is not able to detect new trends well and detection (if and when it does occur) tends to happen only after the issue or problem has been allowed to exist for a lengthy period of time. By the time the problem is detected, it is highly probable that it is too late for the organization to make any changes of consequence. More simply stated, dissatisfied personnel are likely to have already left the organization prior to changes being made. This seems to be somewhat analogous of the dog that is constantly being wagged by its tail.

Based on the above, and if the CFAIQ continues to exist in its current format in the future, it is believed that the additional reasons for leaving in Section 1 of the

CFAIQ should be monitored on an on-going basis in order to ensure the timely recognition of new issues/problems. As new reasons and potentially negative personnel trends are identified, the importance of these issues can be further examined by conducting focus groups. This may or may not lead to the revamping of existing items and/or new items being incorporated into the questionnaire. Also, items that no longer represent current trends or are deemed to be unimportant or irrelevant might also be removed from the questionnaire.

These changes should not, however, be implemented in an unscientific or random manner and would therefore require that items be evaluated from both a reliability and validity perspective. Hence, the CFAIQ might have to be periodically evaluated (psychometrically) as new trends are detected and/or as other trends become less important. This in itself is an expensive and time consuming proposition. A more stable measurement instrument (e.g., that perhaps measures behavioural commitment) might, therefore, be more appropriate and cost effective.

Last, this research project specifically compared the reasons cited by both Anglophones and Francophones in their leave decisions. Although there are a number of other variables (such as age, rank, sex etc.) that might have been examined, it was decided to focus solely on this variable for primarily three reasons. First, the CFAIQ is produced in both of Canada's official languages and is currently being administered to Anglophones and Francophones. Second, it was believed that the initial design, construction and validation of the Francophone version of the questionnaire was suspect. Third, CFPARU, the sponsor of this research project, specifically requested that the psychometric properties of both the English and French versions of the questionnaire be examined and the two groups be compared. Based on these factors, and in order to establish some degree of focus and scope with respect to the research topic, it was decided that only Anglophones and Francophones would be compared at

this time. It is, however, recommended that the remaining demographic variables be examined and compared in subsequent research on the CFAIQ.

Future Directions

CFAMS was described in past research as being a comprehensive, dynamic information gathering system that permits the examination of both long- and short-term trends in voluntary attrition. Results from this research project and information gained from the literature suggest that this perhaps too strong a statement with respect to its utility. In particular, as previously discussed in the limitations section, the CFAIQ does not appear to be very dynamic at all. Instead, the results of this research have shown that it is not able to identify either long- or short-term (new) trends well. The CFAIQ is also unresponsive to the needs of those personnel who are leaving the organization for voluntary reasons as the information is attained after their departure. Therefore, future research needs to explore ways of increasing the CFAIQ's ability to monitor, detect and respond to new and potentially problematic personnel attrition trends.

In addition, only approximately fifty percent of all voluntary leavers complete the CFAIQ on their departure from the CF. This is a poor response rate and indicates that there is a lot of missing data. Reasons for the poor response rate appear to be related to a sense of apathy with the "military personnel system" and "personnel policy-makers", completion of the questionnaire being on a voluntary basis, and poor timing with respect to when the questionnaire is administered. It is, therefore, recommended that these issues be examined further. By removing potential barriers and finding ways to motivate personnel to complete the CFAIQ, a more complete and accurate picture of voluntary attrition in the CF might be gained.

Moreover, the CFAIQ fails to assess behavioural commitment as a central variable that predicts staying [defined by such prominent theorists as Salancik (1977a, b),

O'Reilly and Caldwell (1981), and Kline and Peters (1991)]. It is recommended that the notion of entrance versus exit questionnaires and behavioural commitment be explored in more depth. More specifically, it is suggested that any future research conducted on the CFAIQ should incorporate behavioural commitment theory and the idea of entrance measures into the existing CF model of voluntary attrition.

If the CFAIQ is to be used in the future in its current format, it is recommended that the additional reasons for leaving in Section 1 of the CFAIQ be monitored either periodically or on an on-going basis in order to ensure the timely detection of potentially new and problematic personnel issues. As trends are identified, the importance of such issues may be further explored by conducting focus groups. This may or may not give rise to the revamping of the items in Section 1. These changes should not, however, be implemented in an unscientific or random manner and would therefore require that items be evaluated from both a reliability and validity perspective.

Hence, the CFAIQ might have to be periodically evaluated (psychometrically) as new trends are detected and/or as other trends become less important. This research project was the first such attempt to systematically validate and refine the reasons for leaving section of the questionnaire. In an attempt to specifically address CFPARU's concerns about issues of content/construct validity and scale reliability, several additional recommendations are offered with respect to the future refinement of Section 1 of the CFAIQ.

As previously discussed, quantitative (item analysis) and qualitative (focus groups) analyses have demonstrated that the majority (anywhere from 75% to over 90%) of personnel who have left, or are in the process of leaving, the CF view items 1, 21, 23, 32, 34, 39, 40, and 42 to be of little or no importance to the leave decision process. Due to their poor discriminatory power, content validity, and internal inconsistency, it is recommended that they be removed permanently from Section 1 of

the questionnaire. Thus, the scale will maintain its high level of internal reliability while simultaneously improving its content and construct validity.

It is also recommended that additional reasons for leaving the CF be solicited in the future and included in the questionnaire. Items should be generated and validated in a manner which is consistent with the guidelines offered earlier in this research project by Spector (1992) and Coolican (1990). Follow-up research in support of the results obtained in the focus groups and item analysis conducted in stage 1 should consist of conducting focus groups at several CF bases (both Anglophone and Francophone) across Canada. This will confirm whether or not additional items need to be incorporated into the CFAIQ. It is, therefore, recommended that these focus groups be conducted with personnel who are currently involved in the release process. Furthermore, these focus groups should be conducted at Navy, Army, and Air Force bases in order to get a representative cross-sample of Anglophones/Francophones and males/females from the three elements and a variety of support occupations.

If new items are generated and incorporated into Section 1 of the CFAIQ, it is further recommended that the questionnaire be re-evaluated with respect to the validity of its content, reliability of the scale and overall comprehensiveness of its items. In order to ensure that adequate representation by CF element, language, gender, and rank, Lyon (1987) recommended that a sample of approximately 750 completed questionnaires would be required for a reliable evaluation. The general guideline of ten respondents per item could, however, be used for determining the appropriate sample size. Only those members who are in the process of leaving the CF on a voluntary basis should be included in this analysis.

It has also been shown that Section 1 of the CFAIQ can not presently address the specific issues (reasons for leaving) that are associated with compulsory or FRP turnover. Two solutions are offered for this current dilemma. The first and most simple solution would be to not administer this questionnaire to personnel leaving the

CF for reasons other than a 4A, 4B, or 4C (voluntary) release. The present CFAIQ data base could then be sorted and any compulsory or FRP inputs removed.

As previously noted, compulsory releases do not meet Lissak and Mendes' (1982) definition of voluntary attrition and, therefore, their inclusion and analysis alongside voluntary attrition responses will inevitably confound results. With respect to those personnel who leave the CF voluntarily or involuntarily under the FRP, it is evident that the reasons or motives for leaving the CF are in most cases unique from those personnel leaving the CF for voluntary reasons (e.g., voluntary leavers under the FRP are offered large financial and benefits packages in order to leave the CF). As a result, the FRP respondents should also be excluded from the voluntary attrition data base.

The second solution would be to develop an appropriate sub-section or include items within Section 1 of the CFAIQ which specifically address the reasons for leaving for those people who are released either for compulsory reasons or under the FRP. These items could be developed and implemented through the same techniques and methods which have been previously described earlier in this research project. This would enable data gathered from these two unique sources to be included in the current CFAIQ data base. The data base could then be analyzed accordingly.

Conclusion

The literature on organizational attrition clearly shows that the voluntary attrition process is highly complex with a multitude of influencing factors. CFPARU was tasked by NDHQ to develop a theoretically driven conceptual model of attrition in the CF and a means by which personnel attrition could be monitored. The CFAIQ was in turn developed, based in part on Mobley et al's. (1979) Expanded Turnover Process Model, and its implementation in 1987 subsequently gave rise to the birth of the CFAMS. Although the CFAIQ was deemed in the past to be an extremely useful means by which to monitor the reasons for personnel voluntarily leaving the CF, it has

been shown that this was perhaps an over-statement. Results from this research project showed that there are several limitations associated with the CFAIQ. First, the CFAIQ is not able to detect either long- or short-term (new) trends in voluntary attrition very well. Second, there is a poor response rate to the questionnaire and as a result the CF may not be getting a clear and accurate picture of personnel turnover. Last, the CFAIQ does not assess behavioural commitment as a central variable that predicts staying.

If the CFAIQ is allowed to remain in use in its present format in the future, it is recommended that the additional reasons for leaving be monitored either periodically or on an on-going basis in order to detect new and potentially problematic attrition trends. Once new trends are identified, it is important that the questionnaire be re-evaluated systematically with respect to its validity and reliability and refinements be made accordingly. This research project has attempted to do this by specifically addressing issues of construct and content validity, and internal-consistency of items making up the reasons for leaving scale. In doing so, the psychometric properties of Section 1 of the CFAIQ have been examined from a practical perspective and several recommendations have been made which will increase its utility and effectiveness. With further research, theoretical and practical validation, and refinement, Section 1 of the CFAIQ will ultimately be improved and, as a result, yield a better picture of the reasons for personnel voluntarily leaving the CF.

References

Anastasi. (1982). Psychological Testing. (Ch. 5 - Reliability pp. 102-130, Ch. 6 - Validity: Basic Concepts pp. 131-155).

Binning, J.F., & Barrett, G.V. (1989). Validity of personnel decisions: A conceptual analysis of the inferential and evidential bases. Journal of Applied Psychology, Vol.74, No.3, 478-494.

Carmines, E.G., & Zeller, R.A. (1979). Reliability and validity assessment. Sage University Paper series on Quantitative Applications in the Social Sciences, 07-017. Beverly Hills and London: Sage Pubns.

Cortina, J.M. (1993). What is coefficient alpha? An examination of theory and applications. Journal of Applied Psychology, Vol.78, No.1, 98-104.

Coolican, H. (1990). Research Methods and Statistics in Psychology. Toronto: Hodder & Stoughton.

Director Personnel Information Systems 2-3-2, Department of National Defence. (1996). Releases by reasons - officers and non-commissioned officers 1979-1984 and 1990-1995.

Farley, K.M.J. (1994). Voluntary attrition among Francophone and Anglophone sailors in the hard-sea occupations (Technical Note 9/94). Willowdale, Ontario: Canadian Forces Personnel Applied Research Unit.

Fournier, B.A., & Keates, W.E. (1975). Why do they leave? (Report 75-4). Willowdale, Ontario: Canadian Forces Personnel Applied Research Unit.

Guion, R.M. (1983). The ambiguity of validity: The growth of my discontent. Presidential Address delivered to the Division of Evaluation and measurement at the Annual Convention of the American Psychological Association, Anaheim, California.

Hamel, C. (1978). The social correlates of survival in Other Ranks recruit training (Report 78-1). Toronto, Ontario: Canadian Forces Personnel Applied Research Unit.

Kim, J., & Mueller, C.W. (1978). Introduction to factor analysis: What it is and how to do it. Sage University Paper Series on Quantitative Applications in the Social Sciences, 07-013. Beverly Hills and London: Sage Pubns.

Kim, J., & Mueller, C.W. (1978). Factor analysis: Statistical methods and practical issues. Sage University Paper Series on Quantitative Applications in the Social Sciences, 07-014. Beverly Hills and London: Sage Pubns.

Kline, C.J., & Peters, L.H. (1991). Behavioral commitment and tenure of new employees: A replication and extension. Academy of Management Journal, 34(1), 194-204.

Koslowsky, M. (1987). Antecedents and consequences of turnover: An integrated systems approach. Genetic, Social, and General Psychology Monographs, 113(3), p.269-292.

Landy, F.J. (1986). Stamp collecting versus science: Validation as hypothesis testing. American Psychologist, Vol.41, No.11, 1183-1192.

Leavitt, F. (1991). Research methods for behavioral scientists. USA: Wm.C. Brown Publishers.

Lissak, R.I., & Mendes, H.C. (1982). Attrition/retention project: A progress report. (Technical Note 9/82). Willowdale, Ontario: Canadian Forces Personnel Applied Research Unit.

Lyon, C.D.F. (1986). Proposal for an attrition information system: What do leavers say? (Technical Note 6/86). Willowdale, Ontario: Canadian Forces Personnel Applied Research Unit.

Lyon, C.D.F. (1987) The CF Attrition Information Questionnaire: Conceptual development and evaluation plan (Working Note, 87-1). Willowdale, Ontario: Canadian Forces Personnel Applied Research Unit.

O'Reilly, C.A., & Caldwell, D.F. (1981). The commitment and job tenures of new employees: Some evidence of post-decisional justification. Administrative Science Quarterly, 26, 597-615.

Mallett, J.R. (1974). ROTP Officer attrition study (Report 74-8). Downsview, Ontario: Canadian Forces Personnel Applied Research Unit.

Maxwell, S.E., & Delaney, H.D. (1990). Designing experiments and analyzing data: A model comparison perspective. Pacific grove, California: Brooks/Cole Publishing Company.

Memorandum 5762-5-5 (5 June 1995). Use of CFAIO data base for thesis requirement. Captain Farley: Canadian Forces Personnel Applied Research Unit.

Mendes, H.C., & Lyon, C.D.F. (1984). Canadian Forces attrition/retention study (Working Paper 84-8). Willowdale, Ontario: Canadian Forces Personnel Applied Research Unit.

Michaels, C.E., & Spector, P.E. (1982). Causes of employee turnover: A test of the Mobley, Griffeth, Hand, and Meglino model. Journal of Applied Psychology, 67(1), 53-59.

Parker, R.O., & Lyon, C.D.F. (1988). Preliminary evaluation of the Canadian Forces Attrition Information Questionnaire (CFAIO-P) (Technical Note 20/88). Willowdale, Ontario: Canadian Forces Personnel Applied Research Unit.

Parker, R.O. (1992). Canadian Forces Attrition Monitoring System: Implementation and potential (Working Paper 92-1). Willowdale, Ontario: Canadian Forces Personnel Applied Research Unit.

Pinch, F.C. (1975). Economic, social, and cultural influences on Military participation in two Canadian provinces (Report 75-6). Downsview, Ontario: Canadian Forces Personnel Applied Research Unit.

Sinaiko, H.W., Schefflen, K.C., Anderson, J., Dodd, B., Godwin, A., James, J., & Pinch, F.C. (1980). Attrition in the Armed Services of Canada, the U.K., and the U.S. (TTCP(U) Working Paper).

Spector, P.E. (1992). Summated rating scale construction. Sage University Paper Series on Quantitative Applications in the Social Sciences, 13-001. Beverly Hills and London: Sage Pubns.

Steers, R.M., & Mowday, R.T. (1979). Employee turnover and post-decision accommodation process. (Technical Report No.22). Eugene, Oregon: University of Oregon.

Warner, J.T., & Solon, G. (1991). First-term attrition and re-enlistment in the U.S. Army. In C.L. Gilroy, D.K. Horne, D.A. Smith (Eds.), Military compensation and personnel retention: Models and evidence (pp. 243-277). Alexandria, VA, US: US Army Research Institute for the Behavioral & Social Sciences.

Appendix A

SECTION 1

Reasons for Leaving

We are interested in your reasons for leaving. The response areas for this section are located at the top of Page 1 on the Answer sheet, and are labeled "Section 1 - Part A" and "Section 1 - Part B". There are two steps to answering this section.

PART A DIRECTIONS:

Read the first reason for leaving statement given below:

Decide how important this reason is in your decision to leave the CF by selecting the letter from the levels of importance scale that most nearly matches how important you believe it was in your decision to leave. Show your responses by finding the corresponding question number in the 'Section 1 - Part A' area of the Answer Sheet, and blackening completely the letter representing the level of importance.

Levels of Importance Scale

A	B	C	D	E
Extremely Important	Very Important	Important	Of Some Importance	Not True or of No Importance

1. I have had too many postings.
2. My CF career conflicts with my spouse's career.
3. I want more challenging work.
4. I am not being adequately compensated for overtime.
5. My most recent military posting does not make good use of my knowledge and training.
6. Future postings in my MOC are unattractive because of the nature of the work.
7. I have difficulty living on what I earn in the CF.
8. I was offered a civilian job with more responsibilities.
9. Postings are disruptive to my children's education.
10. I do not get credit for a job well done.
11. I have been discriminated against.
12. I was offered a civilian job with better job security.
13. I want to stay at home and raise my family.
14. I was attracted to a civilian job with more fringe benefits.
15. My work performance is not evaluated fairly.
16. Younger service members get promoted faster than I do.
17. I cannot get the MOC I want.

Reasons for Leaving Continued...

18. My hours of work are too long.
19. My MOC is, or is becoming, obsolete.
20. I am spending too much time away from home.
21. I have been offered a civilian job with less responsibility.
22. I am under too much stress.
23. I don't expect to get an offer of re-engagement.
24. I have not been provided with the tools or equipment I need to do my job properly.
25. I don't like my physical work conditions.
26. My immediate supervisor is not competent.
27. I am not in a MOC that is useful for future civilian employment.
28. My supervisor lacks interest in his/her subordinates.
29. I am unlikely to get promoted.
30. I want to increase my family stability by establishing roots in some community.
31. I have been offered a job that pays more.
32. I do not get along with my co-workers.
33. Likely future postings are unattractive because of their location.
34. I want to avoid compulsory release.
35. I cannot get the postings that I asked for.
36. I am going back to school.
37. I am taking full advantage of my pension and potential civilian salary.
38. My spouse is unwilling to move to a new posting location.
39. I do not want to work in a mixed gender unit.
40. I do not want to work in an operational role.
41. I am leaving because of compassionate circumstances.
42. My career is limited because of my medical category.
43. I am going into business for myself.
44. I do not want to be separated from my family.
45. I am not getting equal pay for equal work.
46. My role in the military is undervalued/unappreciated in Canadian society.

Appendix BATTRITION INFORMATION QUESTIONNAIRE COMMENT SHEET

Directions: With respect to this questionnaire, please comment on the following:

1. Reasons for leaving

- a. After answering this section, was it clear to you why the survey was developed?

0 Yes 0 No (Explain)

- b. Were there any parts of the reasons for leaving section that were poorly worded, unclear or confusing?

0 Yes 0 No (Explain)

- c. Are there any other factors you consider would be reasons for leaving the CF?

0 Yes (List) 0 No

Note: Taken from Lyon (1987).