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The Impact of the Operational Environment on the Commitment Profiles of Canadian Armed Forces Soldiers

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A thesis submitted in partial fulfillment of the requirements for the degree in Master of Science

THE IMPACT OF THE OPERATIONAL ENVIRONMENT ON THE COMMITMENT PROFILES OF CANADIAN ARMED FORCES SOLDIERS

(Thesis format: Monograph)

by

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Abstract

The aim of this study was to use latent profile analysis to determine whether commitment profiles found in previous studies could be replicated in a deployed Canadian military sample. This study examined antecedents contributing to the development of the profiles, outcomes associated with profile membership and stability of profiles solutions. A total of 4254 (pre-deployment) and 2365 (post-deployment) military personnel completed surveys related to affective (AC), normative (NC) and continuance (CC) organizational commitment, unit climate, operational preparedness, psychological distress, and intention to stay. Four commitment profiles (e.g., high AC- dominant, low CC/NC-dominant, Moderately and Weakly committed) emerged across both samples. Findings suggest that military personnel who experience more favourable commitment profiles (e.g., high AC-dominant) report better work environments, greater psychological well-being, and staying intentions. Additionally, stability of the profiles across samples was examined by systematically testing the invariance of profile solutions across both samples. Results suggest that despite being visually similar, the profile solutions themselves differed across the two samples. The importance of commitment profile research and its implications are discussed.

Keywords: organizational commitment, latent profile analysis, Canadian Forces, commitment profiles, turnover, psychological distress, unit climate, operational preparedness, invariance testing.

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Introduction

Over the years, research focused on commitment in the workplace has continued to flourish as individual commitment to their organization continues to have important implications for organizations and their employees. It is recognized that, within the same organizational setting, individuals can experience commitment differently, and that these differences can have implications for their behaviour and well-being. In 1990, Allen and Meyer proposed the Three Component Model of Commitment (TCM) and maintained that commitments can be characterized by three distinct psychological states (i.e., mindsets). These mindsets were labeled: affective commitment (AC), normative commitment (NC), and continuance commitment (CC). AC is described as the emotional or affective attachment that an employee feels towards their organizations. Employees high in AC identify with their organization (e.g., mission, values, goals), possess a strong sense of belonging, and take pleasure in their affiliation with the organization (Allen & Meyer, 1990). NC is associated with the sense of obligation that an individual may feel towards their organization. As described by Meyer and Allen (1991), NC is rooted in an individual's internalization of normative pressures where they believe staying with their employer is the right thing to do, regardless of their needs. NC can also result when individuals feel indebted to an organization for having invested considerable resources in their training (e.g., specialized courses, costly training), or for having provided substantial benefits (e.g., parental allowances, funded education). In contrast, CC is associated with the potential cost of terminating one's employment with an organization. The costs can be work- (e.g., senior position, authority) or nonwork-related (e.g., benefits, friendships).

The employee remains with the organization because the loss they would experience by leaving is greater than the benefit they believe they might gain from the alternative new role.

Most research conducted on the TCM has investigated the three components (i.e., AC, NC, and CC) independently (e.g. Pisnar-Sweeney, 1997; Taing, Granger, Groff, Jackson, & Johnson, 2011; Vandenberghe, Benetein, & Stinglhamber, 2004). The idea that the three mindsets could combine in different ways to reflect commitment profiles was originally discussed by Allen and Meyer (1990) and Meyer and Allen (1991,1997). However, it was Meyer and Herscovitch (2001) who offered a series of propositions suggesting how these profiles develop and their potential impact on the behaviour of employees. Furthermore, a number of person-centered studies have been conducted recently to test these propositions (e.g., DelloRusso, Vecchione, & Borgogni, 2013; Meyer, Stanley, & Vandenberg, 2013; Morin, Meyer, McInerney, Marsh, & Ganotice, 2015; Morin, Morizot, Boudrias, & Madore, 2011; Somers, 2010; Stanley, Vandenberghe, & Vandenberg, 2013; Tsoumbris, & Xenikou, 2010; Wasti, 2006). As I will demonstrate, collectively their findings provide strong support for the complex relationship between the three components of commitment, adding an extra dimension of knowledge to an already important construct within the workplace literature.

Organizational commitment research is important to the military because it has been demonstrated that soldiers, like their civilian counterparts, experience different forms of commitment, which can have numerous implications (e.g. performance, retention) for military forces and its soldiers (e.g., Godlewski & Kline, 2004; Karrasch,

2003; Langkamer & Ervin, 2008; O'Shea, Goodwin, Driskell, Salas, & Ardison, 2009). In addition to identifying various antecedents to organizational commitment, research centered on organizational commitment in military forces has established that various components of commitments can predict soldier well-being, performance, and staying intentions (Allen, 2003). Although the military commitment literature has greatly evolved over time, most of the research has focused on the individual commitment mindsets, with the exception of two studies that have looked at commitment profiles (i.e., Gade, Tiggle, & Schumm, 2003; Meyer, Kam, Goldenberg, & Bremner, 2013). Like most profile research, these studies do not address the potential implications of military experiences, particularly deployment to combat zones, a highly stressful and ambiguous environment that is known to potentially impact the psychological well-being of soldiers (Blanc, Zamorski, Ivey, & McCuaig Edge, 2014). Furthermore, only one study to date has been conducted to examine the stability of commitment profiles over time under conditions of change (Kam, Morin, Meyer, & Topolnytsky, 2013). They found evidence that commitment profiles were stable over an eight-month period during a major organizational change. Given that soldiers, especially in a deployed combat zone, are subjected to continuous changes that often introduce extreme situations, it begs the question as to whether commitment profiles of soldiers deployed to an operational setting would demonstrate similar stability as in the Kam et al. (2013) study. Thus far, there has been no research conducted investigating the stability of commitment profiles of Canadian Armed Forces (CAF) soldiers or any other military in combat zones.

The purpose of this study was to investigate the nature, stability, development and consequences of commitment profiles among CAF personnel during conditions of deployment. Using data obtained from soldiers deployed overseas to military operations in Afghanistan between 2008 and 2010, I sought to determine whether distinct profiles could be identified in both the pre- and post-deployment samples and, if so, how the structure of these profiles would compare to previous studies (e.g., Kam et al., 2013; Meyer et al., 2013). I examined whether the commitment profiles that emerge were stable across samples despite exposure to high-stress military operational environment. Additionally, I attempted to establish whether pre- deployment profile membership could be predicted from conditions (e.g., operational preparedness, unit cohesion) concurrently measured. Lastly, I investigated whether pre- and post-deployment profiles relate to outcome measures of distress and career intentions.

The current study makes several major contributions. First, it has been well established in the literature that military operational deployments can impact the psychological well-being of soldiers (e.g., Blanc et al., 2014). This study is the first to examine the relationship between commitment profiles utilizing all three commitment mindsets and well-being under high-stress conditions. These findings are not only of interest to military organizations but can provide insight for similar high-stress occupations (e.g., police, firefighters, emergency medical services). The findings of this study may assist these types of organizations to implement various research programs and/or interventions that could positively impact the commitment, well-being and retention of their employees. Second, this study contributes to the current literature by

examining the stability of the profile solutions across two different samples. Using a newly developed framework proposed by Meyer and Morin (2015), I investigated whether the profiles that emerged from the pre-deployment sample were similar to those obtained in the post-deployment samples by testing the invariance of the profile solutions across samples. Given that the samples were obtained at two different yet significant time-points (i.e., pre- and post-deployment), and the extreme conditions experienced by soldiers during that timeframe, this study provides a strong test for the stability of commitment profiles. This is one of few studies to apply this framework, a development that Meyer and Morin (2015) argue is key to the future of commitment research. Lastly, this study advances the research focused on commitment profiles. There currently exist a limited number of studies that have investigated the complex relationship between the three commitment mindsets by way of commitment profiles. By contributing to this limited area, this study serves to expand our knowledge about the commonality of various commitment profiles and their potential generalizability across various settings

Organizational Commitment

Researchers have long acknowledged that organizational commitment is related to various outcomes that impact individuals and their organization. Since the establishment of the TCM over two decades ago, research has shown us that determining the nature of an employee's commitment is key to implement effective organizational strategies. Countless studies have been published supporting Allen and Meyer's (1991) original propositions that the three components of the TCM develop as a result of different antecedents and impact various outcomes very differently. For example, research has

demonstrated that AC and NC are positively associated with organizational citizenship behaviours (OCBs), performance, employee well-being, and job satisfaction. Whereas, when considered individually, CC is most often positively related to, absenteeism, turnover, and lateness (e.g., Godlewski, & Kline, 2012; Karrasch, 2003; Mathieu, 1991; Meyer, Stanley, Herscovitch & Topolnytsky, 2002; Orag, 2006; O'Shea, Goodwin, Driskell, Salas, & Ardison, 2009).

Following Meyer and Allen (1991, 1997), Meyer and Herscovitch (2001) reinforced the notion that the three components of the commitment should be researched as a profile rather than as individual components. They proposed several propositions to support their argument and demonstrated how they believed the mindsets would interact. They argued that findings based on a single component are of limited applicability to organizational settings and advocated the importance of taking into consideration the complexity and multidimensionality of the entire construct.

A Profile Approach to the Study of Commitment

The majority of the research looking at commitment has been conducted using the variable-centered approach (see a review by Meyer, Stanley, & Vandenberg, 2013). By focusing on the relationship between variables, the variable-centered approach accounts for variance in one variable and generalizes these findings to an entire sample and its population. This method allowed researchers to demonstrate the important contribution that individual mindsets of commitment had on organizational outcomes in the workplace. However, as scientific questions have grown increasingly more complex, researchers have begun to make greater use of the person-centered approach. The person-

centered approach is a complementary method to the variable-centered approach in that it allows researchers to identify how a system of variables functions within an individual. The person-centered approach can also be used to identify unobserved sub-groups of individuals who share similarities across these systems. As a result, defined group membership can, in turn, be used as a variable to examine its relations to other variables of interest, including antecedents and/or potential outcomes.

The person-variable approach is the ideal method when studying the full TCM, given that it allows researchers to investigate commitment by taking into account the contextual effects of the three commitment mindsets, information that is absent when they are considered individually. By identifying how the three mindsets combine in various ways, meaningful differences between sub-groups (i.e., profiles) can be determined. These subgroups can then be used to further investigate how overall commitment is experienced and how it relates to other variables of interest (e.g., retention, performance, well-being). This newly gained perspective on commitment, specifically the contextual influences of the three mindsets, has expanded knowledge and understanding of organizational commitment.

In 2005, Wasti conducted one of the first studies investigating profiles involving all three components of commitment. Using a cluster analysis approach to identify commitment profiles, Wasti (2005) examined the implications of commitment profiles for both organizational and employee outcomes. She found that profiles characterized by low levels of all three components (i.e., uncommitted), or by high CC with low AC and NC (i.e., CC-dominant), were positively associated work withdrawal and job stress,

making them the least desirable commitment profiles. In contrast, the highly committed profile (i.e., high scores of all three components), in addition to the AC/NC-dominant and AC-dominant profiles, were assessed as the more desirable profiles. Not only were these profiles negatively related to work withdrawal and positively related to loyal boosterism, but employees in these profiles also reported significantly weaker turnover intention than the least desirable profiles ($p < .001$).

Using a median split to create eight profile groups in accordance with the theory proposed by Meyer and Herscovitch (2001), Gellatly, Meyer and Luchak (2006) investigated the interactive effects of the three components on intention to stay and OCBs. They discovered that the way in which the individual components related to staying intention and OCBs depended on the relative strength of the other components within a profile. For example, they found that various profiles (e.g., high AC with low NC and CC, high AC, NC, and CC) were related to higher staying intentions and the probability of an employee engaging in OCBs in comparison to those who experienced high CC with low AC and NC. Unexpectedly, they discovered that employees who experienced high AC and CC reported similar OCBs to employees with purely affective profiles (i.e., high AC with low CC, NC). As a result of these findings, they argued that mindsets may have a contextual influences on each other and impact how commitment is experienced. In the case of employees who experience high AC and CC, it may be that they view the cost of leaving their organization differently (e.g., loss of positive workplace) than those with only a high CC who may only fear tangible losses (e.g., money, status). Furthermore, Gellatly et al. (2006) argued that the context effect may

also explain several other unexpected findings especially those involving the NC mindset. They discovered that high NC when combined with high AC is positively related to staying intention and OBCs whereas, when combined with high CC in the absence of high AC, NC is negatively related to OCBs and weakly related to staying intention. Their findings suggest that the NC mindset is experienced differently as a function of the other mindsets.

Building upon the findings of Gellatly and his colleagues, Somers (2010) investigated the implications of commitment profile on outcome variables such as turnover intentions. Consistent with the previous studies, Somers (2010) found that the combined influence of commitment components was vital in understanding employee retention. For example, employees with the weakest intention to stay were those who exhibited the least desirable commitment profiles (i.e., uncommitted or CC-dominant profiles). Whereas, fully committed (i.e., high levels of AC, NC, CC) employees, or those who experience AC/NC-dominant profiles reported the highest intentions to stay with their current organization.

Subsequently, Meyer, Stanley and Parfyonova (2012) conducted a study to investigate the relationship between commitment profiles and the motivational states identified in self-determination theory (SDT). SDT suggests that individuals are motivated by a need to fulfill their three basic psychological needs: *autonomy,* described as one's sense of volition over their actions, choices and future; *competency*, the inclination to impact one's environment and to achieve valued outcomes; and *relatedness*, one's desire for establishing meaningful and well balanced relationship with others (Deci

& Ryan, 2000). According to Deci and Ryan (2000), those who are afforded opportunities to engage in activities that result in satisfaction of these needs are more likely to develop self-determined motivation and higher levels of functioning because their growth and development have been stimulated. Consequently, Meyer et al. (2012) suspected that the relationship between needs satisfaction and the various profile groups should allow researchers to successfully predict behavioral and well-being outcomes across groups. In particular, they suggest that individuals who possess high AC/NC or fully committed profiles would report higher levels of needs satisfaction than those with CC-dominated or CC/NC profiles.

Using latent profile analysis (LPA), Meyer et al. (2012) identified six commitment profile groups: uncommitted, CC-dominant, moderately committed, low-moderately committed, fully committed, and AC/NC-dominant profiles. Interestingly, of the profiles that emerged, each profile varied in their level of needs satisfaction, autonomous regulation, affect, engagement, OCBs, and well-being (Meyer et al., 2012). Furthermore, they discovered that profiles groups exhibiting higher levels of CC varied in their degree of motivational states, job performance and well-being as a function of whether or not it was coupled with high or low AC and NC. For example, when all three components were high, groups reported higher levels of autonomous regulations, needs satisfaction, OCBs, and well-being. In contrast, those who experienced CC-dominant profiles were less likely to engage OCBs and experienced above-average health complaints. As pointed out by Meyer et al. (2012), consistent with previous research, high levels of CC is only a problem when AC is weak. They argue that when employees are fully committed to

their organization because they believe in the organization (AC), they are happier, healthier, more satisfied, making them more willing to go above and beyond for the well-being of the organizations and their coworkers.

There is substantial evidence to support the ongoing research focused on commitment profiles using the three mindsets as set out in TCM. Through the use of advanced statistical methods, time and again common profiles emerge (for a summary of commitment profiles studies and the most common profiles found see Meyer and Morin, 2015). These profiles have not only produced similar relationships with various outcomes (e.g., turnover, job performance), but they have enhanced our understanding of organizational commitment and the contextual impact that the three mindsets have on one another. Consequently, new propositions surrounding organizational commitment are evolving in relation to well-being, turnover, performance and satisfaction in the workplace.

Temporal Stability of Commitment Profile

Understanding commitment profiles and the factors that influence them is key to designing programs and interventions aimed at creating an optimum work environment. However, do commitment profiles within a sample persist over time? Do commitment profiles endure, despite hardships and stress faced by employees? These are precisely the questions highlighted by Kam et al. (2013). They reasoned that if researchers are to recommend and promote various profiles because of their positive outcomes, then they must ensure that these profiles are relatively stable and persist over time. Otherwise, any interventions and management strategies are likely to be ineffective.

Specifically, Kam et al. (2013) looked at whether commitment profiles under organizational change remained stable over time. Additionally, they investigated the link between commitment profiles and perceived management trustworthiness. Based on theory, they hypothesized that employees with highly committed profiles would be more likely to perceive management as trustworthy. Over the course of their eight-month study, their results demonstrated that commitment profiles remained stable even under the stress of organizational change. Furthermore, they found that the most desirable commitment profiles from an outcomes perspective (e.g., high AC/NC/CC, AC/NC) were significantly related to high levels of perceived management trustworthiness ($p < 0.01$). Interestingly, individual commitment profiles were more strongly related to trust in top-level management versus their immediate supervisor. They reasoned that this was likely a result of top management being held responsible for organizational-level events.

They acknowledged that the lack of change in organizational commitment profiles within their study may have been the result of their change not being strong or extreme enough. In fact, the authors noted that, although the organizational change was extensive, it may have been perceived by employees as necessary and as having benefits for themselves as well as the organization. Thus, the impact on the nature of their commitment may have been minimal. It remains to be determined whether the same level of stability would maintain under more severe conditions that threaten job security or employees' personal well-being. Like many other articles, Kam et al. (2013) called for more research focused on commitment profiles, stability, stress, and managerial trustworthiness to support their findings.

In closing, Kam et al. (2013) stressed that one must not interpret the temporal stability of commitment profiles as meaning they are resistant to managerial interventions. In fact, the temporal stability of commitment profiles is what allows practitioners and researchers to assess the situation and arrive at properly devised and effective interventions and solutions to organizational issues. Moreover, understanding how the workplace impacts employee commitment profiles, regardless of their predisposition, is important in assisting practitioners in shaping or changing employee commitment. Given the dynamic and dangerous environment of military operational deployments, it seemed reasonable to question whether commitment profiles of military soldiers in combat zones demonstrated similar stability.

Profile Studies in the Military

To date, only two studies have investigated the commitment profiles of military soldiers. First, in a special issue of Military Psychology, Gade et al. (2003) published a study examining the profile structure of AC and CC and their predictive outcomes within the military setting. Like Gellatly et al. (2006), they found that when considered together, AC and CC had an additive effect in contrast to what had been previously been theorized by Meyer and Herscovitch (2001). More importantly, Gade et al. (2003) found that, when considering commitment as a multidimensional construct, they were better able to predict important behavioral outcomes such as performance of military duties, retention, and soldier well-being. The work conducted by Gade and his colleagues (2003) provided evidence that supported the call for additional research focused on commitment profiles in military settings. The largest criticism of their work is that they excluded the NC

mindset from their commitment profile study due to high correlations between AC and NC. Given that more recent work has demonstrated the important contextual impact that NC has on the way AC and CC are experienced, the exclusion of NC in a commitment profile research limits the generalizability of their findings.

In February 2010, CAF researchers initiated the administration of the CAF retention survey. This survey was designed to obtain information from personnel in distressed occupations (i.e. occupations that have less than 80% of the mandated number of trained soldiers needed to be considered at full strength) with the aim of introducing effective retention strategies. Using the data collected from the CAF retention survey, Meyer et al. (2013) conducted the first commitment profiles analyses within a military setting using the full TCM. Their study had several purposes. First they investigated whether established commitment profiles would emerge within a military environment. Second, they studied the potential outcomes associated with various profiles (i.e., anxiety and depression, and staying intention). Third, they examined conditions that might contribute to the development of commitment profiles (i.e., perceived organizational support, satisfaction with unit and senior leadership, organizational justice).

Using latent profile analysis, they found six meaningful profiles in their military sample: uncommitted, CC-dominant, all low-mid, all mid, AC-dominant, and AC/NC-dominant profiles. Intention to stay (i.e., until completion of their terms of service or retirement) was lowest for the uncommitted profile and highest for those in the AC/NC-dominant profile. Furthermore, using the Kessler Psychological Distressed Scale (K-10; Kessler, Andrews, Colpe, Hiripi, Mroczek, Normand, …Zaslavsky, 2002), Meyer et al.

(2013) investigated whether commitment profiles would be sensitive to self-reported levels of anxiety and depression. The K-10 is a valid and psychometrically robust measure of psychological distress that consistently demonstrates high reliability in diagnostic capabilities (e.g., Andrews & Slate; 2001; Furukawa, Kessler, Slate, & Andrews, 2003; Kessler et al., 2002). It is one of the most commonly used measures for clinical screening mental health, and psychiatric epidemiological research. With the use of the K-10, Meyer et al. (2013) discovered that soldiers who displayed an uncommitted or CC-dominant profile reported higher levels of anxiety and depression. Furthermore, as the favourability of the profiles increased, lower levels of anxiety and depression were reported. These findings suggest that those who experience more favourable commitment profiles also tend to experience less anxiety and depression.

Surprisingly, as noted by Meyer et al. (2013), this military population did not reveal a fully committed profile or an AC/CC-dominant (i.e., invested) or CC/NC-dominant (i.e., indebted) profile like previous research. In their study they suggested that the reasons behind these unusual findings, could be the result of the military setting that fosters not only a desire to remain, but potentially based on the profile, a moral imperative to do so. As discussed by Meyer et al. (2013), the combined AC and NC components might have a synergistic effect. Although it remains to be investigated, they proposed that AC (i.e., the desire to do the right thing) when combined with NC (i.e., a sense of obligation) may cultivate a sense of moral duty, a notion quite fitting within the military culture. Military duty can be highly demanding, soldiers are frequently asked to perform duties that are unpleasant and/or at times dangerous. Meyer et al. (2013)

suggested that when faced with these difficult military tasks, if AC is not accompanied by high NC and a moral imperative mindset, soldiers may lose the desire (AC) to remain with the organization.

Numerous aspects of the Meyer et al. (2013) study are especially noteworthy. First, this study used latent profile analysis (LPA) to identify latent commitment profiles, a method only recently used in a few other studies. According to Meyer et al. (2013), LPA is considered superior to median-split and cluster analyses for the uncovering of naturally occurring profiles because of its use of a latent categorical variable to identify groups of individual with similar scores on measured variables. Second, as indicated by Meyer et al. (2013), this study was one of very few studies that investigated conditions that contributed to the development of commitment profiles. Although very important, contributing factors have seldom been considered in the commitment profile literature and yet they are essential when trying to understand how and why various profiles form. By understanding predictor variables, practitioners and organizations are better able to generate effective strategies to foster the most favourable commitment profile for their unique needs. Lastly, despite being the only study of its kind, given the large sample size, they were able to demonstrate stable commitment profile structures across two subsamples. As a result, Meyer et al. (2013) were able to publish these findings with a high degree of confidence in their generalizability. This study is the model for the present research.

Present Study

To reiterate, the primary purpose of this study was to investigate the nature, stability, development and consequences of commitment profiles among CAF personnel during conditions of deployment. More specifically, the first objective was to determine whether distinct profiles could be identified in both the pre- and post-deployment samples and if so, whether the structure of these profiles would compare to previous research (Kam et al., 2013; Meyer et al., 2013; Somers, 2010; Wasti, 2005). I expected the military sample to be heterogeneous with regards to their organizational mindsets and that the commitment profiles that would emerge would be consistent with previous research.

Hypothesis 1: LPA will reveal multiple and distinct profile groups with varying levels of the three components of commitment.

Hypothesis 2: The profiles identified in the analyses of organizational commitment mindsets will include: uncommitted, CC-dominant, AC-dominant, AC/NC-dominant, and fully committed.

The second objective of this study was to investigate the stability of the commitment profiles between the two samples. The naturally occurring stressful event of soldiers fighting and risking their lives while engaging in military operations abroad provides an excellent opportunity to establish whether highly-stressful work environments, such as a combat zone, impacts the stability of commitment profiles. In their study, Kam et al. (2013), found that even under conditions of organizational change, profiles within their sample remained stable over the course of their eight-month study. Despite the extreme conditions, soldiers undergo extensive training and screening and are exposed to these

conditions for an extended duration of time. Given these circumstances, there is reason to believe that the profile structure found in my study will be stable across both samples.

Hypothesis 3: The commitment profiles that emerge in the pre-deployment sample will continue to exist in the post-deployment sample.

The third objective of this study was to investigate whether pre-deployment conditions could predict profile membership. As noted earlier, environments that support the satisfaction of the basic needs yield more favourable commitment profiles (Meyer et al., 2012). This study investigated whether individual perceptions of unit climate, and operational preparedness could predict commitment profile membership. These two measures, administered during the pre-deployment phase, are used to assess an individual's overall psychological preparedness to deploy. These measures focused on one's confidence in their personal abilities and the level of trust they have in the relationships (e.g., unit, supervisor, family) believed to be sources of support for their upcoming deployment. Accordingly, there is reason to believe that those who report higher scores on the unit climate and operational preparedness scales will report more favourable commitment profiles.

Hypothesis 4: Soldiers who report higher scores on the unit climate scale will report more favourable commitment profiles (i.e. fully committed, AC/NC-dominated, AC-dominated).

Hypothesis 5: Soldiers who report higher scores on the operational preparedness scale will report more favourable commitment profiles (i.e. fully committed, AC/NC-dominant, AC-dominant).

The last objective of this study was to examine potential consequences of profile membership. In addition to reporting on their operational preparedness, soldiers are asked to complete various measures that attempt to evaluate the impact of the upcoming deployment on their psychological well-being and commitment to the organization. Additionally, upon their return from deployment, not only are they asked to complete the same measures but also to report their future career intentions with the CAF.

Recent findings strongly support the relationship between various profiles and turnover intention in that those who experience more favourable profiles tend to report higher staying intentions (Meyer et al., 2013; Somers, 2010; Wasti, 2006). As discussed earlier, Meyer, et al. (2013) presented evidence supporting the notion that self-reported signs and symptoms of psychological distress such as anxiety and depression are greatest among those with the least desirable commitment profiles specifically in CAF personnel (Meyer et al., 2013).

This study investigated the relationship between the various commitment profiles and the consequences of these profiles, such as future intention to stay and self-reported level of psychological distress under more extreme conditions.

Hypothesis 6: Soldiers who report higher staying intentions will report more favourable commitment profiles (i.e. fully committed, AC/NC-dominant, AC-dominant).

Hypothesis 7: Soldiers who report lower levels of psychological distress will report more favourable commitment profiles (e.g. fully committed, AC/NC-dominant, and AC-dominant).

Method

Participants and Procedures

Data for these analyses were obtained from the CAF through the Human Dimensions of Operation (HDO) survey. The HDO is a long-term study that investigates

the perceptions, attitudes, and mental well-being of CAF personnel involved in military operations. In general, soldiers are surveyed at three time points, prior to their deployment overseas, mid-tour, and post-deployment. Only selected measures in the HDO survey project were used for the purposes of the present research. Specifically, the Unit Climate, Operational Preparedness and K-10 scales administered in the pre-deployment phase and the Future Intention and K10 scales administered in the post-deployment phase were utilized. Although participation is on a voluntary basis, to ensure maximum participation the measures were available online or in paper-pencil format, and in French or English. Soldiers are provided with an overview of the study and are assured anonymity, thus information such as age, gender, ethnicity, and occupation are not collected.

CAF researchers collected the data used in this study between November 2007 and September 2011 and it includes data from five separate operational rotations to Kandahar Province, Afghanistan. The data include 4254 pre-deployment, and 2365 post-deployment responses. Demographic data for the pre- and post-deployment samples are proportionately comparable with respect to their rank, years of service, first official language, status, and the number of tours experienced by the member (see Table 1). This study used Maximum likelihood estimation for missing data.

Table 1

Demographic Information for Pre-Deployment (N = 4254) and Post-Deployment (N = 2365) Samples

	Pre-deployment Frequencies (%)	*Post-deployment Frequencies (%)*

Rank		
Junior NCMs	3037 (71.4)	1599 (67.6)
Senior NCMs	573 (13.5)	381 (16.1)
Junior Officers	335 (7.9)	185 (7.8)
Senior Officers	82 (1.9)	76 (5.2)
Years of service		
5 years or less	1824 (42.9)	743 (31.4)
6-10 years	1030 (24.2)	696 (29.4)
11-15 years	438 (10.3)	295 (12.5)
16-20 years	318 (7.5)	194 (8.2)
21-25 years	276 (6.5)	210 (8.9)
25 years or more	145 (3.4)	114 (4.8)
First official language		
English	2455 (57.7)	1483 (62.7)
French	1591 (37.4)	785 (33.2)
Status		
Regular force	3292 (77.4)	2052 (86.8)
Reserve force	745 (17.5)	208 (8.8)
Number of tours		
1	2305 (54.2)	1138 (48.1)
2	723 (17.0)	510 (21.6)
3	380 (8.9)	257 (10.9)
4	267 (6.3)	184 (7.8)
5+	253 (5.9)	165 (7.0)

Note. NCMs = non-commissioned members

Measures

Organizational commitment. AC, NC, and CC were assessed using 12 items from the measures developed by Meyer, Allen, and Smith (1993), with "the CF" substituted for "organization". The AC subscale comprised four items (e.g., " The CF has a great deal of personal meaning for me"). The NC subscale also consisted of 4 times (e.g., "I would feel guilty if I left the CF right now"), and the CC subscale consisted of 4 items (e.g., "I feel that I have too few options to consider leaving the CF"). Participants

were asked to indicate their agreement with each statement on a 5-point Likert-type scale ranging from 1 (strongly agree) to 5 (strongly disagree).

Psychological distress. Self-reported signs of psychological distress were measured using the 10-item K-10 scale, a psychometrically robust multi-dimensional measure consisting of four subscales that evaluate the psychological distress of soldiers (Blanc et al., 2013). Specifically, this scale assesses the level of unspecified psychological distress or strain (i.e. symptoms of anxiety and depressive disorders; Kessler et al., 2002). The subscales and sample items are nervousness (2 items; e.g., "Did you feel nervous?"), agitation (2 items; e.g., "Did you feel restless or fidgety?"), fatigue (2 items; e.g., "Did you feel tired-out for no good reason?"), and negative affect (4 items; e.g., "Did you feel hopeless?"). In the survey, respondents are asked whether they have experienced any of the symptoms described in the last four weeks using a 5-point Likert-type scale. To lessen the likelihood of response error, CAF researchers modified the scale for use in the HDO survey. Specifically, item responses were inverted so that items were consistent with other HDO scales and that higher scores reflected a higher level of psychological distress. Responses ranged from none of the time (1) to all of the time (5).

Operational Preparedness. The degree to which soldiers believe they are psychologically prepared for their upcoming deployment is assessed by this 15-item self-report scale. This measure is a 15-item self-report scale that assesses the degree to which soldiers believe they are prepared for their upcoming deployment. Questions range from their individual battle readiness (self-readiness; 3 items), the confidence they have in their equipment (equipment readiness; 3 items) and unit (family support subscale; 4 items), as

well as the ability of their family to carry on without them while they are deployed (family readiness; 5 items). Responses are based on a 5-point Likert-type scale with scores ranging from 1= Strongly disagree to 5 = Strongly agree and was developed for use specifically in the HDO survey project.

Unit Climate. Respondents are asked to assess the morale, cohesion, and other important aspects of climate important to military performance. This 11-item self-report measure developed by the CAF uses a 5-point Likert-type scale with 1 = Strongly disagree to 5 = Strongly agree. There are two subscales in this measure, the unit climate/morale subscale that measures perception of cohesion, unity, and morale (5 items; e.g., "We 'stick together', which enhances our ability to achieve our assigned tasks."), and the confidence in chain of command subscale that measures one's confidence in their leaders within their unit (6 items; e.g., "In the event of combat, I have confidence in my company commander."). Higher scores on the subscales indicate higher perceptions of unit cohesion/morale and confidence in their chain of command.

Future Intention. This measure asked soldiers to rate their level of agreement with four statements about their CF career intentions. These statements were (a) "I intend to stay in the CF as long as I can"; (b) "I intend to leave the CF as soon as I become eligible for pension benefits"; c) "I intend to leave the CF as soon as I have completed my current terms of service"; and d) "I intend to leave the CF as soon as another job becomes available". Of these items, the first assesses individual intentions to stay, the remaining three items are reversed coded and assess individual intentions to leave the CAF. Responses are made on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7

(strongly agree). Higher overall scores on this measure indicate stronger intention to stay with the organization.

Data Analysis

Statistical analyses conducted in this thesis were completed using the robust maximum likelihood estimator (MLR) in MPlus 7.2 (Muthen & Muthen, 1998-2009) and previous research as a guide. I first began by conducting a confirmatory factor analysis (CFA). The purpose of the CFA was to evaluate the discriminant validity of all the self-report measures for both the pre- and post-deployment samples and to confirm item loadings onto their respective factors. Although chi-square values were computed as a test of fit, because these values are almost always significant with models that contain large number of cases (Kline, 2011), I also examined three additional fit indices. First, the comparative fit index (CFI) was used to assess fit. The CFI compares the model of interest to a baseline model, in this case, the null model that assumes zero population covariance among the observed variables. Normed values for the CFI values consist of a 0-1 range with values at or above 0.95 considered indicative of good-fitting models (Tabachnick & Fidell, 2013). Second, the root means square error of approximation (RMSEA) was utilized. The RMSEA estimates the lack of fit in a model in comparison to a fully saturated model (i.e. perfect model) with larger model misspecification indicating poorer fit. Values equal or less than 0.06 on this index indicate a good-fitting model (Tabachnick & Fidell, 2013). The last fit index used to assess model fit for the CFAs was the Tucker-Lewis index (TLI). An incremental fit measure, the TLI compares the model of interest against an independent model, the null and perfect model. However,

the benefit of this fit index versus other incremental fit indices is that it takes into account the number of parameters being used in your model. Values above 0.95 for the TLI are considered good, with anything below 0.90 considered to be a poor fitting model. Overall means, standard deviations, reliabilities and correlations among the variables were reported in the results section.

After confirming the structure of the latent factors, a latent profile analysis (LPA) was conducted to identify latent commitment profiles for each of the pre- and post-deployment datasets. Following Meyer et al. (2013), through an iterative process a two-profile model was first obtained. Subsequent profiles were added to the model until the model fit no longer improved; the new emergent profiles had no theoretical foundation or the difference in the new profile, and a previously found profile was negligible. Emergent LPA models were evaluated using several criteria. First, the sample-adjusted Bayesian information criterion was used (SABIC; Sclove, 1987). The SABIC, a useful tool when comparing models, is used to select the model with the best fit and the fewest parameters from a set of nonhierarchical models. Second, the bootstrapped likelihood ratio test was utilized (BLRT; McLachlan & Peel, 2000). The BLRT assesses the degree to which a model with k profiles provides a better fit than a model with $k - 1$ profiles. A BLRT of $p < 0.05$ indicates a statistically significant improvement in fit when a new model is introduced. Third, using guidelines provided by Nylund, Asparouhov, and Muthen (2007), the number of cases in each profile and the posterior probability associated with each profile were monitored. As suggested by Nylund et al. (2007), the best solution should have the lowest SABIC and BLRT, a significant BLRT p value, not contain any

profiles with a small number of individuals (e.g. less than 5% of the sample), and demonstrate clearly defined membership in one profile with low probability of belonging to another (i.e., verified by assessing posterior probabilities values). Furthermore, the mean commitment scores for each of the solutions were examined to determine the distinctiveness of these profiles.

The stability of commitment profiles across the two samples was examined by systematically investigating the profile invariance across the samples using the framework recommended by Meyer and Morin (2015). As suggested, the measurement model was first investigated to ensure that the constructs of the organizational commitment scale remained the same across both samples (i.e., pre- and post-deployment). The CFAs conducted earlier in the study were utilized to confirm the prior three factor (i.e., AC, CC, NC) measurement model estimates. To accommodate the following four multiple-group CFAs, the pre- and post-deployment items for the organizational commitment scale were merged and dummy coded to identify the individual samples (e.g., 1 = pre-deployment, 2 = post-deployment). This allowed me to conduct tests of the measurement invariance of the a priori measurement model by testing the configural invariance (unconstrained), the weak invariance (constrained loadings), strong invariance (constrained, loadings and intercepts), and strict invariance (constrained loadings, intercepts, and residual variances). Model fit was based on the same indicators previously discussed in this thesis.

Once measurement invariance of the a priori measurement model was confirmed, the four steps suggest by Meyer and Morin (2015) to establish invariance across

subpopulations was conducted. First, to ensure that latent profile estimates for each sample were from fully comparable measures of commitment, factor scores obtained from the strict measurement invariance analysis were saved. The first step in their framework is to establish whether subpopulations contain the same number of latent profiles. This is verified by testing the configural invariance of the profiles. The second step in their framework involves a test for structural invariance and requires that constraints be placed on the within-profile means on the commitment mindsets to be equal across both samples. Evidence supporting the configural and structural invariances confirm that the nature of the profile solutions are similar, a necessary step to investigate other forms of invariance. Thus, if support for configural and structural are confirmed, I will then test for dispersion invariance by constraining the within-profile variability of the indicators to be equal across both samples. Additionally, I will test the distributional invariance by constraining the size (i.e., class probabilities) of the latent profiles across samples.

Relations between predictor variables (i.e., operational preparedness, unit climate) and the probable profile membership were evaluated using multinomial logistic regression analysis. First, a latent class regression model was launched using multinomial logistic regression analyses within the LPA to test the hypothesed relationships. Any referent group can be used in the analysis. However, as discussed by Meyer et al. (2013), the ideal referent group is the uncommitted profiles. Unfortunately, seeing as no uncommitted profile emerged from this sample, the low CC/NC-dominant profile was selected as the reference group of choice for this analysis. The reasoning behind the

selected referent group is that the multinomial logistical regression analysis allows us to assess how the predictor variable relates to the odds that individuals belong to their observed profile, relative to the odds of being in the referent group profile. Thus in the absence of an uncommitted profile, the least favourable profile was selected providing us with insight into the odds of belonging to any profile in comparison to the least favourable profile. Based on previous research, the CC/NC-dominant profile was judged to be the least favourable profile in this sample, therefore selecting it as the referent profile allows us to answer this question.

Lastly, a pseudo-class Wald Test of Mean Differences was used to establish the relationship between profile membership and the outcome variable of interest in this study (i.e., psychological distress, future intention). This is the ideal statistical analysis given that the chi-square test of statistical significance assesses variable mean differences between profiles while accounting for the posterior probabilities that individuals may belong to different profiles (Asparouhov & Muthen, 2007; Meyer et al., 2013; Morin et al., 2011).

Results

Means, standard deviations, reliabilities and correlations amongst the variables of interest in this study are reported in Tables 2 and 3. A series of t-tests were conducted and confirmed that the pre- and post-deployment sample means for each of the commitment mindsets are significantly different. In particular, it was discovered that the AC mindset significantly decreased from pre-deployment sample (M=3.78, SD=0.84) to post-deployment sample (M=3.57, SD=0.98), t(6524)=8.422, $p < .001$, r=0.12. Whereas the CC mindset demonstrated a significant increase between the pre-deployment sample (M=2.99, SD=1.09) to post-deployment sample (M=3.24, SD=1.14), t(6525) = -8.639 $p <$ .001, r=0.11. Lastly, similar to the AC mindset, the NC mindset also demonstrated a significant decrease from pre-deployment sample (M=3.37, SD=0.80) to post-deployment sample (M=3.09, SD=0.90), t(6523)=12.185, $p < .001$, r=0.16. Additionally, of notable interest is that all of the subscale means in the study were normally distributed except for the K-10 subscale. The distributions for the K-10 subscales were positively skewed with less than 1% of the population reporting higher distress levels (e.g. scores of 4 or 5 on scale items).

This distribution of the scores for the K-10 subscales was expected seeing as only a small percentage of the population falls into the high psychological distress category for several reasons (McCuaig Edge & Ivey, 2012). First, soldiers are subjected to a rigorous pre-screening process that evaluates a soldier's physical and mental health prior to being selected for deployment overseas. Soldiers who are known by their supervisors as being administrative burdens or who display disciplinary issues are most times removed from

deployment. In addition to the pre-screening, pre-deployment training is a lengthy process that often results in the identification of individuals who fail to demonstrate the necessary skills, and/or knowledge to perform overseas. Once again, these individuals when identified are removed from the task force and replaced. Nevertheless, despite the skewness of the data, the MLR estimator in MPlus 7.2 was used, which is robust to non-normality.

CFAs

The CFAs were conducted to evaluate the discriminant validity, test for common method variance and assess overall latent factor structures for the five measures used in this study with this particular sample. With the exception of one item, all items in this study loaded significantly ($p < .001$) onto the intended latent factors for both the pre-deployment and post-deployment phases (see Table 4) providing sound evidence that supports convergent validity of the measurement items onto their factor.

Item 11 ("I would worry about my family's financial position") in the operational preparedness scale was removed from the analysis due to very low loadings (0.08) on the family readiness subscale. A number of factors are suspected to have contributed to this low factor loading. First, item 11 is a reversed-coded item that are known to frequently produce unexpected factor structures (e.g. Netemeyer, Bearden, & Sharma, 2003). Second, this item is unlike all other items on the scale, which focus on the family's emotional needs. The military does not routinely pry into the financial situations of military families. However, if a member experiences financial difficulties and it impacts

their ability to perform their duties, this can result in members being placed on administrative warning, or suffering career consequences. This commonly known fact might have influenced soldiers' answers to this particular question and, in turn, the factor loading. Furthermore, it should be noted that the CAF financially compensates their soldiers for the hardships and risks they endure overseas with sizable allowances that could have been another potential source bias. Consequently, given all the reasons stated above, the item was removed from all further analysis.

Overall, model estimates evaluated with the CFA were within bound and no model modifications were deemed necessary. The analysis demonstrated that the model fit the data well for both the pre-deployment data, $\chi^2(956) = 9156.91$, $p < .001$, CFI = .92, RMSEA = .045 TLI = .91, and the post-deployment data, $\chi^2(325) = 34233.54$, $p < .001$, CFI = .93, RMSEA = .045, TLI = .92.

LPA

After confirming the factor structure of the measures, LPAs were conducted on each of the samples separately (Ns= 4254 and 2365, respectively). Both analyses were conducted in the same manner. Initially, a two-profile solution LPA and consecutive profiles were added. While adding profiles, model fit indices (e.g. SABIC, and BLRT) were monitored. As seen in Table 5, the model fit statistics continuously decreased and the BLRT value continued to remaining significant even up until the seven-profile solution suggesting at least seven profiles was present in each sample group.

Table 2

Descriptive Statistics and Correlations for Pre-deployment Variables (N=4265)

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. AC	3.78	0.84	(.88)												
2. CC	2.99	1.09	0.27	(.85)											
3. NC	3.37	0.80	0.86	0.40	(.67)										
4. UCLIM	3.99	0.68	0.51	0.12	0.52	(.79)									
5. CoC	4.14	0.82	0.40	0.10	0.44	0.75	(.85)								
6. SELF READY	4.49	0.59	0.36	-0.41	0.29	0.42	0.31	(.83)							
7. EQUIP READY	3.31	1.11	0.34	0.14	0.39	0.23	0.22	0.12	(.91)						
8. FAMILY SUPPORT	3.89	0.90	0.43	0.09	0.47	0.43	0.37	0.33	0.35	(.92)					
9. FAMILY READY	3.88	0.65	0.44	0.06	0.49	0.41	0.37	0.32	0.34	0.91	(.72)				
10. NERVOUS	1.95	0.70	-0.14	0.19	-0.08	-0.17	-0.14	-0.34	0.70	-0.15	-0.17	(.68)			
11. AGITATION	1.63	0.83	-0.14	0.16	-0.10	-0.17	-0.15	-0.22	-0.74	-0.18	-0.20	0.86	(.65)		
12. FATIGUE	1.74	0.85	-0.22	0.20	-0.18	-0.28	-0.21	-0.28	-0.12	-0.26	-0.28	0.90	0.88	(.76)	
13. NEGATIVE AFFECT	1.38	0.62	-0.24	0.15	-0.19	-0.27	-0.23	-0.28	-0.04	-0.22	-0.23	0.91	0.84	0.93	(.85)

Note. UCLIM= Unit Climate Subscale; CoC= Chain of Command. Cronbach's alpha values in diagonal.

Table 3

Descriptive Statistics and Correlations for Post-deployment Variables (N=2365)

Variables	Mean	SD	1	2	3	4	5	6	7	8
1. AC	3.57	0.98	(.91)							
2. CC	3.24	1.14	0.28	(.88)						
3. NC	3.09	0.90	0.85	0.44	(.73)					
4. NERVOUS	4.79	1.38	-0.14	0.12	-0.12	(.78)				
5. AGITATION	1.81	0.95	-0.15	0.09	-0.15	0.92	(.78)			
6. FATIGUE	1.49	0.75	-0.21	0.14	-0.19	0.89	0.90	(.81)		
7. NEGATIVE AFFECT	2.00	0.99	-0.23	0.12	-0.21	0.88	0.85	0.93	(.89)	
8. INTENT	1.64	0.82	0.74	0.34	0.83	-0.22	-0.22	-0.29	-0.28	(.72)

Note. Cronbach's alpha values in diagonal

Additionally, as seen in Table 6, starting at the four-profile solution for the pre-deployment sample, and at the six-profile solution for the post-deployment sample, at least one profile consisted of 5% or less of the sample.

Table 4

Pre- and Post-deployment measures CFA Factor Loadings ***

Scale	Item #	Factor Loading		Scale	Item #	Factor Loading
Commitment Scale		Pre	Post	Operational Preparedness		Post
AC	1	.745	.770	Self-Ready	1	.807
	2	.846	.858		2	.833
	3	.912	.940		3	.721
	4	.767	.807	Equipment Ready	4	.828
NC	5	.719	.782		5	.920
	6	.826	.823		6	.903
	7	.809	.835	Family Support	7	.856
	8	.718	.752		8	.867
CC	9	.301	.765		9	.888
	10	.705	.317		10	.852
	11	.531	.614	Family Ready	12	.905
	12	.675	.725		13	.821
K-10					14	.457
Nervousness	2	.695	.781		15	.320
	3	.789	.851	Unit Climate		
Fatigue	1	.649	.748	Unit climate subscale	1	.765
	8	.762	.861		2	.804
Agitation	5	.772	.825		3	.758
	6	.810	.844		4	.442
Negative Affect	4	.789	.824		5	.544
	7	.800	.851	Chain of Command	6	.737
	9	.801	.856		7	.647
	10	.686	.766		8	.758
					9	.735
					10	.610
					11	.628
				Intention to Stay		
					1	.765
					2	.317
					3	.617
					4	.725

***Note* all loading significant at $p < .001$

With a baseline profile solution ascertained, profiles were closely examined to establish whether there were meaningful theoretical differences between them. As highlighted by Marsh, Ludtke, Trautwein, and Morin (2009) and reinforced by Meyer et al. (2013), it is important to keep in mind that, with large samples, fit indices often suggest the extraction of a larger number of profiles. In many cases some of these profiles may have a small membership, may not be distinct from other profiles, and/or may not be psychologically meaningful. In addition to the previously mentioned criteria for profile assessment, careful assessment should be given to the shape, elevation, and scatter of each profile to aid in determining if the profiles structurally differ from one another.

Assessment of the pre-deployment profiles showed that, after the four-profile solution, the LPA yielded small profiles that contained less than 5% of the sample. Based on the evaluation of the structures, the smaller profiles were deemed to be a finer representation of larger profile and, therefore, provided no distinct contribution to the analysis. Unlike the pre-deployment sample, the post-deployment profiles continued to contain a minimum of 5% or more of the sample in each of the profiles up to a six-profile solution. Despite the larger membership size of these profiles, close examination of all six profiles revealed that two of the profiles (i.e., low CC/NC-dominant, high AC-dominant) were duplicated (i.e., split into two profiles with very similar shape). Given that these profiles were theoretically indistinguishable, it was determined that the four-profile solution was the best solution for the post-deployment samples. Ultimately, a four-profile solution was accepted as the being the optimal solution for both samples.

Table 5

Model fit statistics

	Pre-deployment		Post-deployment	
	SABIC	BLRT	SABIC	BLRT
2-Profile	19543.341	2850.318***	13587.233	1847.959***
3-Profile	17666.559	1897.49***	12618.404	987.113***
4-Profile	16188.851	1498.415***	12042.12	594.567***
5-Profile	15586.42	201.815***	11515.636	68.865***
6-Profile	15305.661	273.155***	11388.707	145.212***
7-Profile	14944.988	409.692***	11203.041	544.767***

****p* < .001*

Table 6

Membership for the profile models

Sample	1	2	3	4	5	6	7
Pre-deployment							
2-Profile	66.02%	33.98%					
3-Profile	39.80%	7.96%	52.25%				
4-Profile	5.63%	44.25%	24.64%	25.49%			
5-Profile	5.72%	43.52%	25.14%	23.94%	1.70%		
6-Profile	1.70%	24.45%	15.22%	20.69%	32.46%	5.48%	
7-Profile	5.55%	30.61%	12.07%	13.49%	1.70%	15.93%	20.64%
Post-deployment							
2-Profile	74.70%	25.30%					
3-Profile	12.95%	45.75%	41.30%				
4-Profile	45.53%	19.08%	9.37%	26.03%			
5-Profile	5.14%	8.24%	42.17%	20.85%	23.61%		
6-Profile	5.22%	23.52%	41.74%	8.20%	13.42%	7.90%	
7-Profile	5.14%	21.67%	29.09%	8.16%	15.06%	7.68%	13.21%

The posterior probabilities in Table 7 reveal that the four profiles in both samples are distinctly different from each other. Moreover, the probability of an individual belonging to their respective profile are high ranging from 93% to 97% for the pre-

deployment sample and 92% to 95% for the post-deployment sample. Probabilities of individuals belonging to other profiles were low with the highest probability being 6% in the pre-deployment samples and 9% in the post-deployment sample. These profile probabilities provided a strong degree of confidence that individuals were appropriately classified into their respective classes and compelling evidence supporting the four-profile solutions.

Table 7

Classification of posterior probabilities for the models.

Sample	Profile 1	Profile 2	Profile 3	Profile 4
Pre-deployment				
Profile 1	.**97**	<.001	<.001	.03
Profile 2	<.001	.**93**	.03	.04
Profile 3	<.001	.05	.**95**	<.001
Profile4	.01	.06	<.001	.**97**
Post-deployment				
Profile 1	.**95**	<.001	.05	<.001
Profile 2	<.001	.**92**	<.001	.09
Profile 3	.02	<.001	.**92**	.06
Profile4	<.001	.04	.04	.**92**

Commitment mindsets for the four profiles that emerged can be seen in Figure 1 and 2. For the purposes of this study and my discussion, profiles are numbered according to the favorability based on previous research (Kam et al., 2013; Meyer et al., 2012; Meyer et al., 2013; Wasti, 2005). Prior to discussing the profiles, a few points explaining how the labels were determined should be mentioned. To begin with, using the guidelines proposed by Meyer and Morin (2015), profiles were labeled according to their *shape* (pattern of high and low mean scores on the mindset indicators), *elevation* (average

mean scores across indicators), and *scatter* (degree of differentiation of the mean scores on the mindset indicators). The term 'dominant' in the labeling scheme refers to the mindset(s) with the highest score in the profile. The terms 'high' and 'low' are used to indicate whether the mindsets as a group are above or below the sample mean. For example, a profile with an AC-dominant shape but with all of the means below the sample average would be described as low AC-dominant, whereas a profile with the same shape but with all means above the sample average would be described as high AC-dominant. It should be noted that despite the means differences noted earlier, the profiles are very similar in shape and elevations and thus the profile labeling descriptions that follows describes the profiles in both Figures 1 and 2.

Profile 1 is characterized by low scores on all mindsets with CC and NC being more elevated than AC, and is the *low CC/NC dominant* profile. Profile 2 includes low scores on all three mindsets and is identified as the *weakly committed* profile whereas in Profile 3, all three-commitment mindsets are above the scale mid-point and fit the description of the *moderately committed* profile. Lastly, Profile 4 is characterized by an elevated AC score and lower NC and CC scores, and is labeled as the *high AC-dominant* profile referred to in the commitment profile literature as the emotionally committed profile. The emergence of multiple profiles provides support for Hypothesis 1. However, of the four profiles that emerged, only the high AC-dominant profile was anticipated therefore providing only partial support for Hypothesis 2.

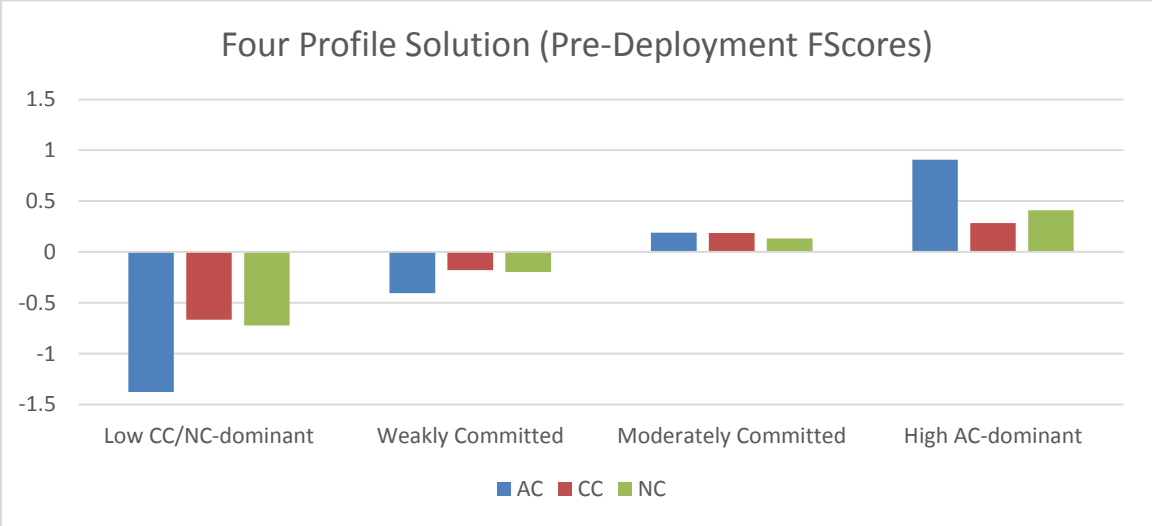

Figure 1. Pre-deployment – Factor Score Means of the commitment mindsets across profiles.

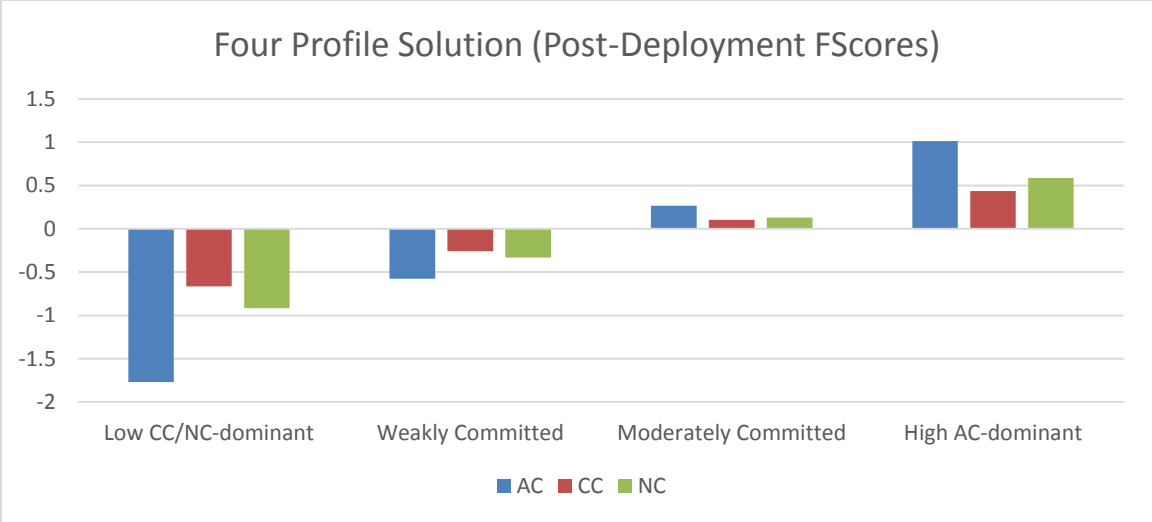

Figure 2. Post-deployment – Factor Score Means of the commitment mindsets across profiles.

Invariance of the Commitment Profiles

As stated earlier, CFAs conducted earlier in the study confirmed the prior three factor (i.e., AC, CC, NC) measurement model estimates. Results support the a priori

three-factor model and measurement invariance of the a priori measurement model as seen in Table 8. The values of the fit indices suggest that the measurement models fit the data well and that the constructs remain the same across both profiles.

The test of configural invariance across profiles with both samples confirmed the presence of the four-profile solutions. When compared against the configural invariance model, the structural invariance model resulted in slightly higher values across all model fit indices. These results suggest that the data do not support structural invariance across profiles. Thus, despite their strong visual resemblance, the level on the profile indicators (i.e., commitment mindsets) these profiles differ across samples. As recommended by Meyer and Morin (2015) in their framework, evidence of configural and structural invariance is required in order to investigate other forms of invariance. Thus dispersion and distribution of invariance were not investigated consequently, Hypothesis 3 was not supported.

Table 8

Confirmatory Factor Analyses Conducted on the Organizational Commitment Scale

Model	MLRχ^2	CFI	TLI	RMSEA	RMSEA 90%CI
Pre-Deployment 3 factor model	9156.91(956)*	0.929	0.910	0.045	0.044 - 0.046
Post-Deployment 3 factor model	34233.54(325)*	0.932	0.919	0.060	0.058 - 0.063
Multiple-Group					
Configural Invariance	1494.77 (102)*	0.961	0.950	0.066	0.063 - 0.069
Weak Invariance	1514.704 (111)*	0.961	0.954	0.063	0.063
Strong Invariance	1839.254 (120)*	0.952	0.948	0.067	0.064 - 0.070
Strict Invariance	1901.880 (132)*	0.951	0.951	0.065	0.062 - 0.068

Antecedents of Commitment Profiles

Prior to testing Hypothesis 4 and 5 involving predictors of profile membership, demographic information obtained during the surveys were evaluated as potential control variables. The demographic information in this study was obtained as part of routine information gathering for the larger HDO survey project. A multinomial logistic regression analysis was conducted to investigate the predictive ability of the demographic variables. Of the demographics assessed, only three of the variables (i.e. first official language, years of service, rank) contributed meaningfully towards predicting some (i.e. one or two) profile membership. Given their random contribution towards the meaningful prediction of some profile membership, these variables were omitted from further analysis and reporting to facilitate interpretation of the primary variables of interest in this study.

Multinomial logistic regression analyses were conducted to test Hypotheses 4 and 5. Results from multinomial logistic regression differ from those provided by standard linear or logistic regression. First, each predictor has *k*-1 (*k* being the number of profiles in the data) different complementary effect for comparison of one profile to a referent profile. For the purposes of these analyses, the low CC/NC dominant profile was used at the referent given that, based on the outcomes analysis, this profile was deemed to be the least favourable profile of the four profiles obtained in this study. Second, the goal of multinomial logistic regression is to model the odds of group membership as a function of the predictor. The resulting regression coefficients represent the effects of these predictors on the log-odds of the outcomes (Kline, 2011).

Due to the correlation between predictors, the regression analysis was conducted in two phases. First, each predictor was separately investigated to examine its unique contribution, with the results reported in Table 9. Afterwards, a second regression analysis containing all the predictors was conducted (see Table 10).

Table 9

Antecedents of Commitment Profiles in Multinomial Logistic Regressions (One Antecedent in each Analysis)

	Weakly Committed		Moderately Committed		AC Dominant	
	β	*OR*	β	*OR*	β	*OR*
Complete OP Scale						
Self Ready	0.15	1.17	0.66***	1.93	2.00***	7.41
Equipment	0.40***	1.49	0.76***	2.13	1.15***	3.16
Family Support	0.47***	1.60	1.00***	2.72	2.05***	7.93
Family Ready	0.29*	1.33	1.00***	2.72	2.42***	9.41
Complete UC Scale						
Unit climate	0.71***	2.04	1.57***	4.81	2.84***	17.05
Chain of Command	0.36***	1.43	0.93***	2.53	1.65***	5.23

Notes. The reference profile is the low CC/NC – dominant profile. OR = odds ratio; all predictors in the table were entered independently each time. ***$p < .001$, *$p < .05$

Regression coefficients listed in Tables 9 and 10 represent the effects of the predictors on the log odds of the outcome (i.e. probability of belonging to one profile over the reference profile by pairwise comparison) that can be expected for a one-unit increase in the predictor. These coefficients are expressed in log-odds units and are complex to interpret when trying to determine probability. Log-odds are the log of the odds ratio. Thus, alternatively, odds ratios are an equivalent way to express probabilities that are much easier to interpret and are included in Tables 9 and 10.

Table 10

Antecedents of Commitment Profiles in Multinomial Logistic Regressions (all Antecedent in each Analysis)

	Weakly Committed		Moderately Committed		AC Dominant	
	β	*OR*	β	*OR*	β	*OR*
Self Ready	0.26	1.03	0.24*	1.28	1.08***	2.95
Equipment	0.43***	1.54	0.79***	2.20	1.01***	2.76
Family Support	0.42***	1.52	0.59***	1.80	1.00***	2.73
Family Ready	-0.22	0.81	0.21	1.24	0.85***	2.34
Unit climate	0.77***	2.16	1.34***	3.83	1.89***	6.59
Chain of Command	-0.04	0.96	0.22*	1.25	0.47**	1.60

Notes. The reference profile is the low CC/NC – dominant profile. OR = odds ratio
***$p < .001$, **$p < .01$, *$p < .05$

Odd ratios (ORs) reflect the change in odds of membership in the target profile versus the comparison (i.e., low CC/NC dominant) for each unit of elevation in the predictor. ORs are effect sizes and allow the size of different effects to be compared more directly. ORs above 1 are positively related to the logistic regression coefficient. For example, an OR of 2 indicates that the likelihood of membership in the target profile versus the comparative is twice as likely for each unit of increase in the predictor. Alternatively, ORs of less than 1 are related to negative logistic regression coefficients and indicate that the likelihood of membership to the targeted profile is reduced as the score on the predictor increases. It should be noted that, in this case, ORs closer to zero denote a larger negative effect. For instance, an OR of .05 indicates that the likelihood of membership in the target profile versus the comparative is reduced by 50% per unit increase in the predictor.

Examination of Tables 9 and 10 reveals that, with the exception of self-readiness for the weakly committed group, all of the predictors, when considered individually,

significantly contribute to the prediction of profile membership. When included simultaneously into the regression, only a few predictors fail to reach significance, while most of them continued to contribute significantly to the prediction of profile membership. When closely examining Tables 9 and 10, a noteworthy consistent pattern emerges across all predictors. First, the odds of belonging to each of these groups increase relative to the low CC/NC dominant groups with each unit of elevation in the predictor. Furthermore, with the profiles ordered from left to right in terms of their desirability, it can easily be seen that the odds of membership increase as the profile becomes more favourable and that all of the predictors significantly predict the group membership to high AC-dominant profile in comparison to the referent group. For example, in Table 9, the OR for equipment ready increases from the weakly committed group (1.49), to the moderately committed (2.13), and is highest for the high AC-dominant profile (3.16).

Furthermore, it should be noted that, whether considered on its own or when combined with all other predictors, the unit climate subscale contributed the most unique variance when predicting profile membership relative to the low CC/NC profile and was followed by equipment ready and family support. The highest ORs obtained were for the high AC-dominant profile. Thus, consistent with Hypotheses 4 and 5, soldiers who report higher scores on the unit climate and operational preparedness scales report more favourable commitment profiles.

Consequences of Commitment Profiles

Outcomes of interest in this study were investigated using the Wald Test of Mean Equality. Results from these analyses were used to test Hypotheses 6 and 7 and are reported in Table 11. Results show that means scores for the K-10 are significantly higher for the low CC/NC-dominant profile than any other profile in both samples ($p <$ .001). As favorability of the profile increases means for psychological distress decreases. When comparing the K-10 subscales independently, most of the mean differences were statistically significant with the exceptions of the following: within the pre-deployment sample, the means differences for nervousness was not statistically significant when comparing the low CC/NC-dominant profile ($\mu = 1.72$) to the weakly committed ($\mu =$ 1.70) and the moderately committed ($\mu = 1.63$) profiles. Additionally, the mean difference for agitation was not statistically significant when comparing the low CC/NC-dominant profile ($\mu = 1.94$) to the weakly committed profile ($\mu = 1.51$) and when comparing the moderately committed profile ($\mu = 1.70$) to the high AC-dominant ($\mu =$ 1.66) profiles.

The post-deployment sample yielded similar results, where the mean difference for nervousness was not statistically significant when comparing the low CC/NC-dominant profile ($\mu = 1.81$) to the weakly committed ($\mu = 1.69$) and when comparing the weakly committed ($\mu = 1.69$) to the moderately committed ($\mu = 1.63$). Whereas the mean difference for agitation was not statistically significant only when the moderately committed ($\mu = 1.77$) to the high AC-dominant ($\mu = 1.70$) profiles.

Table 11

Wald Test of Mean Differences on potential consequences of Commitment Profiles for Pre- and Post-deployment Sample

	Low CC/NC Dominant	Weakly Committed	Moderately Committed	AC Dominant	Overall X^2
Pre-deployment					
K-10 Scale					
Fatigue	2.26	2.09	1.91	1.79	87.37***
Nervousness	1.72	1.70	1.63	1.55	25.96***
Agitation	1.94	1.84	1.70	1.66	34.93***
Negative Affect	1.73	1.51	1.33	1.27	119.30***
Post-deployment					
K-10 Scale					
Fatigue	2.41	2.11	1.94	1.81	43.24***
Nervousness	1.81	1.69	1.63	1.52	17.97***
Agitation	2.07	1.88	1.77	1.70	18.31***
Negative Affect	1.89	1.58	1.42	1.34	52.79***
Intention to Stay	3.39	4.12	5.07	5.76	483.30***

*Notes *** $p < .001$*

Despite the few non-significant findings, all other differences between profile means were significant ranging from the $p < .05$ to $p < .001$ level. When considering subscales independently, the pattern of results supports Hypothesis 6 in that, overall, soldiers who report more favourable profiles report overall significantly lower levels of psychological distress.

The second outcome variable of interest in this study was individual intention to stay. Results show that intentions to stay in the CAF are significantly lower for the low CC/NC-dominant profile then all other profiles and significantly increases for each profile as the favourability of the profile increases ($p < .001$). These findings support Hypothesis 7 in that soldiers who exhibit more desirable profiles display to greatest intention to stay with the CAF.

Discussion

This study extends previous commitment research in a number of important ways. First, to date no other study has investigated the nature and implications of commitment profiles in a military operational context. As predicted, several profiles emerged with varying levels of each of the commitment mindsets. Second, as anticipated, factors such cohesion, perceived competence, and trust all seem to be related to the development of different commitment profiles. Furthermore, results suggest that differences between commitment profiles may have an influence on soldiers' future intentions with the CAF, and their self-reported symptoms of psychological distress. Lastly, the findings in this study suggest that the pre- and post-deployment commitment profiles of CAF soldiers are not similar despite their visual resemblance. The findings of this study are likely to have implications for both military and non-military organizations.

Commitment Profiles and Stability

As previously mentioned, one of the benefits of LPA is that all of the profiles that emerge from a sample are naturally occurring. A four-profile solution emerged for both the pre- and post-deployment samples. The data from both samples yielded a low CC/NC-dominant, a high AC-dominant, a weakly committed, and a moderately committed profile. This complement of profiles is interesting in comparison to previous research, especially those using military samples. For example, except for the high AC-dominant and moderately committed profiles found in the Meyer et al. (2013) study, the profiles were not replicated. Also of interest is the lack of uncommitted, or fully-committed profiles in this study. Seeing as both of the samples consisted of CAF military

personnel, it was anticipated that they would be more similar. However, there are a few reasons that can potentially explain the differences in profiles.

First, the targeted survey sample groups are different in several respects. The CAF sample obtained in the Meyer et al. (2013) study was drawn from "at risk" military occupations. In contrast, the soldiers who completed the surveys used in this study were either in the final stages of preparing for their upcoming deployment, or had just returned from a six to nine-month operational tour. Almost 60% of the respondents in Meyer and colleagues' sample belonged to army occupations. Although the exact proportion of army personnel in this study cannot be precisely determined due to the anonymity provided to participants, the fact that these members deployed on an army operation makes it more likely that the current sample included a much higher concentration of army personnel than the previous study.

This is an important point to consider seeing as beyond the large CAF umbrella, the CAF consist of three separate elements (i.e., army, air force, and navy), with various units that are made up of individuals who belong to various occupations. These various affiliations expose soldiers to a variety of different training, and workplace environments. These differences can potentially alter their experiences and in turn impact how they internalise their commitment foci potentially impacting the results as I discuss later in this thesis. For example, those who are deploying or deployed spend months training and working with the same group of individuals, often away from their families. Given the relationships that can form, they may experience CC as a social cost where they sense an obligation to their fellow soldiers hence the CC/NC-dominant profile. In contrast,

individuals who belong to distress occupations, as a result of the high turnover rates that may influence their ability to develop meaningful relations with peers, may view the cost of leaving the organization as an economical cost (i.e., CC-dominant).

Second, in their study, Meyer et al. (2013) discovered an uncommitted profile. Although this profile represented a small portion (e.g., 2.86% and 4.92%) of their split samples, it is completely absent from this study and likely for good reasons. Soldiers deploying overseas are subjected to a lengthy and demanding pre-deployment process (e.g. training, screening), thus it is likely that individuals belonging to this profile would have been removed from the task force by a number of means. First, although all soldiers are expected to deploy, uncommitted individuals who may not want to deploy can render themselves non-deployable by raising legitimate or fabricated issues during the screening process (e.g., physical health, mental health, or family limitations). Second, previous research has established that uncommitted individuals tend to display poor levels of performance and well-being in comparison to those who demonstrate more favourable commitment profiles (e.g., Gade et al., 2003; Meyer et al., 2012; Meyer et al., 2013; Wasti, 2005). Consequently, individuals who display poor performance, or who are physically, and/or mentally unwell are less likely to be selected for a deployment due to their inability to perform, cope with demanding situations that, in turn, can place their fellow soldiers at risk while abroad on operations.

Another point of interest is the absence of the AC/NC-dominant profile. This profile, which was discovered in the Meyer et al. (2013) study, is often associated with military samples. In the commitment literature, researchers have routinely described the

AC/NC-dominant profile as the "morally committed" group where individuals possess a desire (AC) to do the right thing (NC). Based on values that military organizations foster, it has been argued that the NC mindset is very relevant. In particular, at the core of the CAF professional ethos are the values of duty, courage, loyalty and integrity. These values are central to all that the CAF does, teaches and develops. Members are expected to live by these core values both in their professional and personal lives. In particular, it has been argued that NC likely gives rise to a soldiers' fostered sense of loyalty, and duty that which in turn arouses their sense of obligation, especially towards their responsibilities to the organization. When coupled with AC, especially in military settings, it is believed that NC has a synergistic effect of creating the sense of "moral imperative" that further feeds into the duty with honor ethos that is highly valued by military members. Thus, given the demands and danger that accompany a deployment, it was anticipated that the AC/NC-dominant profile would emerge. Prior to proposing why this did not occur, I will first discuss the possible reasons for the emergence of the high AC-dominant, and the low CC/NC-dominant profiles.

Perhaps, in cases such as an operational deployment, soldiers who display emotional attachment to the organization (high AC-dominant) deploy even when the mission is dangerous because they accept that this is a part of being a soldier in the CAF. It is likely that based on their emotional commitment to the CAF, they willingly accept their role to support the organizations' goals, missions and challenges despite the danger. While those exhibiting low CC/NC-dominant profiles, although seeming to lack emotional attachment to the organization (i.e., lower score on AC), deploy because of the

perceived social costs (CC) (e.g., loss of respect from their peers and supervisors) they feel an obligation to their peers to deployment. Although these interpretations are speculative in nature, they set the groundwork for future investigation of the potential mechanisms as to why some profiles emerged (i.e. low CC/NC dominant, AC-dominant) and others did and profile did not (i.e., CC-dominant, AC/NC-dominant). Based on the data that was available, commitment for the purposes of this study was investigated solely focused on soldier's level of commitment to the organization. This narrow focus may have possibly overlooked other important commitment targets that exist in the workplace, especially in a military environment as previously mentioned. For example, soldiers' commitment to their unit, their peers, and even their occupations are relevant in military culture. This is especially salient in army units where soldiers frequently refer to their unit affiliation as one's "regimental family". Regimental membership is a source of pride that is built into their military identity from the moment they completed their occupational training (e.g., Canada has approximately 4500 infantry soldiers who all get assigned to one of three infantry regiments). Had I investigated commitment to the unit, an important focus, I may have found that some individual experienced AC/NC-dominant profiles towards their unit, which in turn stimulated a feeling of indebtedness (i.e., low CC/NC-dominant) towards the CAF. Unfortunately, these data were not available for analysis.

Interestingly despite their similarities and evidence of configural invariance, structural invariance of the profiles across these samples was not supported. It should be noted that these surveys were completed between 2007 and 2011 while CAF was

engaged in high-intensity offensive operations. During this timeframe, there was a large resurgence of the Taliban and as a result CAF soldiers were continuously involved in combat missions. These combat missions continuously exposed soldiers to hostile environments that included firefights, improved explosive devices, roadside bombs, bombardment, and hostile acts. During the Afghanistan war, 158 soldiers and five civilians were killed, and countless others were injured. It is possible that the extreme conditions of the operational environment may influence how soldiers experience commitment to their organization. Another potential factor impacting the ability to provide evidence for the invariance of the profile solutions may be linked to the attrition that was experienced in the post-deployment sample. The post-deployment samples (N = 2365) is almost half the size of the pre-deployment (N = 4254). Despite the potential influences, failure to support configural or structural invariance indicates that, strictly speaking, the nature of these profiles is not the same across the two samples. Given these findings, it is clear that more research is needed to determine the actual source of this invariance.

Predictors of Commitment Profiles

Consistent with expectations, measures that assessed soldiers' psychological preparedness to deploy, successfully predicted commitment profile membership. As anticipated, the odds of belonging to more favourable profiles consistently increased as soldiers reported higher levels of operational preparedness and unit climate. Remarkably, whether considered in isolation or with all of the predictors, the strongest predictor of profile membership was the unit climate subscale. The unit climate subscale measures

perceptions of team cohesiveness, team morale, and one's confidence in their team. When considered individually, after unit climate, predictors with the highest OR that differentiated between the most favourable (high AC-dominant) and least favourable (low CC/NC-dominant) profiles were the family ready, and family support subscales. The common theme among these subscales is that they focus on emotional relationships, and one's sense of belonging. When all predictors were considered simultaneously, the second predictor accounting for the most unique variance was one's perception of self-readiness.

The HDO survey project does not include any measures that allow investigation of the potential underlying mechanisms that would explain how these predictors contribute to the formation of profile membership. However, similarities can be drawn between the psychological preparedness measures and the needs established in the SDT literature, in particular, the need for competence and relatedness. If this is the case, it is possible that soldiers who reported higher levels of pre-deployment psychological preparedness, experience more desirable commitment profiles, and do so as a result of their basic needs being met (i.e., competence, relatedness) and thus further support the findings of Meyer et al. (2012). These findings further emphasize the importance of exploring the relationship between the satisfaction of the basic needs as described by Ryan and Deci (2000) as an underlying mechanism for the development of commitment profiles.

Consequences of Commitment Profiles

Another goal of this study was to broaden the understanding of the consequences of the various commitment profiles. Although only a couple of outcomes could be evaluated using the HDO project data, they nonetheless enhance the understanding with respect to the possible influences of commitment profiles on individuals' intention to remain with the organization and their well-being in the face of extreme situations. As anticipated, soldiers' who experienced more favourable profiles reported lower levels of self-reported psychological distress. Findings were consistent across both samples. Additionally, those who experienced desirable profiles reported higher intentions to stay with the organization after their deployment. This pattern is consistent with previous research investigating the outcomes of commitment profiles both in military and non-military organizations (Gellatly et al., 2006; Meyer et al., 2012; Meyer et al., 2013; Wasti, 2005). As argued by Meyer et al. (2013), these findings provide further evidence that some profiles, such as the high AC-dominant profile, are superior to others with respect to organizational- and employee-relevant outcomes.

Unfortunately in this study, the emergence of the AC/NC-dominant profiles did not occur. Had this profile emerged I would have been able to compare this profile against the low CC/NC-dominant profile in this study. Based on previous research, it has been established that AC/NC-dominant profiles are associated with higher levels of intention to stay and psychological well-being both in military and non-military population (Meyer et al., 2012; Meyer et al., 2013; Wasti, 2005). Earlier, I discussed the combined effects of NC with CC where it may stimulates a sense of indebtedness to the

CAF that may influence individuals to deploy because of their sense loyalty to their unit or peers. Though this combined effect may be seen as a benefit to an organization trying to fill positions for an extremely demanding and dangerous mission, the benefits are shortsighted. Outcomes analysis suggest that those who experience indebtedness to the CAF as reflected in low CC/NC-dominant profiles, especially in the context of a deployment, report elevated levels of psychological distress and lower staying intentions. Previous research on CAF personnel in a deployed context demonstrates that higher scores on the K-10 translate to a decrease in self-rated performance (Blanc et al., 2013). Therefore, although speculative, the combined effect of NC with CC that drives soldiers to deploy may have long-term consequences for both the organization and the individual.

Strengths and Limitations

The present study had a number of strengths, including the large samples with data collected on two separate occasions. The study was also conducted under extreme conditions that allowed for a very strong test of the invariance of commitment profiles across samples. Finally, the study included more potential antecedent variables than has been typical in profile studies, as well as important outcome variables of relevance to the CAF and its members. Despite these strengths, the study had several limitations that need to be considered when interpreting the findings, and should be addressed in future research.

First, this study is limited by the samples. A known consequence of surveying soldiers who are preparing or returning from real-time operations is that they are not always available to complete surveys due to training, leave, or reassignment. Although

every soldier who deploys is given an opportunity to complete the survey, based on the sampling numbers and the estimated number of deployed soldiers throughout this timeframe, there are good reasons to suspect a low response rate (estimated to be less than 50%). This low response rate leaves open the possibility that a selection bias may apply, in that those who responded voluntarily to the survey may not be representative of the entire population of deployed soldiers and thus that one or more subgroup within the population may have been missed or underrepresented. For example, although it seems that there was no uncommitted personnel that deployed, it may be that uncommitted individuals simply did not participate in the survey project. Furthermore, the lack of matching data hindered the ability to assess commitment profile changes as a function of other variables of interest at the individual level.

Second, the data obtained only consisted of self-report measures and not corroborated by other sources. Despite self-reports being an acceptable source of data for commitment, psychological preparedness, psychological well-being and future intentions, they also introduce potential response bias. However, as described by Meyer and Morin (2015), by utilizing factor scores obtained during the CFAs in profile analysis, a degree of control for measurement error is obtained by giving more weight to items presenting lower levels of measurement error. As a result, response bias is not deemed to be a problem in profile analysis.

Lastly, variables of interest in this study were limited by the measures included in the HDO project. Although the data are rich with information and presents numerous opportunities to advance the currently literature, in particular the literature focused on

commitment profiles, most measures were developed by the organization for their internal use. Including established measures (e.g. self-readiness, cohesion, trust in CoC) in the project, especially those that could provide more insight into the underlying mechanisms, such as SDT, would assist in understanding the development of commitment profiles.

Practical Implications

While the findings in this study are limited with respect to the causal inferences that can be drawn, nonetheless they can provide valuable guidance primarily to the CAF in the management of soldier's commitment profiles. Moreover, they can also likely be generalized more broadly to include application towards employees of non-military organizations. First, although it may seem that an employee's willingness fulfills their workplace responsibilities, despite their lack of emotional attachment towards their organization, is nothing to worry about, the findings in this study suggest otherwise. In fact, this study suggests that fulfilling one's obligation towards their organization because of the fear of losing something they value (i.e., respect from their peers), is associated with negative outcomes such as higher levels of psychological distress, and lower intentions to remain.

In addition to these findings, consistent with previous research this study suggests that fostering a more cohesive and supportive work environment is related to profiles that higher levels of AC. While, research has consistently shown that NC and CC are both contextually impacted by the other two mindsets, thus far high AC has been reliably

associated with positive outcomes (e.g., well-being, retention) even when exposed to extreme situations such as a military deployment. Although speculative in nature, it seems that, in general, organizations that wish to stimulate more desirable profiles should focus not only on the highly committed, and AC/NC-dominant profiles that have been established in previous research but that in the face of extreme situations, AC-dominant profile is also associated with better work environments and self-reported outcomes.

Although the study design limits the ability to make causal inferences, the patterns of relations observed was generally consistent with the causal links predicted by theory. Consequently, until more research is conducted to address the causal relations, based on the strengths of this study, current findings might still be helpful in making recommendations to the CAF about how they can foster more desirable commitment profiles.

Direction for Future Research

In addition research conducted to address the limitations of the current study, as previously discussed there are other directions for future research that might have implications for both theory and practice, First, CAF researchers may want to reconsider the tracking mechanism they currently have in place in the HDO survey project. Of the samples obtained, the information from only 314 soldiers could be paired. Unfortunately, this number was not sufficient to run some intended statistical analyses and thus the matched data information could not be used. Improving tracking mechanism would allow for individual commitment profiles and other variables of interest to be tracked

overtime, thereby allowing the use of advanced analytical analysis such as latent transition analysis, and latent growth modeling that would allow the investigation of change trajectories that would provide a wealth of information.

Second, the inclusion of multiple commitment targets such as supervisor, unit, and peers would allow for a more in-depth understanding of the complex commitment felt by CAF personnel by virtue of their experiences while serving in the CAF. By gaining a better understanding of the commitment targets in the CAF and how they are experienced, researcher can recommend more effectively strategies on how the organization can foster the most desirable commitment profiles.

Third, the comparison of profile solutions across the two samples suggests that their profiles structures, specifically the levels on the profile indicators, differ. This suggests that the nature of the commitment profiles across the two samples are not the same. It is suspected that these differences may be attributed to the extreme conditions the soldiers were exposed to while on deployment or the attrition that was experienced in the post-deployment sample (i.e. the N is half the size of the pre-deployment sample). However, further research is needed to determine potential sources of invariance prior to making any conclusions.

Lastly, understanding the underlying mechanism that develops commitment profiles is also key to advising organizations on how to foster the most desirable commitment profiles. By investigating important constructs and including already

established measures (e.g., SDT needs measures), it is believed that this would contribute to a better understanding of how commitment develops and changes overtime.

Conclusion

In conclusion, the purpose of this study was to investigate organizational commitment profiles as it related to a deployed Canadian military sample. Although my study did not precisely replicate the profile structures obtained in previously military studies, the profiles that emerged as a result of this unique sample emphasized the complexities of the commitment construct and the importance of studying the three commitment mindsets together by way of commitment profiles. Additionally, I established that conditions in the workplace can, with a high degree of confidence, predict profile membership. Furthermore, I argued that the predictive variables of interest in this study were closely related to the basic needs as set out in the SDT, thus advocating for further research to advance this area. Consequences of commitment profiles in this sample were also explored and revealed that, consistent with previous research, those who display more desirable profiles experienced better outcomes. Lastly, although support for the invariance of commitment profiles across the samples was not provided, this study is one of the first to implement the systematic testing of profile invariance as means of determining whether profiles across samples are similar in nature. Although more research is needed to support these findings, especially given the sample in this study, the knowledge gained from this study will certainly make a contribution towards further understanding the benefit of continued research into the area of commitment profiles.

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Appendices

Appendix A: Organizational Commitment Scale

COMMITMENT

Please indicate your level of agreement with the following statements using the scale provided below.

	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
1.	I feel like “Part of the Family” in the CF.				① ② ③ ④ ⑤
2.	The CF have a great deal of personal meaning to me.				① ② ③ ④ ⑤
3.	I feel a strong sense of belonging to the CF.				① ② ③ ④ ⑤
4.	I feel “emotionally attached” to the CF.				① ② ③ ④ ⑤
5.	It would be too costly for me to leave the CF in the near future.				① ② ③ ④ ⑤
6.	I am afraid of what might happen if I quit the CF without having another job lined up.				① ② ③ ④ ⑤
7.	Too much of my life would be interrupted if I decided to leave the CF now.				① ② ③ ④ ⑤
8.	One of the problems of leaving the CF would be the lack of available alternatives.				① ② ③ ④ ⑤
9.	I do not feel any obligation to remain with the CF.				① ② ③ ④ ⑤
10.	The CF deserve my loyalty.				① ② ③ ④ ⑤
11.	I would not leave the CF right now because I have a sense of obligation to the people in it.				① ② ③ ④ ⑤
12.	I owe a great deal to the CF.				① ② ③ ④ ⑤

Appendix B: Unit Climate Scale

UNIT CLIMATE

The purpose of this section is to measure morale, cohesion, and other aspects important to military performance. Using the scale beside each question, please fill in the circle that corresponds with your level of agreement /disagreement with the given statement. If a question does not apply, please answer accordingly (N/A).

1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree

1.	In my unit, we have a shared system of beliefs, values, and attitudes (e.g., integrity, courage, loyalty, etc.) that are valued by and define members of the military.	① ② ③ ④ ⑤	
2.	In my unit, there is a collective enthusiasm and persistence in pursuing our assigned goals.	① ② ③ ④ ⑤	
3.	We 'stick together', which enhances our ability to achieve our assigned tasks.	① ② ③ ④ ⑤	
4.	I have confidence in my abilities as a soldier.	① ② ③ ④ ⑤	
5.	My immediate supervisor has effective leadership behaviours.	① ② ③ ④ ⑤	
6.	In the event of combat, I have confidence in my Commanding Officer.	① ② ③ ④ ⑤	N/A ○
7.	In the event of combat, I have confidence in the CSM/SSM.	① ② ③ ④ ⑤	N/A ○
8.	In the event of combat, I have confidence in my company commander.	① ② ③ ④ ⑤	N/A ○
9.	In the event of combat, I have confidence in my platoon/troop commander.	① ② ③ ④ ⑤	N/A ○
10.	In the event of combat, I have confidence in my section commander.	① ② ③ ④ ⑤	N/A ○
11.	In the event of combat, I have confidence in my platoon/troop warrant.	① ② ③ ④ ⑤	N/A ○

Appendix C: Operational Preparedness Scale

OPERATIONAL PREPAREDNESS

When I deploy…..										
	1 Strongly disagree		2 Disagree		3 Neither agree nor disagree		4 Agree		5 Strongly agree	
1.	…I am confident I will be able to carry out all assignments expected of me.							①	②	③ ④ ⑤
2.	…I am confident I will be able to respond effectively in a crisis situation without direct supervision.							①	②	③ ④ ⑤
3.	…I will feel confident performing basic operational skills, such as weapons handling, identifying explosives, NBCD, and first aid.							①	②	③ ④ ⑤
4.	…I am confident the personal kit issued will be suitable.							①	②	③ ④ ⑤
5.	…I am confident that the equipment I need to do my job will be available and serviceable.							①	②	③ ④ ⑤
6.	…I am confident that the equipment supplied will be suitable to do my job.							①	②	③ ④ ⑤
7.	…I am confident that my home unit will assist my family as required.							①	②	③ ④ ⑤
8.	…I am confident that my home unit will ensure that my family has appropriate access to the local Military Family Resource Centre (MFRC) and other local community agencies as required.							①	②	③ ④ ⑤
9.	…I am confident that my home unit will provide my family with appropriate contact information for both military and civilian agencies.							①	②	③ ④ ⑤
10.	…I am confident that my home unit will be able to determine the special needs of my family to ensure ongoing support.							①	②	③ ④ ⑤
11.	…I will worry about my family's financial position.							①	②	③ ④ ⑤
12.	…I will have confidence that my family will receive continuing support during my deployment.							①	②	③ ④ ⑤
13.	…I will be confident that my family will receive emotional support, when required.							①	②	③ ④ ⑤
14.	…I will have confidence in my family's ability to function effectively in my absence.							①	②	③ ④ ⑤
15.	…I will not worry about my family's safety and security.							①	②	③ ④ ⑤

Appendix D: Psychological Distress Scale

SIGNS OF STRESS

*In the **LAST FOUR WEEKS**, about how often…*						
1	**2**	**3**	**4**	**5**		
None of the time	**A little of the time**	**Some of the time**	**Most of the time**	**All of the time**		
1.	…did you feel tired-out for no good reason?			①	② ③ ④ ⑤	
2.	…did you feel nervous?			①	② ③ ④ ⑤	
3.	…did you feel so nervous that nothing could calm you down?			①	② ③ ④ ⑤	
4.	…did you feel hopeless?			①	② ③ ④ ⑤	
5.	…did you feel restless or fidgety?			①	② ③ ④ ⑤	
6.	…did you feel so restless that you could not sit still?			①	② ③ ④ ⑤	
7.	…did you feel depressed?			①	② ③ ④ ⑤	
8.	…did you feel that everything was an effort?			①	② ③ ④ ⑤	
9.	…did you feel so sad that nothing could cheer you up?			①	② ③ ④ ⑤	
10.	…did you feel worthless?			①	② ③ ④ ⑤	

Appendix E: Future Intentions Scale

FUTURE INTENTIONS

Rate your level of agreement with each of the following statements pertaining to your CF career intentions.

1 Strongly disagree	2 Disagree	3 Somewhat disagree	4 Neutral	5 Somewhat agree	6 Agree	7 Strongly agree

1.	I intend to stay in the CF as long as I can.	① ② ③ ④ ⑤ ⑥ ⑦
2.	I intend to leave the CF as soon as I become eligible for pension benefits.	① ② ③ ④ ⑤ ⑥ ⑦
3.	I intend to leave the CF as soon as I have completed my current terms of service.	① ② ③ ④ ⑤ ⑥ ⑦
4.	I intend to leave the CF as soon as another job becomes available.	① ② ③ ④ ⑤ ⑥ ⑦

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