

Running Head: SELECTING CONDUCT AFTER CAPTURE INSTRUCTORS

Selecting Conduct After Capture Instructors:
Validating the CAC Instructor Assessment Centre
and Examining the Potential Value of Emotional Intelligence as a Predictor

By
F. Aubrey Robertson

A Thesis Submitted to
Saint Mary's University, Halifax, Nova Scotia
in Partial Fulfillment of the Requirements for
the Degree of Master's of Science in Applied Psychology

August, 2008, Halifax, Nova Scotia

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Date: August 29, 2008



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Your file *Votre référence*
ISBN: 978-0-494-44663-8
Our file *Notre référence*
ISBN: 978-0-494-44663-8

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Acknowledgements

I would like to thank my supervisor, Dr. Arla Day, with whom my relationship is best epitomized by Felix Unger and Oscar Madison, the odd couple, for her knowledge, attention to detail, and persistence during this last year and a half. To Dr. Vic Catano whose constant calm demeanour and solemn intellectual capacities gave me reason to believe in the value of “higher education”. To Major John Johnston, who stepped into the breach at the eleventh hour, as the external, thereby reaffirming my belief in my military brethren, even the ones dressed in blue. To Dr. Steve Smith, the committee chair, whose calm, quiet, professional and friendly character gently guided the defence process. And the final member of the committee, Lieutenant-Colonel Damian O’Keefe, to whom I am forever indebted for his constant good cheer, his Newfenees words of encouragement, his insistence that I was capable of completing this task, and his belief in my abilities.

To the close friends with which I have been blessed from my time at Saint Mary’s, I thank you for your patience in my times of distress and doubt, and your persistent tutoring and reviewing of my efforts. To Mrs April Scheller, who keeps the department on track, Dr. Holmvall, Dr. Francis, and, in particular, the quietly brilliant Dr. Debra Gilin-Oore for their instructional guidance. To the Military Psychology and Leadership faculty of Royal Military College who adopted me in the final stages of this trek and provided invaluable support and advice. Thank you all for your hard work and patience.

Significantly, I am eternally grateful to one man without whom I would not have even commenced this charge, I could not have imagined completing this without his regular contact and phone calls: He is a mentor, the quintessential Officer and gentleman, a confidant, and a best friend, Commander Roger Girard.

Much closer to “home”, thank-you to my mom whose sage words of wisdom from my youth rang just as true today and my sisters who listened to my endless stream of griefs and anxieties with graciousness and sound counsel. Lastly, and most importantly, I thank my children, Jessica and Logan, for standing behind me and not pushing, but gently nudging their old-man during less than ideal times to see this through to completion.

Selecting Conduct After Capture Instructors: Validating the CAC Instructor Assessment Centre and Examining the Potential Value of Emotional Intelligence as a Predictor

By F. Aubrey Robertson

Abstract

August 29, 2008 Reliably and defensibly selecting people using tests imitating a job's duties is incorporated into standard Assessment Centres while combining psychometric testing with AC procedures increases AC predictive validity (Catano, et al., 2005; Terpstra, et al., 1999). This study examined the Conduct After Capture (CAC) Instructor AC's factor structure and its ability to predict CAC instructor course performance and two Emotional Intelligence (EI) measures' ability to predict CAC instructor course performance. The AC's validity ($N=124$) using a Principal Components Analysis failed to support the 11 hypothesized competencies, but supported a 4-component, methods-based structure. Components demonstrated low convergent validity and high discriminant validity. Secondly, a sample of 44 participants completed the Mayer-Salovey-Caruso EI Test (MSCEIT) and the Bar-On Emotional Quotient Inventory (EQ-i). This research suggests that the AC does not consistently assess constructs. However, the 4 (methods) components predicts course performance, after controlling for cognitive ability. Assessors' tendency to focus on methods raises concerns regarding AC construct validity. Future research should consider redefining competencies and examining a larger data sample and precise course measures.

29 August 2008

Selecting Conduct After Capture Instructors:
Validating the Conduct After Capture Instructor Assessment Centre
And Examining the Potential Value of Emotional Intelligence as a Predictor

In the search for the optimum employee, organizations seek methods or systems of selection that meet three conditions: validity, reliability, and legal defensibility. Additionally, however, although organizations continue to concern themselves with the selection conditions of the system, they also want to limit unnecessary person-hours in the coordination and management of any system, as well as the cost of its conduct. It is well documented that an ineffective system can result in legal and organizational problems (Hacker, 1996), including the potential failure of the organization in question (Catano, Wiesner, Hackett, & Methot, 2005). An effective system must successfully select the best candidate, meeting the three previously mentioned conditions and adhere to government guidelines. One such selection system is the assessment centre (AC).

Tools used in an AC, such as structured interviews, in-basket exercises, role plays, personality tests, and cognitive ability tests, are able to demonstrate validity, reliability, and legal defensibility (Gatewood & Field, 2001). The power with which these tools are able to achieve all 3 conditions, however, can depend upon the circumstances under which they are employed. That is, the validity of the various instruments is evident only under the appropriate conditions. Each tool within the AC selection framework bears its own strengths and weaknesses and ACs have been shown to be capable predictors of entry-level employment as well as managerial positions (Campbell & Bray, 1993; Cascio & Silbey, 1979; Dayan, Kasten, & Fox, 2002; Klimoski & Brickner, 1987; Sackett, 1987). However, the cognitive ability test has also been shown to accurately

predict job performance (Hunter & Hunter, 1984) and is a widely used entry-level selection tool (Catano et al., 2005) at a greatly reduced cost.

The AC remains an expensive tool, consuming many person-hours in its preparation, coordination, and conduct. For these reasons, authors such as Cascio and Silbey (1979) and Hinrichs (1978) argued that, although the AC showed “significant predictive validity over an 8 year period” (p. 599), that less expensive and more straightforward tools may be preferable. In this vein, Hinrichs (1978) noted that, “the assessment center may be an overly expensive and involved technique for doing so” (p. 600: i.e., an overly expensive system to select employees). This perspective is reinforced by Schmidt and Hunter’s (1998) review of 85 years of personnel selection research, in which they examined 19 separate procedures and found that general mental ability (or cognitive ability) was the most significant predictor of job performance. Acknowledging less expensive and equally effective selection systems such as cognitive ability then begs the question that Hinrichs (1978) asked with respect to employing ACs, “Why bother?” (p. 600).

The Canadian Forces currently uses an AC to select instructors for its Conduct After Capture (CAC) Instructor training program. Although the Knowledge, Skills, Attributes, and Other Factors (KSAOs) employed in the AC are used by several participating nations, the effectiveness of this selection instrument has not been fully examined. Therefore, in the current study, the psychometric properties of the CAC Instructor AC were examined in terms of the reliability, construct validity, and incremental predictive validity of its components. Additionally, in the interest of potentially strengthening an effective selection method, Emotional Intelligence (EI) was

examined to determine if it could provide further predictive value to the selection process.

Assessment Centres

The term AC refers to an approach to employee or applicant testing and selection, traditionally consisting of a suite of exercises designed to measure a set of personal characteristics (Thornton, 1992). In this capacity, it has been used as a formal process in which individuals' performances are evaluated using job-specific tasks. More precisely, the AC has been described as a managerial tool simultaneously employed by multiple assessors, incorporating multiple job related tasks that provide clarity on the best future job performer (Thornton, 1992; Thornton & Byham, 1982).

Typically, AC participants are involved in the completion of a range of exercises, that simulate the activities carried out in the target job, under the scrutiny of multiple and diverse assessors (Catano et al., 2005). Various combinations of exercises such as relating to people, resistance to stress, planning and organizing, motivation, adaptability and flexibility, problem solving, leadership, communication, decision-making, and initiative have been combined, and sometimes consolidated with other assessment methods such as psychometric testing and interviews, to assess specified abilities in individuals (Lowry, 1997). The premise of the process is that predicting the quality and proficiency of future job performance can be achieved by having the individual carry out a set of simulated tasks that reflect the future employment. Subsequently, the tasks, tests, and activities chosen for the AC have been based on a series of competencies; KSAOs necessary to do the job satisfactorily, determined through a job analysis (Lowry, 1997).

AC Development

In the 1930s, Henry Murray began the groundwork for ACs (Bray, 1982). The process he developed was subsequently used by the United States Office of Strategic Studies and then taken up by the private sector. In particular, the giant American Telephone and Telegraph Company began using assessment centres for management selection in 1956, followed by Standard Oil Ohio, IBM, Sears, and General Electric. Although similar in objective, differences arose between the United States and United Kingdom approaches. These differences stemmed from the United Kingdom's emphasis on group exercises with an appointed leader, group discussions, and long written exercises, whereas the United States format placed more emphasis on in-tray exercises, leaderless group exercises with assigned roles, and two-person role plays (Woodruffe, 1993). The result, however, was a more diverse selection of assessment approaches that can be employed in the same AC.

From its origins with the selection of potential leaders for the German and British Armies during World War 1 to its subsequent adoption by American Telephone & Telegraph to assess managerial potential (Catano et al., 2005), the AC has become a highly diversified and varied tool in myriad organizations, imbedding itself in the personnel selection toolbox. Since their expanded use with the War Office in the United Kingdom during the Second World War and the landmark American Telephone & Telegraph Management Progress study (Bray, Campbell, & Grant, 1974), ACs have undergone a plethora of changes and adaptations that have enhanced their status as a viable and legally defensible means of selecting applicants. Now in use with organizations from the military and government to the private sector, ACs employ as

many as 168 different dimensions as a weight-bearing tool in the selection of applicants (Bowler & Woehr, 2006).

Modern ACs have predominantly followed the aforementioned American format (Woodruffe, 1993), although some have chosen to employ aspects of both models (e.g., incorporating exercises of written essays and appointed leader tasks with role-plays and leaderless group discussions). This diversity of application has aided the rapid growth of the AC. Robertson and Makin (1986) reported that slightly more than one quarter of organizations who employed 500 people or more used assessment centres, whereas Mabey, Skinner, and Clark (1998) reported that in 1989 more than one third of companies employing over 1000 people used ACs. Additionally, as recently as 15 years ago, Boyle, Fullerton, and Yapp (1993) reported that 45% of organisations in the United Kingdom who responded to a survey on AC utility stated that they used ACs and that their AC usage was expanding. Armed with this information, it is estimated that AC use is most prevalent in the private sector and by larger organizations, with 65% of organizations greater than 1000 employees taking advantage of the AC's capabilities (Industrial Relations Services, 1997). This persistent and increasing application has continued despite less than encouraging research results with respect to the AC's construct validity.

Although the AC has firmly embedded itself in the psyche of corporations and organizations around the world as a legally defensible means of employee succession and selection (Sparks, 1988), it is not without its pitfalls. ACs which have repeatedly shown themselves to have satisfactory inter-rater reliability, predictive validity, discriminant validity, and face validity (Howard, 1974), have also frequently been found to suffer from

poor construct validity (Fleenor, 1996; Klimoski & Brickner, 1987; Sackett & Harris, 1988; Schneider & Schmitt, 1992). Subsequently, accusations that assessors may be measuring AC exercises rather than the competencies that they are meant to measure (Lance, Lambert, Gewin, Lievens, & Conway, 2004) have surfaced. Despite these difficulties, the AC remains one of the most prevalent tools available for selecting the optimum personnel for particular positions.

CAC Instructor Criteria.

In collaboration with Australia, New Zealand, the United States, and the United Kingdom, and under the guidance of the NATO Standardization Agreement (STANAG), Canada began to develop a program of theoretical and practical Survival, Escape/Evasion, Resistance, and Extraction (SERE) training (TN 2004-03). Training was closely monitored at all levels of the military training establishment and among the international partners to develop best practices. Researchers recognized that if training was to achieve its intended provision of inoculation to the conditions of captivity, without exceeding psychological and physiological safe bounds, in accordance with the conditions of the NATO Standardized Agreement on Survival Training (which lays down the requirements and obligations of a CAC instructor), that careful selection of trainers who could competently deliver all the facets of a CAC instructor's job was required. The list of requirements for a trainer include the ability to deliver theoretical instruction; deliver practical training; teach permissive and non-permissive survival; and organize, administer, and supervise survival training, including the production of training documentation (STANAG – 00, p.6). Therefore, the selection of CAC instructors needed

to be designed to assess these skills in conjunction with the abilities and other attributes that a superior instructor possesses.

In pursuit of an accurate and effective system for determining the KSAOs necessary to perform the duties of a CAC instructor, researchers from the Canadian Forces Director Human Resources Research and Evaluation completed a job analysis of instructors in the United States and United Kingdom (Johnston & Vanderpool, 2004). Effective and ineffective attributes were initially compiled in creating a list of six factors and necessary skills, abilities, and other attributes (competencies) that identified those applicants most closely reflecting the strengths of a CAC instructor (Johnston & Vanderpool, 2004). The competencies were subsequently revisited in 2005 and expanded to the final eleven (see Table 1), which constitute the determining factors in selecting a CAC instructor. As recommended by Cascio (1982), Harvey (1992), and Williams and Crafts (1997) researchers used multiple approaches to collect job analysis data, thereby achieving a concise and thorough guidance document.

Table 1

CAC Instructor AC Competencies and Definitions

Competency	Definition
Acting	Role plays different scenarios in a credible manner; employs creative imagination in achieving a credible role-play.
Conscientiousness	Demonstrates high level of persistence and motivation in goal directed behaviour despite adversity; completes work to meet and/or exceed the standard; punctual and accurate in maintaining timings; demonstrates honesty and trustworthiness

	and resists the temptation to act in an unethical or illegal manner; reliable and dependable
Adaptability	Adapts to novel, complex, or changing situations, remains versatile and understands the need for change.
Emotional Stability	Maintains emotional control and restrains from inappropriate actions (e.g., anger, violence) when placed in stressful situations; effectively and routinely employs coping skills (e.g., humour, exercise) to manage stress so it does not negatively impact performance
Self-Awareness	Is aware of own strengths, weaknesses, and biases, demonstrates insight into own emotions and how those emotions can influence their own and other's behaviour and perceptions; is able to reflect on past experiences and learn from them.
Confidence	Confidence in one's own abilities and actions; able to stand up for oneself and rationally defend own position, action or point of view when challenged; maintains a confident manner presenting information to a group of people.
Acceptance of Criticism	Is able to accept criticism from others without getting angry or defensive.

Competency	Definition
Interpersonal Skills	Projects a friendly/positive attitude when dealing with others, willingly uses appropriate attending behaviours (e.g., paraphrasing, appropriate body languages, and eye contact) when talking to others, understands another person's situation and motives; effectively and respectfully interacts with individuals of different backgrounds (culture, ethnicity, religion, family status, etc), personalities, attitudes, opinions and values; ability to appreciate and express the humorous.
Written Communication	The ability to record thoughts and observations accurately and concisely; legible presentation of written ideas in a clear and logical manner.
Oral Communication	Communicates in a clear and concise manner; engages interests of others; provides clear, accurate, and concise answers to questions.
Teamwork	Works effectively in a small team environment; cooperates with other team members to achieve a task.

Modified from Vanderpool, Girard, & Scholtz, 2005.

Selecting Conduct After Capture Instructors

The History of the Code of Conduct After Capture

Typically, KSAOs evolve from an examination of the job environment and, although this step is not a legal requirement of selection protocols, it is important that employment decisions be based on an understanding of the job (Sparks, 1988), thus providing clarity of roles and responsibilities in the position. Likewise, understanding the

diversity of the CAC environment provides transparency with respect to the evolution of CAC training and the competencies, which lend to defining the AC procedures.

Additionally, an understanding of the uniqueness of both the trainers and the trainees, which is imbedded in the military culture, and the idiosyncrasies of military detention provide selection and employment lucidity.

During the first stages of preparing troops who are at risk of capture, national war departments drafted codes of conduct, which are sets of guidelines and expectations designed to direct personnel in the event of detention. In determining the form and intent of the codes, researchers discovered that the prisoner of war's most demanding predicament was the individual's struggle to "survive with honor" (Biderman, 1956, p.7). Surviving with honour is a concept that provides a framework in the form of a set of guidelines outlining a soldier's duty during internment, thereby allowing them to behave honourably. Therefore, based on the rules of conflict outlined in the Geneva Conventions, codes of conduct were designed to provide national direction to a serviceman or servicewoman as to their behaviour and responsibilities in captivity. The code of conduct explained obligations with respect to attempts at escape; continued compliance/obedience to the chain-of-command, including the role of senior personnel from allied forces being held in the same location; and a detainee's expectations with respect to treatment from a captor (Porter, 1983).

However, enlightened by the reported experiences of Prisoners Of War from the World Wars (Nagata & Takeshita, 2002; O'Donnell, Cook, Thompson, Riley, & Neria, 2006), the Korean War (Segal, 1957; Segal & Catron, 1972), and the Vietnam War (Stegner, 1973), nations in compliance with the guidelines of the Geneva Conventions

came to realize that all the participants in a conflict would not be so acquiescent of the Geneva Convention's honourable and humanitarian intent for fair and reasonable treatment, and some would go so far as to apply inhumane methods of handling prisoners under their care (Engdahl & Fairbank, 2001; Scott, 2003). Historical and recent events (e.g., Canadian troops in the Japanese internment camps of World War II; the treatment of United States soldiers captured in Operation Gothic Serpent in Mogadishu in 1993; the holding of civilians in Iraq in 1990) have demonstrated both a propensity to cruelty against detainees (Fiske, et. al., 2004; Hooks & Mosher, 2005; O'Donnell, Cook, Thompson, Riley, & Neria, 2006; Peel, 2004) and a shift in the politically-based nature of who and why people are captured and detained. Hostile, volatile, and unpredictable types of captivity incidents have advanced the belief that preparing soldiers for the potentiality of captivity under unreasonable conditions needs to take on greater significance within the military training establishment.

Interest in the ability to withstand periods of internment and possible physical and/or psychological hardship heightened when Colonel James "Nick" Rowe returned to the United States after 62 months in North Vietnamese captivity (Rowe, 1971), where he had endured torture and abuse. Prompted by Nick Rowe's experiences, the results of research on conditions experienced during the Korean conflict, and further reports of internment circumstances from other returning Vietnam Prisoners Of War, the United States recognized that the time for more than just a set of guidelines had arrived. Work began in earnest on developing a practical training program as had been prescribed by the Report of the Working Group on Survival Training (Biderman, 1956). Furthermore, these revelations verified concerns that military personnel required more than just the standard

theoretical training in the expected aspects of captivity, such as isolation, detention, and social-deprivation. Subsequently, a pool of research evolved with respect to practical survival training based on the effects of an individual persisting in a dynamic and demanding environment that exceeded the reasonable conditions outlined in the Geneva Conventions.

Psychological Effects of Captivity

Preparing for captivity represents one of the most potentially momentous events of a serviceperson's career (Stenger, 1973). Survivors of prisoner of war experiences have come from a variety of backgrounds, situations, and demands (Engdahl & Fairbank, 2001; Segal & Catron, 1972); however, despite this variety in occurrences, there tended to be prevailing similarities that caused differences among their reported levels of stress and post-captivity psychological well-being. Those common threads were found to be the individuals' sense of loss of control (Jessen, 1995; Wilson & Raphael, 1993; Wilson, 1995), their ability to predict the eventual outcome of the situation, their perception of control of their environment, and their persistence to survive, which have been collectively labelled resilience (Agaibi & Wilson, 2005; Bartone, 1999; Jessen, 1995).

Without question, all captives have experienced initial startle, panic, disbelief, and/or denial of the reality of captivity, as well as a deep sense of vulnerability and helplessness throughout their internment (Jessen, 1995). Individual coping mechanisms, however, have mitigated potential negative outcomes through self reassurance that the experience would end, communication with others, physical fitness routines, personal hygiene rituals, religious beliefs, and positively reminiscing about previous life events. These coping mechanisms exist to different degrees and were utilized differently

according to previously established personal levels of resilience. The level of ability to utilize coping mechanisms has been shown to be linked to post-trauma individual well-being (Jessen, 1995; Saunders, Driskell, Johnston, & Salas, 1996) and the creation of varying levels of optimism during internment, which supports the rationale to instil these abilities in advance.

Specifically, people being detained must possess the skills to not only physically survive, but they must have a belief in their capability to survive and return home feeling satisfied that they have done their duty, militarily referred to as “surviving with honour” (Jessen, 1995, p. 4). In order to have surmounted detention conditions, captives must have believed that they behaved with dignity and loyalty while resisting physical and psychological hardship and exploitation, a capability seen to stem directly from a sense of self-efficacy (Mitchell, 1999). Because exposure to captivity can ultimately result in “severe trauma for extended periods” (O’Donnell et al., 2006, p.860), thereby negatively impacting on an individual’s belief in themselves, sufficient personal resources must exist to prohibit trauma’s damaging effects during the event.

Overcoming post-event trauma is partially a facet of the individual’s coping mechanisms and partially linked to their level of resilience (Agaibi & Wilson, 2005; Campbell-Sills, Cohan, & Stein, 2006) and hardiness (Bartone, 1999; Kobasa, Maddi, & Kahn, 1981); however, during capture, resilience and hardiness are also believed to have a positive effect on self-efficacy and, ultimately, on an individual’s belief in their ability to return from captivity with honour. The degree of optimism or pessimism a survivor demonstrated during captivity was found to be greatly affected by resilience which had been established as a result of learned behaviour (Baltzel, 1999; Jessen, 1995). The key

variables in predicting whether a survivor demonstrated optimism or pessimism was their ability to control their environment and their perceived belief in the predictability of their survivability (Jessen, 1995; Parkes, 1994). Because the goal of CAC training is to instil an increased sense of confidence in one's abilities through familiarity and success in training via stress inoculation (Altmaser, Leary, Halpern, & Sellers, 1985), it results in improved self-efficacy, resilience, and hardiness. Exposing individuals to an ostensibly overwhelming situation in which they seem to have no control, but are guided to success, results in the development of immunity to (or belief in their strength to overcome) what could otherwise have become a hopeless situation (Jessen, 1995).

CAC Training

In Canada The Code of Conduct After Capture for the Canadian Forces (Ottawa: DND Canada, 2005) was promulgated and emulates the codes of allied nations in prescribing what actions participants are to perform if captured or detained during a conflict. For example, the intent of the international conventions is to ensure the humane treatment of those who have laid down their arms or have been captured as a result of combat. Thus, Geneva Conventions provide guidance for a detaining power by prohibiting violence against Prisoners Of War, personal indignities, and extra-judicial trials. At the individual level, the code of conduct provides guidance for disclosure and behaviour while held under those conditions. However, the designers of the policy recognized that, despite these protective measures, detainees might still be subjected to conditions harsher than warranted or expected. On that premise, the need to safeguard Canada's military personnel against such hardship was acknowledged and Canadian CAC training evolved with a goal to guiding trainees through the evolution of survival skills

which they could use to return home with their honour and dignity intact (Biderman, 1956).

In addressing a requirement for personnel to overcome captivity conditions, the military determined that soldiers needed to be provided with specific skills and resources, beyond the provision of a set of rules (i.e., a code of conduct), that would allow them to return home from captivity as physiologically and psychologically healthy as possible, and with their dignity intact (Steffian, Bluestein, Ogrisseg, Doran, & Morgan, 2006). In order to provide this unique training, CAC instructors are trained in the application of Stress Inoculation Theory as a means of introducing personnel to situations, dilemmas, and stressors that they may encounter in captivity. During the training process, CAC instructors explain the learning objectives that will allow potential detainees to meet the physiological and psychological hardships encountered in detention. Hardships such as intimidation, isolation, self-incrimination, self doubt, and atypical living conditions (reduced/limited diet, poor or no sleep, forced inactivity) are introduced and the CAC instructor then translates those lessons into analogues for learning. Training is uniquely and dynamically designed to take advantage of each serviceperson's particular strengths and weaknesses and the level of need for preparation (i.e., those at higher risk of capture receive a more specific and detailed level of training) following a behavioural science approach (Friedland & Keinan, 1992).

CAC training consists of guiding trainees through lectures and practical exercises in which they are made aware of the specifics of the Code of Conduct, learn the type and degree of threat that could be encountered in their specific area of operations, discuss the likelihood of capture, and explore potential conditions of capture. If deemed necessary,

they are then introduced to psychological/stress coping mechanisms (Doran, Hoyt, & Morgan, 2006) and allowed to develop confidence in their ability to apply the coping mechanisms in a practical training environment. Skills developed with Stress Inoculation Theory instil levels of immunity to the anticipated hardships and teach positive self-belief with a three phase approach: 1) Conceptualization (develop a comprehensive understanding and reliable picture of the situation for which they are preparing); 2) Skills acquisition and rehearsal (practice problem-solving activities using coping behaviours); and 3) Application and follow through (graded exposure) (Meichenbaum, 1977; Saunders, et. al., 1996).

Soldiers need the appropriate predeployment training to learn how their own strengths and weaknesses could manifest in an environment of captivity that exceeds their personal expectations or understanding of captivity (Mitchell, 1995). Military personnel need to know how far they can persist in such hardship and where they would be most likely to experience doubt and/or difficulty. The model that makes this possible is that of the aforementioned Stress Inoculation Training (McKay, Davis, & Fanning, 1981; Meichenbaum & Deffenbacher, 1988); which identifies individual strengths and weaknesses to help each soldier better understand how and why they would react in a particular fashion. In this manner, a trainee is introduced to a previously conceived insurmountable condition and guided through it successfully, thereby helping them understand how to better cope and endure abnormal living conditions.

Train the Trainer

A critical precursor to the actual training has been the selection and training of the instructors who guide students through the acquisition of the skills necessary for survival

during internment. Identifying each trainee's personal strengths and weaknesses from within their unique personality and skill set, and developing the individual soldier's confidence relies upon the instructor's ability to adapt the learning and his/her instructional techniques to the trainee. It is the development of individual confidence that gives soldiers the ability to perform their duties in battle, including combating the efforts of a detaining power (Mitchell, 1999). CAC instructors must therefore possess more than just the ability to deliver a lecture or present new material. The CAC instructor must be able to understand how practical training is individually important, how each soldier adapts during the training, how to tie the soldier's strengths and weaknesses to their survival techniques, and how to expose trainees to safe yet effective levels during practical training.

There are, however, potentially stressful and damaging effects associated with training of this nature (e.g., possible impairment to learning; Lazarus, 1966; Vroom, 1964; instilled fear or enhanced emotional sensitivity; Haggard, 1949; Janus, 1971; decreased self-confidence and a created attitude of despair; Kern, 1966). Therefore, careful consideration has to be given to the selection of instructors responsible for delivery of training. Ultimately, the CAC instructor has to clearly understand the individual trainee and be able to take him or her to the point of failure and then pull them safely back, thereby instilling success in an excessively demanding situation. In this sense, the CAC instructor must have a degree of empathy, the ability to perceive the trainee's emotional state, and an understanding of interpersonal conditions. Therefore, identifying potential instructors who are capable of this task is of critical importance. Training of the aforementioned nature has been found to exceed the standard perimeters

of an average Canadian Forces instructor's responsibilities, necessitating careful selection from among applicants who will be capable of employing the appropriate tools in the appropriate fashion. Ensuring the right people are selected to perform this unique and demanding training has been achieved through the use of ACs.

CAC Instructor Selection and Emotional Intelligence

In conjunction with the examination of the AC's psychometric properties, an exploration to potentially strengthen the AC's evaluative worth is considered in this research. An assessment of Emotional Intelligence (EI) may be effective in the selection of CAC instructors. Many researchers believe in the power of EI tests to discriminate distinct constructs overlooked by the current battery of tests, such as those measuring general intelligence (Derksen, Kramer, & Katzko, 2002), or its ability to provide additional variance not accounted for in traditional Big Five personality measures (Petrides, Pita, & Kokkinaki, 2007).

However, EI has also garnered proponents with differing views regarding whether or not the construct even exists (Derksen, Kramer, & Katzko, 2002; Landy, 2005), as well as those who have described it as either an ability (Salovey & Mayer, 1990) or a trait (Bar-On, 1996). EI has been purported to be a predictor of work satisfaction as well as one's future outcomes in life (e.g., Bar-On, 1997; Boyatzis, Goleman, & Rhee, 2000; Goleman, 1995; Goleman, 1998; Mayer & Salovey, 1997; Mayer, Salovey, & Caruso, 1999), although the empirical support for these claims has been lacking. Likewise, there is some question as to the actual definition of EI and how it can be measured (e.g., Davies, Stankov, & Roberts, 1998; Newsome, Day, & Catano, 2000; Petrides & Furnham, 2000), with a multitude of measures now being available to researchers and

practitioners (e.g., Bar-On, 1997; Mayer et al., 1999; Shutte, Malouff, Hall, Haggerty, Cooper, Golden, & Dornheim, 2000), despite the absence of empirical support for their application.

EI Evolution and Models.

Although the birth of EI is somewhat unclear, it may have been considered in work as early as Darwin's explorations of the concept of survival and adaptation through emotional expression (Soussignan & Schaal, 2005). The concept of an intelligence other than the acknowledged model of cognitive intelligence, however, was first introduced by Thorndike (1920). Thorndike (1920) suggested that people possessed a social intelligence that was distinct from mechanical and abstract intelligence. Within Thorndike's (1920) definition of social intelligence was the idea that social intelligence included an ability to understand and manage emotions. This concept opened the floodgates to speculation and research, and helped guide theoretical development of EI (e.g., Brown & Anthony, 1990; Cronbach, 1960; Schneider, Ackerman, & Kanfer, 1996; Thorndike & Stein, 1937).

The concept of EI continued to evolve when Weschler (1943) suggested that certain non-intellective factors were functioning to affect intellectual behaviour and that the definition of intelligence could not be complete until those unidentified factors were captured. In the late 1980's and early 1990's the concept of a separate intelligence became more popular as Gardner (1983) further expounded on the concept. Gardner (1983) suggested that multiple intelligences included the aspects of an Interpersonal Intelligence (i.e., the capacity to understand the intentions, motivations, and desires of other people) and Intrapersonal Intelligence (i.e., the capacity to understand oneself, to appreciate one's feelings, fears, and motivations). Furthermore, he suggested that the

traditional concepts of intelligence failed to fully explain human intelligence (Retrieved February 21, 2008 from <http://www.infed.org/thinkers/gardner.htm>).

Interestingly, Mayer, Salovey, and Caruso (2004) point out that early references to the current context of emotional intelligence were vague in their context, having been referenced in a literary criticism, in research on the development of children, and in a 1986 PhD dissertation. Ultimately, EI's current level of popularity resulted from the 1990 release of the best selling book *Emotional Intelligence: Why it can matter more than IQ* by Daniel Goldman. Subsequent research became increasingly more controversial as researchers grew more determined to find a resolve to the EI dilemma. The result of all this activity, however, has been an increased application by practitioners generated by notice from the corporate community (Murphy, 2006). Of interest for the following research are two of the more popular, and thoroughly researched, concepts of the EI construct: 1) The ability-based Mayer Salovey Caruso Emotional Intelligence Test and 2) The trait-based Bar-On Emotional Quotient intelligence.

Ability-based EI. As an ability-based construct, Salovey and Mayer (1990) have suggested that EI encompass' an individual's ability to perceive emotions in themselves and others, generate (or facilitate) emotions for mental processes, understand and reason about emotional information, and manage emotions through personal receptiveness in one's self and others. Using these factors, attempts have been made to identify and define EI with unique criteria for a new construct of intelligence (Mayer & Salovey, 1997). In this fashion, EI is seen as a process whereby individuals take in the cues and signals afforded by emotions and process these to make sense of and navigate their social environment (Salovey & Grewal, 2005).

The ability-based definition of EI presumes that individuals have a capacity, either innate, developed, or a combination of the two, which allows them to perceive their emotional environment and respond to it at various levels depending upon their individual stage of development (Salovey et al., 2005). The result of these varying levels of ability is that a more developed individual EI capability can then be employed to a wider extent thereby affecting other aspects of cognition, the degree of development is evidenced in the individual's adaptive behaviours (Salovey et al., 2005). The four specific types of ability in this model are defined by Mayer et al. (1997) as:

- 1) Perceiving emotions: the ability to detect and decipher emotions in faces, pictures, voices, and cultural artefacts - including the ability to identify one's own emotions. Perceiving emotions represents a basic aspect of emotional intelligence, as it makes all other processing of emotional information possible.
- 2) Using emotions: the ability to harness emotions to facilitate various cognitive activities, such as thinking and problem solving. The emotionally intelligent person can capitalize fully upon his or her changing moods in order to best fit the task at hand.
- 3) Understanding emotions: the ability to comprehend emotion language and to appreciate complicated relationships among emotions. For example, understanding emotions encompasses the ability to be sensitive to slight variations between emotions, and the ability to recognize and describe how emotions evolve over time.

- 4) Managing emotions: the ability to regulate emotions in both ourselves and in others. Therefore, the emotionally intelligent person can harness emotions, even negative ones, and manage them to achieve intended goals. (Mayer et al., 1997)

The Mayer Salovey Caruso Emotional Intelligence Test (MSCEIT) proposes to tap the ability of EI by testing a series of emotion-based problem-solving items (Salovey et al., 2005). Similar to cognitive intelligence tests, the MSCEIT taps into each of the four types of ability and provides scores for each as well as a total EI score.

Trait-based EI. On the other hand, the trait-based concept of EI, capsulated in the Bar-On EQ-i model, emphasises interpersonal functioning through an awareness and understanding of one's own emotions, intrapersonal functioning (skills) through an awareness and understanding of other's emotions, adaptability through flexibility and changeability of one's own feelings, stress management through one's coping with stress and control of personal emotions, and general mood through staying optimistic and the expression of positive emotions (Bar-On, 1996). According to Bar-On (2006), EI is developed over time and can be improved or taught through the use of training or therapy (Bar-On, 2006). The author further suggested that individuals with higher levels of EI attend to the demands and stressors of the environment more effectively and are subsequently more successful in their interactions. Conversely, a low degree of EI will result in emotional problems or a lack of success.

In particular, Bar-On (2006) suggests that those low in the specific domains (subscales) of stress tolerance, impulse control, reality testing, and problem solving experience more significant problems coping with their environment. Bar-On (2006) also

proposed that it is the combination of EI and cognitive intelligence that constitute an individual's general intelligence. It is then through the accurate measure of these two facets that a determination of an individual's potential success in life can be predicted. The measure employed, and developed, by Bar-On is a self-report survey that purports to measure emotional and social intelligence. Rather than measure cognitive capacity or personality traits EQ-i measures the mental ability to successfully navigate environmental stresses and strains (Bar-On, 2006).

CAC Instructors and EI

The particular stressors of CAC training require that instructors have effective coping mechanisms, be able to readily accept criticism, be self-confident, and have a honed sense of empathy (Johnston & Vanderpool, 2004). There is some evidence that people higher in EI levels have a tendency towards advanced degrees of emotional well-being, including the maintenance of a positive mood and high level of self esteem (Schutte, Malouff, Simunek, McKenley, & Hollander, 2002). Evidence of the connection between self esteem and criticism (Meagher & Aidman, 2004), self esteem and coping mechanisms (Clements, Sabourin, & Spiby, 2004), mood and empathy (Nezlek, Feist, Wilson, & Plesko, 2001) suggests that instructors with higher than normal levels of EI will persist in times of difficulty or will exercise appropriate levels of empathy when conducting training. EI has also been linked to an ability to reduce stress in some individuals, particularly aiding those who may be exposed to overwhelmingly stressful situations (Gohm, Corser, & Dalsky, 2005), conditions found in the preparations of personnel for combat (Friedland et al., 1992).

Johnston and Vanderpool (2004) identified the need for CAC instructors to demonstrate an ability to interpret non-verbal communication and monitor the physical and mental health of trainees. Additionally, Johnston et al. (2004) reported that emotional stability is a critical element of a CAC instructor's performance and cited definitional facets provided by Catano et al. (2005), including the reflecting of a calm, relaxed, approach to events, situation or people, as key to emotional stability. Furthermore, emotional ability is separately defined from cognitive ability and is described as being related to how easily people can be trained, and how well they adjust and solve problems (Catano et al., 2005). These descriptions of EI and cognitive ability highlight the dissimilarities, and therefore, the incremental evaluative value of EI over cognitive intelligence.

Although opposing views can be found in the definitions of EI provided by Salovey et al. (1990) and Bar-On (1996), it is immediately apparent that a connection exists within either construct that has implications for CAC instruction and training. As demonstrated by the job analysis and resulting competencies, a CAC instructor must be able to perform under extremely emotionally arduous and dynamic conditions (i.e., Adaptability: The ability to adapt to changing situations, remain versatile, and be mentally agile; Vanderpool et al., 2005), while maintaining a positive demeanour (i.e., Emotional Stability: Demonstrate discipline in managing one's own behaviour ensuring appropriateness of actions and reactions, and maintaining emotional control and restraint; Vanderpool et al., 2005).

Furthermore, an instructor's ability to adapt to the CAC instructional environment with respect to a client's emotional state must be clear and immediate (i.e., Emotional

Stability and Interpersonal Skills: ability to understand another person's situation, feelings, and motives; Vanderpool et al., 2005); and in this same vein, CAC instructors have to be able to perceive and manage their own emotional output while interpreting and managing the client's emotional feedback equally effectively (i.e., Self-awareness: Demonstrate insight into own emotions and an understanding of how emotions influence own and other's behaviour and perceptions; Vanderpool et al., 2005).

People high in EI are reportedly quicker at recognizing others' moods and more sensitive to mood affecting incidents (Petrides & Furnham, 2003). Having this ability to recognize, and therefore, respond more rapidly to an emotionally charged situation would enhance the instructors' ability to ensure that the trainee receives the optimum opportunities to develop their skills with minimum negative effect. In the CAC environment, the capacity to be empathetic is a necessary trait when conducting training (Sjöberg, 2001) because stress levels are heightened for both the trainer and the trainee beyond those of the normal training atmosphere. Subsequently, if an instructor is expected to respond to the heightened emotional state of the trainee it is imperative that they be able to recognize that such a situation exists. Ultimately, acting empathetically to a heightened emotional state of another person is inherent in one's ability to perceive and interpret the requisite emotions, which is achieved by those of higher EI (Mayer, DiPaolo, & Salovey, 1990).

Summary and Hypothesis

Although in its early stages within Canada, the CAC Instructor AC has been touted as an invaluable asset in the process of selecting and training CAC staff. ACs have traditionally demonstrated an incremental predictive validity beyond that of a cognitive

test (Krause, Kersting, Heggstad, Thornton, & George, 2006) and the results of cognitive and personality testing (Lievens, Harris, Van Keer, & Bisqueret, 2003).

However, a thorough examination of the reliability and validity of the selection process has yet to be completed with the CAC Instructor AC. If the CAC Instructor selection procedure is to be considered a reasonable and effective method of selection, it must be a valid, reliable, legally defensible, and cost effective process. Therefore, validation of the CAC Instructor AC is necessary to avoid potential legal and/or military administrative challenges regarding selection and training (Hacker, 1996).

Catano et al. (2005) noted that AC design and implementation is dependent upon the use of assessment techniques that are related to the job analysis employed by multiple, well-trained assessors. Additionally, multiple different types of job-related simulations must be employed to obtain an accurate score for each competency (Sparks, 1988). However, the psychometric properties of the AC must be examined to ensure that the assessment techniques measure the intended constructs in a reliable and valid manner. Therefore, the relationship among the measures will be examined to determine the correlations.

For the selection of CAC instructors, AC exercises were developed that reflect the performance requirements of CAC training and employment in light of the competencies. Regularly scheduled ACs employ CAC Subject Matter Experts and trained assessors from diverse backgrounds and of varied individual traits. Candidates are selected for AC attendance based on the results of a preliminary interview by a military human resource specialist (i.e., a Personnel Selection Officer) who is trained in assessment and selection, and on their aptitude test score (i.e., Canadian Forces Aptitude Test). Each AC

culminates in a coordinated discussion of results, and selection decisions are based on participants' final scores. Because tasks used at the AC were developed from a job analysis that consisted of input from Subject Matter Experts and selection specialists the AC should reflect the 11 factors as determined by the job analysis. Therefore, it is hypothesised:

Hypothesis 1a: The CAC Instructor AC will demonstrate 11 factors/components, based on the 11 competencies.

Hypothesis 1b: These 11 factors/components will demonstrate high internal reliability.

Hypothesis 2a: Scores on the parallel competencies will demonstrate consistency across the methods of assessment, such that there will be high correlations among the same competencies across the different methods (i.e., convergent validity).

Hypothesis 2b: Scores on the parallel competencies will demonstrate weak or nonsignificant correlations with dissimilar competencies, even when measured with the same method (i.e., discriminant validity).

A situation whereby the AC suffers from common method variance would result in discriminant validity coefficients being higher than convergent validity coefficients indicating that there is no differentiation among the 11 competencies. If this situation arises, the AC may suffer from an absence of construct validity.

Despite the proclaimed effectiveness with the selection of CAC Instructors, the effectiveness of ACs remains unclear with varied results among psychometric examinations due to the mixed construct validity outcomes (Fleenor, 1996; Klimoski et al., 1987; Sackett et al., 1988; Schneider et al., 1992). The question as to whether the

CAC Instructor AC is effective in selecting the strongest candidates is yet to be answered. Therefore, scores on the AC will be examined in conjunction with the results of the CAC Instructor's course to determine the accuracy of selection decisions based on the AC scores.

Hypothesis 3a: AC attendees' overall standing on the CAC instructor training course will be correlated with their overall final results on the CAC Instructor AC. That is, scores on the 11 competencies will be positively associated with their success (i.e., Pass) on the CAC Instructor course.

Hypothesis 3b: The correlation among the competencies and CAC Instructor training course success will remain significant even after controlling for the effects of the Canadian Forces Aptitude Test.

Given the particularly demanding role of CAC Instructors, they must be able to maintain their composure and resist the hardships of stressful situations, as well as maintain control when delivering training, which may involve physical contact and the infliction of "simulated punishment"

(http://www.cfsuo.forces.gc.ca/csss/pdev/docs/CACI_CANFORGEN_170-06.txt). In order to ensure that the appropriate environment is created for training (i.e., one that involves positive emotional conditions), training coordinators must select individuals who have the strongest abilities to induce lateral creative thinking, positive morale, amity and support of others, and reduced apprehension regarding the training (Tran, 1998). Therefore, effective instructors must demonstrate the greatest capacity for control and perception of emotional responses and conditions, while maintaining the ability to create

the appropriate environment. Therefore, successful candidates should achieve higher scores on the EI scales and results should be positively correlated with EI scores.

Hypothesis 4: Scores on the EI measures will be associated with success (i.e., Pass) on the CAC Instructors course.

Method

CAC Selection and Training: Procedures

In order to become a qualified CAC Instructor, Canadian Forces personnel applied for selection, training, and employment in a three-step process: 1) CF personnel made application to the CAC Instructor program, and were evaluated by a pre-screening committee, 2) applicants who were selected attended the CAC Instructor AC, and 3) applicants who passed the CAC Instructor AC attended the CAC Instructor course. Therefore, data pertaining to the AC validation were collected in the same fashion for all subjects (i.e., application files were reviewed by a pre-screening committee, selected candidates attended the AC, and those successfully selected at the AC attended the CAC instructor course).

Step 1: Pre-Selection

In step 1, candidates completed and submitted an application file through their chain-of-command (i.e., supervisory chain). The application file included a police background check, medical examination results, fitness test results, and supervisor's recommendation/assessment. The consolidated material of the application file was forwarded to the local Base Personnel Selection Officer who reviewed the file for completeness, and coordinated an interview and a request to national headquarters for the applicant's Canadian Forces Aptitude Test results or, when necessary, administration of

the ability test. Upon completion of the Personnel Selection Officer interview and receipt of the ability test results, the complete file was reviewed by an initial pre-screening board.

The pre-screening board utilized: 1) the results of the Personnel Selection Officer semi-structured interview score out of 90, 2) the applicant's results on the cognitive ability test (i.e., the Canadian Forces Aptitude Test), and 3) the results of the background/security check, the medical examination, and the fitness test to select the top individuals for attendance at the CAC Instructor AC. There was no predetermined "cut-off" score for selection to attend the AC; the number of applicants invited to attend was based upon the scores of the particular group of applicants and the resources available to the AC coordinator (number of assessors, size and booking duration of facilities, amount of time to conduct AC) to a maximum of 45 individuals.

The background check, medical examination, and fitness test were not employed as part of the ranking process, only to identify areas of potential concern and/or selecting out. Scores from the ability test and the Personnel Selection Officer interview were compiled and rank ordered. Applicants with the highest scores, precluding potential problems identified by the background check, the medical examination, and the fitness test were invited to attend the CAC Instructor AC. Demographic and applicant details were not tracked for the initial selection step, therefore, identification of participant numbers and demographic details were limited to those individuals attending the AC.

Step 2: AC Attendance

The CAC Instructor ACs were conducted between 2005 and 2008 (inclusive) for a period of up to three weeks during the Spring of each year. ACs consisted of up to 6

separate two-day serials with up to 9 attendees per serial. Attendees completed several standardized tests, a structured interview, role plays, an oral presentation, a written exercise, and a teamwork exercise. Assessment teams consisted of two assessors (i.e., A Subject Matter Expert [a qualified CAC Instructor] and a Personnel Selection Officer) that conducted evaluations during each of the stands, or methods, used to measure the competencies: Assessment teams were coordinated to ensure that a different team assessed different AC participants in each activity.

Prior to the arrival of the candidates, the assessment team completed an intensive review and training in the methods of assessment. All team members were instructed on the nature of the rating system and the details for each test. Trial runs were conducted with experienced evaluators, scores were compared for reliability, and discussions and further examples were conducted for verification. Pre-AC training also included practice scoring sessions with live simulations and feedback, a review of assessor biases, and practice using the BARS assessment guide. Additionally, the AC coordinator, a senior selection expert, highlighted the competency details and measurement features, reviewed the number and size of each serial, and clarified the AC routine. All preliminary preparations were attended by the entire AC staff, including clinical psychologists and administrative personnel, so that any questions, concerns, or observations could be addressed well in advance.

Due to Canadian Forces selection and training systems requirements and coordination, administration of the measurements were not consistent from year to year. Each CAC Instructor AC was comprised of four or five two-person assessment teams consisting of a CAC Subject Matter Expert and a qualified Personnel Selection Officer.

However, teams were not held constant between CAC Instructor ACs: at least 21 different assessors were employed over the period of this research.

Step 3: CAC Instructor Course

The CAC instructor course is a four-week, on-site program that provides theoretical and practical training in: 1) The facets of Stress Inoculation Theory, 2) The stages and effects of captivity, 3) The Canadian Code of Conduct After Capture, 4) The management of CAC training, and 5) Non-verbal communication. A typical course includes up to 22 personnel from all branches of the military (i.e., Army, Navy, and Air Force) and from all trades and occupations found within each of these branches. Grading and success is established on a pass/fail assigned during practical application of scenarios and based on the observations of long-standing, qualified CAC Instructors.

Step 4: Supplementary EI Data Collection

Two different types of data were included in this study: non-archival data (i.e., personnel who were available for inclusion after the commencement of this research in 2006); and archival data (i.e., the CAC Instructor applicants who completed the CAC Instructor AC and/or CAC Instructor qualification course prior to the commencement of this research). Because the EI measures were considered an addition to the existing AC measures, EI data were collected using three different methods:

- 1) Collection of data during the current CAC Instructor AC in conjunction with the standardized tests administered at Step 2;
- 2) Administration of surveys with individuals who had attended a CAC Instructor AC prior to the commencement of this research (i.e., in 2005 or 2006) was initiated by one of two means:

- 2a) Qualified CAC instructors participating as part of the course staff during one of the two courses held in the June-July 2007 or 2008 time period were personally approached by the primary researcher and invited to participate, or
- 2b) Participants not selected for training during one of either the 2005 or 2006 AC or not successfully completing the CAC qualification course in either 2005 or 2006 were contacted with an email invitation to participate.

Individuals who were approached personally by the primary researcher while attending the CAC instructor qualification courses, as qualified CAC instructors, in either 2007 or 2008, and who volunteered to participate in the research, were administered the surveys during pre-course training, under the supervision of the primary researcher. Participants who had been contacted via email invitation were administered the surveys through the offices of the various Base Personnel Selection Officers, who are certified in the administration of psychological testing.

Sample

Step 1: Pre-Selection

Demographic and applicant details were not tracked for the initial selection step; therefore, identification of participant numbers and details were limited to those individuals attending the AC.

Step 2: AC Attendance

A total of 131 attendees were assessed over the 4-year period. The average age of attendees was 35.50 years ($SD = 6.26$). Most attendees were men ($N = 113, 90.4\%$), and

the average period of service in the military was just under 14.80 years ($SD = 6.46$). The total number of AC candidates selected to the training course in each year varied as a matter of training needs, personal circumstances, operational requirements, and selection committee concerns/decisions. In the final analysis, 77 participants were selected to attend the CAC Instructor qualification course in June/July over a four year period (24 in 2005, 22 in 2006, 18 in 2007, and 13 in 2008).

Step 3: CAC Instructor Course

Success rates are typically low for the CAC Instructor course, with a pass rate of 68%, 36%, 45%, and 73%, for 2005 through 2008, respectively. Two attendees of the 2007 course were international students from New Zealand and their data were not included for analysis, their final ranking on the 2007 course was third and fourth. A total of 77 applicants were selected for training over the 4-year period. The average age of attendees was just over 35 years ($M = 35.92$, $SD = 6.01$), most attendees were men (88.3%), and the average period of service in the military was slightly more than 15 years ($SD = 6.16$). The most highly selected individual rank was Captain ($N = 22$), although collectively, more non-commissioned officers (i.e., sergeants and warrant officers) were selected ($N = 29$), see Appendix C for detailed breakdown of ranks selected.

EI Data Collection

EI data were obtained from a total of 75 CAC Instructor AC attendees, including 30 of 39 qualified CAC Instructors. The average age of participants was just over 36 years ($M = 36.20$, $SD = 6.46$), most attendees were men ($N = 64$, 85.33%), and the average period of service in the military was just over 15 years ($M = 15.23$, $SD = 6.49$).

*Measures**Step 1: Pre-Selection*

Personnel Selection Officer Semi-Structured Interview. The Personnel Selection Officer semi-structured interview for CAC Instructor training is an enhanced version of the standard CF assessment interview protocol. This measure is typically used to evaluate Canadian Forces personnel for transfer to a different occupation within the Canadian military; however, the CAC Instructor enhanced version of the interview includes an addendum designed to identify “red-flags”, also known as areas of concern, which could negatively affect an individual’s employment as a CAC Instructor. “Red flags” could include: having difficulties dealing with stress, a history of substance abuse, issues related to mental or physical health, repeated legal issues, or a limited and/or brief career history (i.e., an insufficient amount of experience).

Personnel Selection Officers, trained assessment and selection specialists, arrive at a total score out of a possible 90 for each applicant. The scoring system is based on a 5-point Likert scale assigned to each of the questions (1 = poor response, 3 = average response, 5 = outstanding response). The interview was designed from extensive research within the Canadian Forces regarding the reliability and validity of structured interviews for internal occupational transfers and is a classified document within the Canadian Forces to protect the integrity of the tool. It is therefore prohibited to reproduce questions found within the interview.

Cognitive Ability. The Canadian Forces Aptitude Test, the primary test of evaluation within the Canadian military, is a timed power test that is assessed on a total of 60 questions, subdivided into three sections: Verbal Ability, Spatial Ability, and

Problem Solving Skills. However, not all applicants were evaluated for acceptance based on the Canadian Forces Aptitude Test, 47 applicants (35%) were assessed on a previously employed cognitive ability test (i.e., the Canadian Forces General Cognitive Ability test). Because different tests were employed, an approved Canadian Forces conversion table was used to translate the General Cognitive Ability test scores into a single, overall score that is deemed comparable to the Canadian Forces Aptitude Test total score. Therefore, only total overall ability test scores were included in the data set and subsequently used as a predictor.

For the Canadian Forces Aptitude Test, English and French versions were found to have an internal reliability of $\alpha = .87$ and $\alpha = .83$, respectively (MacLennan, 1995). However, as Crocker and Algina (1986) cautioned, the reliability estimates for timed tests must be interpreted prudently due to test-takers' working rate and its influence on their performance. Additionally, although the Canadian Forces Aptitude Test has been shown to be a valid predictor of performance at the level of basic training such as recruit training (Black, 1999; O'Keefe, 1998); it has not been established as a reliable predictor of performance on advanced levels of training such as the basic Military Police level training (Hodgson, 2005) and other Non-Commissioned (NCM) level courses and training (e.g., Scholtz, 2004).

Step 2: AC Attendance

While attending the two-day AC, candidates completed two standardized tests, a cognitive ability test, and five AC assessment methods:

Standardized tests consisted of: 1) The Minnesota Multiphasic Personality Inventory (MMPI), which is used by trained clinical professionals to assist in identifying

personality structure and psychopathology. It is appropriate for use with adults 18 years of age and over and was standardized on a national sample of adults in the United States. The MMPI-2 has 567 items, all true or false in format, and takes between 1 and 2 hours to complete. The test includes three basic types of validity measures: those designed to detect non-responding or inconsistent responding, those designed to detect when clients are over reporting or exaggerating the prevalence or severity of psychological symptoms, and those designed to detect when test-takers are underreporting or downplaying psychological symptoms. Scores on the MMPI scales are not representative of either percentile rank or how "well" or "badly" someone has done on the test. Raw scores on the scales are transformed into standardized T-scores ($M = 50$, $SD = 10$); (Tellegen, Ben-Porath, McNulty, Arbisi, Graham, & Kaemmer, 2003);

2) The NEO PI-R is a psychological personality inventory containing 240-questions that measure the Five Factor Model: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. Answered on a five-point scale, ranging from 1 = "strongly disagree" to 5 = "strongly agree", the test takes between 30 and 40 minutes to complete. Costa and McCrae (1992) report high internal consistency: Neuroticism = .92, Extraversion = .89, Openness to Experience = .87, Agreeableness = .86, Conscientiousness = .90. The internal consistency of the facet scales ranged from .56 to .81, and test-retest reliability is reported over 6 years: Neuroticism = .83, Extraversion = .82, Openness to Experience = .83, Agreeableness = .63, Conscientiousness = .79 (Costa & McCrae 1992).

Cognitive ability was measured with the Wonderlic, a twelve-minute, fifty-question intelligence test used to assess aptitude for learning and problem-solving in a

wide range of occupations. The score is calculated as the number of correct answers given in the allotted time. A score of 20 is intended to indicate average intelligence (corresponding to an intelligence quotient of 100).

The five assessment activities employed within the AC to assess different aspects of the 11 competencies:

- 1) Role Plays: Three types of role plays, labelled in this research as Positive, Neutral, and Negative, were utilized. Role Plays were designed to measure a candidate's ability to adopt particular roles and personas. The job analysis had determined that a major portion of the CAC Instructor's employment entailed performing a series of dynamic roles in a practical training environment.
- 2) Structured Interview: A Structured Interview was specifically designed using behavioural and situational based questions to tap into an attendee's probability of success employed as a CAC Instructor. The scoring system is a behaviourally designed assessment, based on a 5-point Likert scale assigned to each of the questions (1 = poor response, 3 = average response, 5 = outstanding response).
- 3) Presentation: The preparation and delivery of a brief presentation was designed to expose candidates to unfamiliar information and have them organize that information into a presentation for a panel of 3 to 5 assessors. Candidates were directed to organize an onerous amount of information into a 5-minute presentation which was followed by questions. Candidates were told they would be assessed on the

comprehensiveness of the information they provided, the clarity with which they presented the information, and the quality of the overall presentation.

- 4) Teamwork Exercise: A team based exercise was designed to challenge 4 candidates working together to solve a problem for which there was no solution. Candidates were assessed on their ability to work together as a team in designing a solution and then collectively striving to resolve the issue within the limited period of time.
- 5) Essay: Candidates were required to complete a brief essay of a generic topic in order to determine their ability to communicate a message in the written word. Essays were evaluated based on the clarity of the message, the structure/organization of the message, and the completeness of the information.

These five activities (i.e., methods) assessed different aspects of the 11 competencies as highlighted (see Table 2). For example, candidates received scores for “Adaptability” on both the Oral Presentation and the Structured Interview and scores for “Interpersonal Skills” on both the Role Plays and the Structured Interview. A total score for “Interpersonal Skills” was achieved from the combination and computing of the mean for the two scores. The Role Plays method was further broken down into three types of role plays (identified simply as Positive, Neutral, and Negative throughout the research to protect the identity of the measured competency and in order to maintain the integrity of the method to the AC).

Table 2

Number of Scores Per Assessment Method and Competency

CAC Instructor AC Competencies	Role Plays	Assessment Method				Total
		Structured Interview	Written Exercise	Oral Presentation	Teamwork Exercise	
Acting	5					5
Conscientiousness	5	1		1		7
Adaptability		1		1		2
Emotional Stability	2	2			1	5
Self Awareness		1				1
Confidence	3	2		1		6
Accept Criticism		1			1	2
Interpersonal Skills	1	1				2
Written Communication			4			4
Oral Communication		1		3		4
Teamwork		1			1	2
Total	16	11	4	6	3	40

Note: Actual number of competencies measured by different methods = 22.

Results of the five non-psychometric methods were rated on a 5-point Likert-scale (1 = well-below average performance, 3 = average performance, 5 = well-above average performance). In total, 40 separate scores were used to calculate the 11 competencies, although some scores had been broken down into sub-scores and subsequently combined. For instance, “Emotional Stability” was measured with the Structured Interview but broken into “Restraint” and “Stress Management”, which were subsequently combined for a total score from the two factors. On the whole, all competencies, other than “Written Communication”, “Acting”, and “Self-Awareness”, were measured in at least two of the five methods. However, “Self-Awareness” was measured only on the Structured Interview and “Written Communication” was measured only on the Written Exercise.

Total scores were calculated for an overall AC score used to rank order attendees for selection to the CAC training course. The combined standardized tests and developed activities of the AC were designed to assess potential as CAC instructors in accordance with the competencies identified through the job analysis.

Step 3: CAC Instructor Course

Unclassified military guidelines (e.g., United States Department of Defense DODI 1300.21, January 8, 2001) indicate that personnel detained in a combat environment may encounter “hostile detention” (p. 9) which could include a “variety of tactics to exploit POWs for propaganda purposes or to obtain military information” (p. 13). Subsequently, Instructors must learn to apply “scenarios within the practical training designed to expose students to the various exploitation methods that captors may employ against them, including various types of interrogation techniques” (“Conduct After Capture,” 2008, p. 6-5).

These policy guidelines suggest that the intensity of the situation and levels of perceived threat that a detainee may experience could exceed the parameters of reasonable expectations or legally allowable under the guidelines of the Geneva Conventions. Therefore, CAC Instructors are mandated to introduce and, when necessary, sufficiently simulate hostile conditions thereby making personnel aware of the possibility of detention in a harsh environment without causing them undue harm. To that end, CAC Instructors are taught how to simulate detention conditions without compromising the trainees’ well-being. CAC Instructor course training consists of lectures and practical exercises in which potential instructors are trained in several areas:

1. Specifics of the Canadian Forces Code of Conduct After Capture.

2. Types and degree of threat that could be encountered in particular areas of operations.
3. The likelihood of capture given particular regions in which Canadian Forces personnel are employed.
4. Psychological/stress coping mechanisms and methods for the development of confidence in the ability to apply coping mechanisms in a practical training environment.
5. Stress Inoculation Theory, which is used to introduce levels of intensity and develop degrees of immunity to the anticipated hardships of internment, and teach positive self-belief with a three phase approach: 1) Conceptualization (i.e., develop a comprehensive understanding and reliable picture of the situation for which the individual is preparing); 2) Skills acquisition and rehearsal (i.e., practice problem-solving activities using coping behaviours); and 3) Application and follow through (i.e., graded exposure); (Meichenbaum, 1977; Saunders, et. al., 1996).
6. Recognition of non-verbal cues (e.g., body language, eye movement) in interpreting the thoughts and feelings of a trainee. Instructors are provided with theoretical presentations on the various nuances of an individual's behaviour, which are believed to be indicative of feelings or emotions (anger, fear, sadness, confusion). They are then instructed on how to interpret cues based on the training conditions. Practical exercises reinforce the ability to detect and interpret physical cues.

7. Types and application methods of covert communications. Under the premise that multiple detainees will be prohibited from openly communicating in front of their captors, instructors must be able to teach the various methods of communications that personnel could employ.
8. Cross-gender issues regarding the risks and implications of being detained with mixed-gender groups.
9. Duties of the various senior CAC personnel during an exercise including the various stages of a CAC practical exercise.
10. Religious considerations during captivity.
11. The physical and psychological pressures on a Prisoner of War or detainee and the impact of these pressures on an individual during detention.
12. Stages of capture (initial capture, movement and holding, long-term internment) and the potential conditions of each stage.
13. Techniques for the resistance of interrogation tactics and the practical training and application of the techniques.
14. Medical issues that could arise during captivity.
15. Interrogation methods that hostile interrogators may employ.
16. Report writing.

Although two graded tests are administered during the course, one on the Geneva Conventions and an accumulative test on the remaining topics candidates are given a pass/fail result based on a predetermined cut-off score and final test scores are not retained on file. Final course disposition is based on the consensus of the SME staff that a

trainee has achieved the goal of successfully performing the various interrogations assigned.

EI Measures

EI data were collected during step 2 (i.e., the CAC Instructor AC) only from those subjects who attended the AC in 2007 and 2008. For subjects attending the CAC Instructor AC in either 2007 or 2008, two additional surveys were included in the battery of tests (i.e., the standardized measures) they completed during the AC: the MSCEIT, Version 2 (Mayer, Salovey, & Caruso, 2002) and the Bar-On EQ-i (Bar-On, 1997). The remainder of the EI research participants were administered the MSCEIT and the EQ-i as outlined in Step 4 of the Procedures section.

The MSCEIT. The Mayer Salovey and Caruso Emotional Intelligence Test, Version 2 (MSCEIT; Mayer et al., 2002) is a 141-item self-report measure of emotional intelligence that takes participants 30-45 minutes to complete. The measure consists of 8 different tasks (i.e., faces, pictures, facilitation, sensations, changes, blends, emotional management, and emotional relations), which tap into the 4 EI abilities (i.e., perceiving emotions, facilitating thought, understanding emotions, and managing emotions). A score for each ability is computed by calculating empirical percentiles and then positioning them on a normal curve. Similar to traditional IQ scores, each ability score has an average of 100 and a standard deviation of 15. Internal reliability of the overall measure is high with a reported Cronbach's alpha of .93 (Mayer et al., 1999). Details regarding how the 8 different tasks are integrated with the 4 abilities are provided in Appendix B.

The Bar-On EQ-i. The Bar-On EQ-i is a 133-item self-report measure of emotional intelligence that takes participants 30-40 minutes to complete. The measure

provides a total score and five composite scores (i.e., intrapersonal intelligence, interpersonal intelligence, adaptability, stress management, and general mood), further broken into 15 subscale scores. Scores are converted from a five-point response scale (ranging from 1 = “not true of me” to 5 = “true of me”) into standard scores, based on a mean of 100 and a standard deviation of 15. Conversion of respondent scores enables comparison of one respondent’s score to scores of the normative group and “theoretically” to the rest of the population (Bar-On, 2002, p. 7).

High Bar-On EQ-i scores indicate “emotionally intelligent” individuals, whereas lower scores indicate an opportunity to improve emotional intelligence (Bar-On, 2002, p.7). The Bar-On EQ-i includes a correction factor designed to adjust for response bias. Bar-On (2002) reported moderate to high internal reliability of the measure for a North American sample is high with Cronbach’s alpha between .70 and .89 for each of the 15 subscale scores.

Results

An initial screening, using SPSS for Windows version 14, of the data for missing data; violations of assumptions including non-linearity, non-normality and heteroskedasticity; and for univariate and multivariate outliers indicated that no major violations were evident. However, nine subjects had sufficient information missing from critical areas (e.g., Canadian Forces Aptitude Test score, AC competencies scores) that they were excluded using listwise deletion. In addition, although three subjects were missing the results of the standardized tests (MMPI, NEO, Wonderlic) and the subsequent psychological recommendation that is derived from the clinical psychologist’s interpretation of these tests and a personal interview their results were

retained for AC and EI analyses. The final sample size used for analysis was $N = 122$ for the factor analysis and reliability of the AC measures, and $N = 44$ for analyses involving EI.

Factor Structure and Reliability

In order to examine the factor structure of the CAC Instructor AC, a principal components analysis (PCA) was conducted with direct orthogonal (varimax) rotation using SPSS version 14.0 using the 22 scores across 11 competencies.¹ The PCA resulted in a four component model accounting for 54.29% of the variance (see Appendix H). Components were labelled: 1) Communication, 2) Acting, 3) Teamwork, and 4) Oral Presentation. Several cross-loadings are apparent in the analysis of the 22-item, four component model, however the Scree Plot clearly demonstrates a four component model when examining the collapsed items (see Appendix I).

The first component (Communication) consisted of the Written Communication item and the nine items from the original Structured Interview assessment method, although there were three cross-loadings. Loadings ranged from .32 to .73. The Structured Interview Emotional Stability item, loaded on the Communication component at .64, cross-loaded with the new Acting component at -.37, and was assigned to the Communication component because of the stronger, positive relationship and the relativity to the Structured Interview method. The Structured Interview Interpersonal Skills item which loaded onto the Communication component at .60 and cross-loaded

¹ Further analyses were conducted on 40 individual scores from the 11 competencies and 5 methods. These scores were not collapsed with a method as is traditionally done in multi-trait, multi-method matrices. In order to be conservative, both methods of analyses were conducted to allow for comparison; however, because the original condensed model with 22 scores was more statistically and theoretically parsimonious, it was retained for the remainder of this research. For a full overview of the expanded 40-item model, please see Appendix D.

onto Acting at $-.43$ was assigned to the Communication component because of the stronger, positive loading and its having generated from the Structured Interview method. Lastly, the Structured Interview Teamwork item loaded onto the Communication component at $.54$ and cross-loaded onto the Acting component at $-.34$, but was assigned to the Communication item because of the stronger, positive loading and its having originated with the Structured Interview method. The items making up the Written Assignment measure loaded onto the Communication component at $.48$ and cross-loaded onto the Teamwork component at $-.36$. It was subsequently loaded onto the Communication component because of the stronger, positive relationship and the intuitive connection to the communication factor.

The second component, Acting, consisted of the Role Play items with loadings ranging from $.41$ to $.80$, although four of them had cross-loadings. Role Play Acting Confidence loading at $.79$ cross-loaded with the Communication component at $.37$, Role Play Acting loaded onto the Acting component at $.75$ and cross-loaded on the Communication component at $.41$, while Role Play Interpersonal Skills Acting loaded at $.60$ with the Acting component and at $.33$ with the Communication component. All three of these were assigned to the Acting component because of the stronger positive and intuitive relationship with the Acting component. The fourth cross-loading was the Conscientiousness Role Play Acting item which loaded onto the Acting component at $.46$ and cross-loaded onto the Teamwork component at $.41$, it was assigned to the Acting component because of the slightly stronger association and intuitive relationship to the Acting factors.

The third component, Teamwork, contained all three of the Teamwork measures and the Conscientiousness Oral Presentation item with loadings from .39 to .56. Two items cross-loaded: the Teamwork Exercise loaded at .56 cross-loaded with the Oral Presentation component at .37 and the Acceptance of Criticism Teamwork loaded at .54 cross-loaded with the Oral Presentation component at .41. Both of these items were assigned to the Teamwork component because of the stronger loading and intuitive relationship to the Teamwork component. The Conscientiousness Oral Presentation item loaded negatively at -.55 with the Teamwork component but did not load with any of the other components so it was assigned to Teamwork.

The final component, Oral Presentation, had loadings from .31 to .47 and contained the remaining three items from the Oral Presentation method. All three items cross-loaded onto other components: Adaptability Oral Presentation, .47, also loaded onto the Communication component at .56; Oral Communication Oral Presentation, .31, also loaded onto the Communication component at .63; and Confidence Oral Presentation, .43, also loaded onto the Communication component at .56. Despite the higher loadings with the Communication component, these three items were consolidated to form the fourth component because the Scree plot and eigenvalues clearly delineated a four factor model; however, no other items loaded as clearly as these to form a separate component and the theorized and intuitive relationship of the three items allowed them to be separately consolidated. Therefore, Hypothesis 1a is not supported in that the results from this PCA do not support the originally theorized 11 factor model and suggest that a 4-factor model roughly based on the methods is a better fit.

In order to assess the internal reliability of the CAC Instructor AC, three sets of reliability analyses were conducted: In the first set of analyses, the reliabilities of the four subscales identified by the PCA were examined (see Table 2). Cronbach's alphas for all four components were adequate ranging from $\alpha = .66$ to $\alpha = .84$. Minimum item-total correlations ranged from $r = .22$ to $.37$. The second set of analyses consisted of the 11 subscales from the original 11 competencies (see Table 3). Cronbach's alphas were low, ranging from $-.11$ to $.51$ (and correlations of the 2-item scales ranged from $-.11$ to $.46$). Minimum item-total correlations ranged from $r = -.03$ to $.38$ for each of the 11 competencies. The third set of analyses was comprised of the 5 subscales, from the original five methods of assessment used during the AC and originally devised from the job analysis (see Table 4). Cronbach's alphas ranged from $\alpha = .52$ to $.83$. The lowest item-total correlations ranged from $r = .20$ to $.29$. Therefore, Hypothesis 1b was not supported.

Table 3

Internal Consistency Coefficients and Lowest Item-Total Correlations for the CAC Instructor AC's 4 Factors according to PCA

	Competency	Cronbach's alpha	Range of item-total correlations
1.	Communication	.84	.28 to .66
2.	Acting	.76	.30 to .82
3.	Teamwork	.66	.37 to .55
4.	Oral Communication	.75	.22 to .74

N = 122

Table 4

Internal Consistency Coefficients and Lowest Item-Total Correlations for the CAC

Instructor AC's 11 Competencies

	Competency	Cronbach's alpha	Range of item-total correlations
1.	Acting	N/A ^a	N/A
2.	Conscientiousness	-.09	-.10 to .04
3.	Adaptability	.45 ^b	N/A
4.	Emotional Stability	.01	-.03 to .02
5.	Self-Awareness	N/A ^a	N/A
6.	Confidence	.51	.27 to .38
7.	Acceptance of Criticism	-.11 ^b	N/A
8.	Interpersonal Skills	.11 ^b	N/A
9.	Written Communication	N/A ^a	N/A
10.	Oral Communication	.46 ^b	N/A
11.	Teamwork	.35 ^b	N/A

N = 122

^a Alphas not calculated for items containing one item

^b Note: Calculated "r" for scales with only 2 items

Table 5

Internal Consistency Coefficients and Range of Item-Total Correlations for the CAC

Instructor AC's Five Methods

	Method	Cronbach's alpha	Range of item-total correlation
1.	Role Plays	.80	.20 to .69
2.	Structured Interview	.83	.26 to .67
3.	Written Exercise	N/A	N/A
4.	Oral Presentation	.69	.29 to .58
5.	Teamwork	.52	.27 to .38

N = 122

In order to examine the premise of Hypothesis 2 (i.e., strong correlations among similar competencies regardless of method of measure and weak correlations among dissimilar competencies), Campbell and Fiske (1959) recommend using a multitrait-multimethod matrix to examine the convergent and discriminant validity coefficients. Therefore, using the multitrait-multimethod matrix technique an analysis of the 22 items

with the 5 methods and 11 competencies was performed. Analysis was conducted for evidence of convergent and discriminant validity (i.e., monotrait-heteromethod coefficients).

Within the 22-item model, 14 convergent validities were theorized. Five of the 14 theorized validities were significantly related and four of the five contained one of two correlating items from within the Structured Interview method: Confidence Structured Interview and Confidence Acting $r = .18$ at $p < .05$, Adaptability Structured Interview and Adaptability Oral Presentation $r = .32$ at $p < .01$, Confidence Structured Interview and Confidence Oral Presentation $r = .34$ at $p < .01$, and Teamwork Structured Interview and Teamwork Teamwork Exercise $r = .22$ at $p < .05$. The fifth significant convergent validity relationship was comprised of Confidence Acting and Confidence Oral Presentation $r = .25$ at $p < .01$.

Of 36 overlapping heterotrait-monomethod items within the Structured Interview method 33 were significantly correlated, 8 of 10 items within the Role Play method correlated significantly, and 3 of 3 items within the Teamwork method were significantly correlated. One deviation from this trend was that only 2 of 6 items within the Oral Presentation method correlated. Written Communication method was measured with one item.

Results suggest that similar competencies are not being assessed across different methods (i.e., convergent validity), rather the method itself and verbally related competencies are seemingly being highlighted. Therefore, the current data fail to support Hypotheses 2a and 2b in that there were low correlations among similar constructs using

different methods, and there were high correlations among dissimilar competencies within the same methods.

Predictive Validity

In order to determine the predictive validity of the AC's hypothesized 11 competencies, correlations (see Table 5) and a Logistical Regression analysis were conducted. Correlations between the CAC Instructor course Pass/Fail outcome and the 11 competencies, rank, and age ranged from $r = .05, p = ns$, to $r = .42, p < .001$. The relationships between the course outcome and Acting, Emotional Stability, Self-Awareness, Confidence, Acceptance of Criticism, Interpersonal Skills, Oral Communication, and rank were all statistically significant (r 's ranged from $r = .27$ to $r = .42, p < .05$). When controlling for the Canadian Forces Aptitude Test score correlations ranged from $r = .01$ to $r = .65$, Acceptance of Criticism was no longer significant; however, the remaining constructs remained significant with the course outcome (see Table 6). Moreover, the relationship between course outcome and Adaptability became significant ($r = .27, p < .05$).

Similarly, correlations were conducted in order to examine the predictive validity of the 4 component model identified with the PCA (see Table 7). All 4 of the subscales were significantly correlated to the course outcome (r 's ranged from $r = .28, p < .05$ to $r = .35, p < .01$). Additionally, rank was a significant predictor of success ($r = .47, p < .05$). When controlling for the CFAT correlations ranged from ($r = .28, p < .05$ to $r = .36, p < .01$; see Table 8). All of the correlations between course outcomes and the four subscales remained significant.

Table 6
Correlations Among CAC Instructor AC Competencies and Course Outcome, Age, and Rank

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Course Outcome															
2 Acting	3.36	.63	.38 ^a												
3 Conscientiousness	3.41	.60	.08	.34 ^b											
4 Adaptability	3.68	.65	.24	.18	.07										
5 Emotional Stability	4.11	.37	.29 ^a	.35 ^b	.10	.32 ^a									
6 Self-Awareness	3.70	.71	.32 ^a	.16	.10	.40 ^c	.49 ^c								
7 Confidence	3.68	.51	.40 ^c	.67 ^c	.29 ^b	.39 ^b	.46 ^c	.31 ^a							
8 Acceptance of Criticism	3.78	.51	.29 ^a	.16	.01	.41 ^b	.49 ^c	.32 ^a	.24						
9 Interpersonal Skills	3.58	.62	.42 ^b	.60 ^b	.08	.29 ^a	.43 ^c	.44 ^c	.42 ^c	.26 ^a					
10 Written Communication	3.61	.68	.20	.09	.11	.23	.19	.19	.21	.25	.27 ^a				
11 Oral Communication	3.58	.67	.27 ^a	.18	.17	.57 ^c	.21	.40 ^c	.48 ^c	.32 ^a	.31 ^a	.47 ^c			
12 Teamwork	3.81	.56	.20	.01	-.18	.14	.34 ^b	.29 ^a	.21	.26 ^a	.14	.07	-.11		
13 Age	35.29	5.9	.12	.17	.00	.22	.18	.17	.35 ^a	.00	-.04	.00	.18	.14	
14 Rank	N/A	N/A	.27 ^a	.22	-.05	.48 ^c	.31 ^a	.33 ^a	.35 ^b	.21	.36 ^b	.21	.40 ^c	.10	.36 ^b

^a < .05
^b < .01
^c < .001

In light of the dichotomous nature of the CAC Instructor course outcome (i.e., Pass/Fail), a Logistic Regression was conducted. In this sense “1” was equal to a passing result on the course and “0” represented a fail result. The logistic regression model was then used to estimate the factors that influenced successful performance on the CAC Instructor course. A Logistic Regression analysis was conducted for the 4-factor model and the hypothesized 11-factor model.

Analyses with Logistic Regression on the 11 originally theorized competencies resulted in a significant $r^2 = .02$ with a Chi-square test of significance, $\chi^2 = 24.88$, suggesting that the model has predictive abilities. Results indicate that the model correctly selects successful candidates 80% of the time and is a significant improvement on random selection with a rate of 73.5% overall. However, none of the individual competencies demonstrated a significant level of prediction, suggesting that there is overlap among the competencies whereby they have competed for variance.

Within the 4 factor model, a level of overall predictive success with the model was indicated at 82% (i.e., the model accurately predicted successful candidates 82% of the time) with the Chi-square being $\chi^2 = 20.97$, $R^2 = .002$. Additionally, the component Acting demonstrated a level of predictive significance at pseudo $R^2 = .03$ and Teamwork at $R^2 = .05$. That is, for every 1 unit increase in their AC acting score, candidates were 4.12 times more likely to be successful in training. Likewise, for every level of increase in their teamwork score candidates were 2.86 times more likely to be successful in training.

Table 7

Correlations Among CAC Instructor AC Competencies and Course Outcome After Controlling for the Canadian Forces

Aptitude Test

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Course Outcome													
2 Acting	.39 ^b												
3 Conscientiousness	.05	.32 ^b											
4 Adaptability	.26 ^a	.12	.05										
5 Emotional Stability	.30 ^a	.34 ^b	.11	.32 ^b									
6 Self-Awareness	.34 ^b	.11 ^c	-.13	.35 ^b	.49 ^c								
7 Confidence	.46 ^c	.65 ^c	.27 ^a	.46 ^c	.47 ^c	.29 ^a							
8 Acceptance of Criticism	.21	.09	.01	.29 ^a	.45 ^c	.34 ^b	.14						
9 Interpersonal Skills	.45 ^c	.57 ^c	.06	.26 ^a	.39 ^c	.37 ^b	.42 ^c	.20					
10 Written Communication	.21	.06	.10	.27 ^a	.20	.18	.23	.19	.28 ^a				
11 Oral Communication	.32 ^b	.17	.13	.65 ^c	.27 ^a	.43 ^c	.51 ^c	.27 ^a	.33 ^b	.48 ^c			
12 Teamwork	.19	.04	-.06	.24 ^a	.36 ^b	.29 ^a	.27 ^a	.25 ^a	.15	.08	-.01		
13 Age	.22	.23	-.05	.10	.15	.11	.32 ^b	-.01	-.02	-.01	.16	.07	
14 Rank	.28 ^a	.19	-.02	.46 ^c	.28 ^a	.26 ^a	.36 ^b	.15	.31 ^a	.20	.41 ^c	.19	.24

^a < .05

^b < .01

^c < .001

Table 8

Correlations Among CAC Instructor Course Outcome and the PCA 4 Component

Model

	1	2	3	4	5	6
1 Training Disposition						
2 Communication	.30 ^a					
3 Acting	.32 ^a	.17				
4 Teamwork	.35 ^b	.24	.05			
5 Oral Presentation	.28 ^a	.34 ^b	.16	.39 ^a		
6 Age	.12	.05	.16	.08	.27 ^a	
7 Rank	.27 ^a	.37 ^b	.14	.21	.47 ^c	.36 ^b

^a $p < .05$.

^b $p < .01$

^c $p < .001$

Table 9

Correlations Among CAC Instructor Course Outcome and the PCA 4

Component Mode Controlling for Canadian Forces Aptitude Test

	1	2	3	4	5	6
1 Training Disposition						
2 Communication	.29 ^a					
3 Acting	.36 ^b	.11				
4 Teamwork	.31 ^a	.14	.09			
5 Oral Presentation	.32 ^b	.36 ^b	.17	.26 ^a		
6 Age	.21	.02	.15	.06	.20	
7 Rank	.28 ^a	.31 ^a	.14	.20	.47 ^b	.24

^a $p < .05$.

^b $p < .01$

Predictive Validity of EI

It was hypothesized that scores on the EI measures would be associated with success on the CAC Instructors' course. However, because of irregularities in the EI data, the analyses involving EI could not be conducted.

Discussion

Although a great deal of research has investigated the predictive value of ACs with management level positions, their ability to accurately select individuals involved in unique training, such as that found in the CAC field, is limited. However, the capricious nature of CAC training makes it imperative that the selection of instructors be conducted with a reliable and valid tool that would, if necessary, withstand legal and administrative scrutiny. Therefore, notwithstanding the expense involved in the coordination and conduct of the AC, these two requirements (i.e., legal/administrative defensibility and limiting potential risks to trainers and trainees) elucidate the need for a capable tool in the selection of CAC Instructors. In that vein, the aim of this study was to examine the psychometric properties of the CAC Instructor AC, including its reliability, factor structure, convergent and discriminant validities, incremental validity beyond the predictive validity of a cognitive ability test.

Factor Structure and Internal Reliability

Data contained in this study did not demonstrate the theorized 11 factor model, as predicted, therefore, neither Hypothesis 1a nor 1b were supported. Results from the two principal components analyses suggested that either a seven-component model or four-component model best captured the variance within the competencies utilized. Details of the expanded list of items (i.e., 40 item model) are contained in Appendix D.

Components within the four factor model included: (1) Communication, (2) Acting, (3) Teamwork, and (4) Oral Presentation. Factor loadings were high and clear for all components except Oral Presentation which cross-loaded with and had slightly better loadings on the Communication component; however, the clear delineation of a four

factor model with the scree plot and the Eigen values led to the assignment of the separate Oral Presentation component. Oral Presentation was chosen as the fourth component because its items were the only items that stood out separately from the other components on their own.

The inclination of the items to favour either a 7- or 4-factor model also seems to lean heavily towards the measurement instruments and/or be verbal in the nature of the component. That is, there appears to be a propensity for items to congregate based on the method used to measure them (e.g., Structured Interview, Role Playing) and the degree of verbal skills within the item. Thomson (1970) pointed out that discriminant validity is necessary for the determination of construct validity and that tests, or traits, which rate too highly with other tests from which they are intended to differ can be invalidated. Hence, discriminant validity is the degree to which one trait differs from another and is necessary for the establishment of unique traits providing evidence of construct validity. Alternatively, the confirmation of a trait is identified with convergent validity. As evidenced by the analysis of the CAC Instructor AC data, the reverse was found to hold constant thereby negating construct validity.

As suggested in this research, the issue with construct validity appears to continue to plague application and examination of ACs. Lance (2008) suggests that the problem may be linked to the cross-exercise specificity of candidates' behaviour where the very nature of the AC assumes that candidates are behaving cross-exercise consistently. In this vein assessors are then inappropriately assessing the candidates' behaviour (Lance, 2008). Similarly, Chen & Naquin (2006) suggest that it is the design of the AC that causes construct-validity related issues and recommend designing the AC based on

advanced development of the competencies. The authors' proposition provides a clear delineation of the steps in designing, preparing, coordinating, and implementing an AC (see Appendix K) that overcomes problems often encountered with construct-validity (Chen & Naquin, 2006). Critical within the preparation of the AC, according to the authors, is the identification and assessment of "sub-competencies" rather than the examination of "abstract" competencies such as role playing (Chen & Naquin, 2006).

For instance, Chen and Naquin (2006) emphasise that although the task of a role play may be to examine the participant's communication skills, communication also includes written and oral communication. A phenomenon evidenced in the combination of subcomponents in the fifth factor of the 7-component model found in this research wherein aspects of the oral and written communication grouped together. Using Chen and Naquin's (2006) model at Appendix K, identifying an implicit behaviour such as communication separate from the explicit behaviour of role playing using the multi-rater system of evaluation, preceded by the identification of critical implicit behaviours by a group of participants scoring each of the proposed sub-competencies on a scale of one to five, can identify the more appropriate competencies (Chen & Naquin, 2006). The authors also caution against the use of more than 10 competencies suggesting that a type of competency overlap or watering down occurs whereby assessors rate purportedly different competencies similarly (Chen & Naquin, 2006).

As a final note, the 11 competency scales varied in their level of inter-item correlation. In particular, items found within the Conscientiousness scale that should have correlated were low among all the other items except Confidence. Conscientiousness, unlike the other items, is measured in a non-linear fashion. That is, conscientiousness is

scored based on an individual's ability to complete a task within a particular time. Failure to complete the task in the designated timeframe results in a reduction of their score. However, candidates are deducted points for either using too much time or failing to finish sufficiently close to the deadline meaning that the scale can be affected equally in opposing directions. Therefore, the non-linear nature of the measure may be contributing to its lack of clarity and inability to correlate with the other items. Conversely, correlations within Interpersonal Skills and Oral Communication were relatively high. In this way, the unidimensionality of test items is determined by examining the inter-item correlations of the scale (Schmitt, 1996).

Predictive Reliability of the AC

Although a relatively thorough library of research exists on the predictive validity of ACs with respect to management level selection, two particular concerns are pertinent when considering the results from the current study. First, other research continues to demonstrate differences in the consistency of AC accuracy, with concerns that the AC may be an overly expensive and complicated system achieving only marginally better results than other less complicated systems (e.g., cognitive ability tests, managerial assessments). Second, the area of CAC research and training is unique, however, the stress placed on both trainers and trainees demands that care be taken in the nomination and selection of the training caretakers. Overlooking the well-being of either participant in CAC training (i.e., trainee and trainer) could have long reaching effects (e.g., legal/administrative action, psychological distress, emotional distress). Therefore, the purpose of this study was to determine if the current CAC Instructor AC is doing a good job of selecting instructors.

The uniqueness of the topic may have had implications on the ability of the researchers' to integrate scientific process to a realm wherein much of the details are closely guarded beyond the availability of military authorities. Additionally, the dichotomous (pass/fail) nature of the success criteria on the CAC Instructor course, wherein a Logistic Regression was conducted, may have had limiting effects on interpretation. However, a Log Linear Analysis reliably predicts outcomes where main and interactive effects are categorical in conjunction with continuous variables (Tabachnick & Fidell, 2007).

Within the 4 factor model all of the components demonstrated a significant level of correlation with the course outcome and moderate levels of inter-item correlations. In this fashion, the four components derived from the consolidating of the items form reliable measures of success, seem to be a superior format in which to organize the measures. Conversely, the reliability analysis of the method scales (i.e., Structured Interview, Role Plays, Written Exercise, Oral Presentation, Teamwork Exercise) demonstrated positive results with high internal consistency and low to moderate inter-item correlations. Overall, the reliability of the scales seems to be strong, although those found within the four component model were marginally stronger with slightly better inter-item correlations.

Limitations & Recommendations

Sample size

With respect to multiple regressions, some authors (e.g., Pedhazur, 1997, p. 207) suggest a subject to variable ratio of 15:1 or 30:1. However, few explicit guidelines exist for PCA (Baggaley, 1983). Two different approaches have been suggested: a minimum

sample size or a calculation of the ratio of subjects to variables. For instance, Comfrey and Lee (1992) have suggested that “the adequacy of sample size might be evaluated very roughly on the following scale: 50 – very poor; 100 – poor; 200 – fair; 300 – good; 500 – very good; 1000 or more – excellent” (p. 217). In this same vein, Guadagnoli and Velicer (1988) reviewed a number of studies and concluded that sample sizes, rather than subject to item ratios, were more relevant. Ultimately, recommendations of N s between 50 (Barrett & Kline, 1981) and 400 (Aleamoni, 1976) were found within different studies. While Tabachnick and Fidell (2007) advise that conducting analysis using Factor Analysis is appropriate, or safe, with a sample size of 300.

Because a great deal of variance can exist within the types of scales used (i.e., number of items, magnitude of item-factor correlations), absolute sample size offers a simplistic approach. However, a rule of thumb from Nunnally (1978, p. 421) suggests that the subject to item ratio for any EFA should be at least 10:1. At the end of the day, according to MacCallum, Widaman, Preacher, and Hong (2001), there is no easily identifiable ratio that will work in all cases; the number of items per factor and their communalities, in conjunction with their item loading magnitudes, can be excessive or deficient for any particular ratio.

However, given the limited number of available subjects in this particular study (i.e., $N = 122$ for the factor analysis and $N = 44$ for predictive reliability), which is far below recommended levels of 10 subjects for each item in a PCA or the minimum suggested requirement, results may be tenuous. Tabachnick and Fidell (2007) point out that the number of variables and the complexity of the structure dictate the sample size required. Given that 11 competencies are used in the CAC Instructor AC, the minimum

suggested sample size, calculated either by ratio or total, has not been achieved.

Additionally, the extended periods of time between available collection periods (ACs and training are only conducted once each year) curtailed the size of the sample.

Homogeneous sample

Although ethnic and cultural particulars were not recorded, only slightly more than 10% of the attendees to the CAC Instructor AC were women. This homogeneity is somewhat a result of the institution in that the Canadian military is much like its counterparts in the United States and the United Kingdom who report ethnically and gender analogous organizations (Britain: Soldier white; Armed forces, 2003). The Economist (2003) reported that fewer than 2% of service personnel are of an ethnic background other than Caucasian, compared to 9% within the general population; while women are under represented in all ranks and occupations of the military (Warner & Asch, 2001). This fundamental disparity in diversity could have affected rates of responses and assessment of participants such that the assessors rated an individual of unique gender or ethnicity differently or, conversely, participants could have been assumed to be similar given commonality of background and demographics. In particular, the affect could have been emphasized for women being assessed because of their limited numbers (Wetzel, 2006).

Halo effects

Although assessors are trained and cautioned to be wary of tendencies to prefer particular applicants, there is evidence that even expert assessors can be subject to halo effects (Dennis, 2007). Alternatively, focusing on the perceived effectiveness of the method and subsequently rating its quality of evaluation rather than the performance of

the participant is another form of halo effect. Further, the halo effect may be exacerbated by the military's own system of employing staff to the AC.

The utilization of different SMEs and selection experts, including the senior coordinator, at each AC is partially a result of the military's promotion and transfer policies, and could be seen as either a means of avoiding the halo effect dilemma or enhancing it. That is, promotion and posting practices could be further aggravating the problem by employing naïve assessors at each serial, thereby failing to establish a consistency of application with the methods. Increased coefficients of the monomethod values, as evidenced in the current research, would demonstrate the presence of rater halo effects (Thomson, 1970). This implies that the assessors seemed to be performing method related halo. That is, assessors may be focusing on the method being used to measure, subsequently creating the factor analysis groupings that tended toward the methods.

Number of dimensions & trait activation

The expanded CAC Instructor AC currently utilizes 40 dimensions contained in 11 competencies and measured with 5 separate methods. Although Lievens, Chasteen, Day, and Christiansen (2006) do not provide a specific number, they suggest that limiting the number of dimensions may enhance the AC's strength at predicting performance. Reducing the CAC Instructor AC to the 22 dimensions for the 11 competencies and 5 methods does address the issue to a degree. However, a problem with AC exercises is that the psychological demands placed on separate individuals vary. That is, because inconsistent behaviour is evoked across exercises they cannot be considered to be parallel measures and, subsequently, responses are provoked by the strength of the stimulus

(circumstance or exercise). The result is different scores where similar scores are expected.

However, as the strength of the stimulus increases response uncertainty diminishes (Lievens, et al., 2006), in this fashion, a subtle measure may be developing ambiguity, and the degree of the response may then be inherent on an individual's personal traits as they are reflected in the Big Five (extraversion, conscientiousness, openness to experience, agreeableness, neuroticism). Conversely, too strong a situation stimulus can diminish individual differences because there are sufficient cues as to how a participant should respond, thereby reducing the variation required in measuring performance in the AC exercises.

Lievens, et al. (2006) suggest that trait activation (the initiation of a response based on an individual's particular trait characteristics and the degree of importance assessed to the situation) explains the convergent validity levels in ACs. The authors propose that the traits of extraversion and conscientiousness are most significantly affected in ACs. This submission is supported by the evidence that extraversion and conscientiousness are the "most observable and detectable" (p. 254) of the five personality traits (Lievens, et al., 2006). Promisingly however, discriminating between different traits within the same exercise is more successful than attempts to discriminate a common trait with the same exercise (Lievens, et al., 2006).

Also, more challenging interactions (oral presentations, role-plays, leaderless group discussions) are the most effective exercises as they elicit competitive situations with others (Lievens, et al., 2006). Therefore, future considerations for the CAC Instructor AC should include limiting the number of dimensions while emphasizing those

measures already found in the role-plays and presentations. Continued research should explore an optimum number of exercises while limiting the number of exercises that attempt to measure the same trait.

Candidate preparation

Although differences of opinion exist with respect to the nature of information provided to candidates prior to the assessment centre, the International Task Force on Assessment Centre Guidelines (2000) provides a set of minimum requirements. Despite the guidelines, support prevails with respect to providing both minimal and extreme amounts of detail. In their review of the most common mistakes made at ACs, Caldwell, Thornton III, & Gruys (2003) cite the International Task Force on Assessment Centre Guidelines (2000), and point out that many AC coordinators are inadequately preparing candidates for the process. The authors suggest that “superb” (p. 81) preparation includes the provision of an “updated job description that had been used to determine the job criteria” (p. 81) and a description of the dimensions accompanied by an opportunity to ask questions and discuss the dimensions as a group, thereby serving to provide candidates with a clear understanding of expectations (Caldwell, Thornton III, & Gruys, 2003). At this time, candidates to the CAC Instructor AC receive the minimal required information outlined in the Assessment Centre Guidelines (2000).

Potentially, reducing the problem with construct validity may be found in the preparation of candidates with the disclosure of the competencies. Kolk, Born, & van der Flier (2003) found that the construct related validity improved significantly when AC candidates were apprised of the competencies being measured. That is, priming the candidates with written descriptions of the competencies resulted in “more consistent

behaviour with respect to the various dimensions and not (in) higher scores” (p. 663). The details of the CAC Instructor AC are currently classified as limited access documentation both within the military and externally. However, upon completion of and signing an acknowledgement of security restrictions regarding release of the AC’s details, participants could be provided with the competency details.

Course Grading Scheme

Determining whether or not the results of the AC are reflective of the outcomes on the CAC training course is critical to analyzing the AC’s validity. In order to achieve an indication of the effectiveness of the AC in selecting trainees, reliable scores are required from each successful candidate to which the results of the AC can be compared. At this juncture in the development of CAC training, the current program relies on a pass/fail system of success. Candidates are judged to have been successful at predetermined stages of the course, including their final disposition, based on the judgement of a CAC SME. Subsequently, restricted validity coefficients obtained from the pass/fail system of evaluation may have curtailed the presence of variability in selection (Bradley, 1993). On the flip side of this argument however, Hackett (2002) points out that “assessments in training capture mostly “maximal performance” while on-the-job (post training) performance better captures “typical performance.” (p. 138). If this is the case, it is conceivable that the assessments provided by qualified SMEs during simulated and actual application of the skills may be an accurate reflection of success.

Additionally, the very nature of military duty is less dependent on individual performance, where the measure of effectiveness extends to the team (Hackett, 2002). Future research may consider if identifying individually strong, and conversely weak,

team players could create an environment of individualism in a team-dependent environment thereby developing poor team results in attempts to gain individual recognition or success. Hackett's (2002) assertion that "training course grades, heavily influenced by tests of newly acquired knowledge, predominantly measure declarative knowledge" (p. 138) suggests that training based assessments fail to capture potential future outcomes because military performance is more heavily dependent on contextual and adaptive performance. Simple successful/unsuccessful outcomes may, therefore, have more relativity when conducted as "work" simulated evaluations of ability and success as a reflection of CAC Instructor achievement may be more conducive to the military emphasis on teamwork. Despite these considerations, development of behaviourally based marking guides is currently underway for the CAC Instructor course, however they were not in use during the period of this research. Therefore, an accurate determination of the AC's validity may have been curtailed, but future research will need to determine which aspect needs to take precedence: a format allowing for research and development or an evaluation process that reflects 'real world' performance.

Implications for CAC Organizations

Results of this research are scheduled to be considered and reviewed within the training and development process for CAC Instructors in conjunction with the military CAC training directives used by Canada and its international training partners. Participatory nations (i.e., Australia, New Zealand, the United Kingdom, and the United States) are expected to be interested in the details of this research and subsequent presentations and articles to the governing panel (Technical Cooperation Program, Technical Panel 10, Survival Psychology) are anticipated.

With respect to the continuance of the CAC Instructor AC as a reasonable selection tool, Hinrichs (1978) provided evidence that the prediction levels of management prospects by currently serving managers using blind personnel files within a similar occupation (referred to as “naturalistic” evaluations) when compared to the prediction level of ACs were equally accurate in predicting success of management candidates. In fact, the naturalistic evaluation had slightly better predictive ability. Interestingly, although energy level, administrative ability, written communications, and planning and organization were initially significantly correlated at the AC, they did not correlate with performance at the eight-year point (Hinrichs, 1978). This is believed to be a result of the AC’s elicitation of these behaviours at the time of assessment (Hinrichs, 1978). Hinrichs (1978) suggests that both AC assessors and manager representatives are factoring in personal knowledge of the “promotion criteria and organizational standards” (p. 600) thereby generating similar results. Although the naturalistic approach was a “slightly better” (p. 600) predictor of long-term success, a combination of the AC results and the managers’ evaluation was the most effective instrument (Hinrichs, 1978).

In this sense, a combination of direct contact and interviews, which are inherent in the CAC Instructor selection process, enhance the accuracy of the naturalistic approach. These observations reflect the concept inherent in the current CAC selection process whereby candidates are evaluated prior to the AC by means of a supervisor assessment and an unbiased Personnel Selection Officer semi-structured interview in conjunction with the overall CAC selection procedure. However, at this time, potential results may be curtailed at the AC because of a limited realistic job preview, although the legal defensibility and administrative integrity offered by the AC is not diminished. Factors

such as these simply need to be considered when examining the future of the CAC Instructor AC and given appropriate weight with regard to its continuance until such time as it can be unequivocally demonstrated to be a poor predictor of performance.

Interestingly, when examining the multitrait-multimethod matrix, there was a propensity among the items towards correlations with measures and competencies that were related to oral functions. That is, among the five theorized correlations in the multitrait-multimethod matrix that were significant all had some connection to an aspect of oral performance. For instance, Oral Communication correlated twice at $p < .01$ within the Structured Interview and the Oral Presentation, additionally Adaptability and Confidence were significant at $p < .01$ both with the Oral Presentation. Of the remaining correlations overall, two were connected with the Structured Interview and two with the Oral Presentation. Likewise, within the heterotrait-monomethod correlations, 92% of the Structured Interview items and 33% of the Oral Presentation items correlated.

This tendency towards the oral based facets of evaluation may be an indication of the CAC Instructor's requirement to employ presentation and acting skills as a major part of their duties. A skill of noteworthy importance identified in the job analysis. Similarly, given that extraversion is one of the most easily detected traits in evaluating individuals (Lievens, et al., 2006), and that the definition of extraversion includes aspects such as: a tendency towards enjoying human interactions and being enthusiastic, talkative, assertive, and gregarious; taking pleasure in activities such as social gatherings, community activities, public demonstrations, and business or political groups; pursuing fields such as acting, teaching, directing, managing, or brokering; and preferring to time spent with

people rather than alone, these traits or tendencies may be one of the most significant determining factors in the selection of CAC Instructors.

Recommendations for CAC Instructor Selection

The primary goals of this study were to determine if the psychometric properties of the CAC Instructor AC were functioning optimally. Results from this research suggest that construct-validity is a concern with the CAC Instructor AC. Subsequently, the following recommendations are provided:

1. Explore the implications of providing a realistic job preview to AC attendees prior to the commencement of assessment. Providing insight as to expectations may provide a “level playing field” whereby all attendees are made aware of what traits they are expected to demonstrate at each measure. Providing this level of detail may eliminate some of the discrepancy in performance behaviours.
2. Limit the number of dimensions that assessors are expected to rate. Reducing the number of dimensions may aid in focusing assessment away from the methods and moving evaluation towards the competencies.
3. Develop and implement an evaluation and assessment process for the instructor training course that will accurately define student progress and success of each candidate undergoing training. A more accurate, behaviourally based measure of student progress will allow for a less intuitive and potentially bias approach to training success, and will enhance prospects for course/training research and development.

4. Expand the pre-AC training with assessors to include more details on the halo effect and how to effectively safeguard against its potential application, including more practice under supervision.
5. Examine the predictive significance of the Personnel Selection Officer structured interview with the aim of considering it the primary tool of selection.
6. Explore the implications of the traits of extraversion as an indication of the success among CAC Instructors. Examine the potential predictive power of extraversion within the AC.
7. Continue to research the predictive capabilities of EI.

Conclusion

ACs remain a widely used method of selecting personnel because they offer an unsurpassed level of selection transparency, thereby affording the AC a level of legal defensibility and proposed psychometrically sound selection (i.e., reliability and validity) for a broad spectrum of entry level positions (Dayan et al., 2002). In particular, the military has come to rely on the AC as a selection device for several specialist occupations and duties. Although the current research suggests that the CAC Instructor AC may be measuring the methods rather than the proposed competencies and that there appears to be either 4 or 7 distinct components rather than the theoretically proposed 11, the AC was developed using scientifically sound methods and procedures. These shortfalls, in particular the difficulty in establishing construct validity, suggest that continued application of the CAC Instructor AC may be difficult to support. On its behalf, the AC did show a better than average ability to accurately select the best

individuals for training based on the data. Both the regression analysis and the logistic regression demonstrated that some of the facets of the AC are performing well with the selection of instructors.

However, it is only through continued use and expanded opportunities to research the properties of the CAC Instructor AC that the various issues herein identified can be isolated and rectified. It is critical to keep in mind that much of the research and application with AC's to date has focused on entry level or civilian based, management-type positions. The uniqueness of CAC training and selection demands careful scrutinizing of all the personnel concerned with its development and implementation, coupled with sound decisions regarding license to apply the skills. For these reasons alone, until the AC can be unequivocally shown to be an ineffective tool for selection, or until such time as a superior instrument becomes available, continued application of the AC remains the best option for the CF and the CAC training cadre.

Despite there being some concern regarding the construct validity of the data as it is displayed within the multitrait-multimethod matrix of this research, it is important to note that the design of the measures and the application of the AC are scientifically and legally sound and defensible. For instance, content validity refers to the extent to which a construct represents all facets of a given social concept. In order to achieve a level of assuredness that each of the constructs are representative of the social concept to which they are ascribed (e.g., agreeableness, emotional stability, conscientiousness) scientifically reliable and valid processes for the determination of constructs are necessary. Johnson and Vanderpool (2004) outlined the methods (i.e., Job Analysis, Subject Matter Expert panels) used to determine the applicable constructs (e.g.,

agreeableness, acting, conscientiousness). Such processes are acknowledged as accurate and legally defensible methods of determining the constructs (Catano et. al., 2005).

For example, Johnson et al. (2004) mentioned the application of a system reflective of that developed by Lawshe (1975): Lawshe's system is essentially a method for gauging agreement among raters (i.e., SMEs) regarding the requirement for a particular item. Lawshe (1975) proposed that SMEs respond to the following question for each item: "Is the skill or knowledge measured by this item essential/useful or not essential/not necessary to the performance of the construct?" According to Lawshe, if more than half of the SMEs indicate that an item is essential, that item has at least some content validity. A greater level of content validity exists as larger numbers of SMEs agree that a particular item is essential.

Likewise, Osborne (1987) pointed out that when individuals are being assessed for selection a construct is "reflected in observable behaviors" (p. 912) that is used for gauging a candidate's performance. Therefore, when applying the AC methods (i.e., measurements) to determine performance, we are concerned with the "validity of inferences that are made from predictor and criterion scores" (Osborne, 1987, p. 912) derived from the "interpretation of the measurements" (p. 912). That is, following Osborne's (1987) train of thought, the constructs (i.e., behaviours) being assessed must be accurately defined and producing valid predictions of potential success in order to be assured that the process is working.

Application of previously mentioned approved scientific techniques (i.e., Job Analysis, Subject Matter Expert panels, AC guidelines) as means of designing the AC measures assures a level of relativity and accuracy (Catano et. al., 2005). Legal

defensibility, clarity, and transparency are built into the AC by following the techniques developed through research and previous application (i.e., JA, SMEs). There is some concern with respect to the validity in this body of research, as assessed by the multitrait-multimethod matrix. However, development of the constructs followed a scientifically sound process and can therefore be regarded as accurate simulations of performance.

Finally, it has been shown within the current body of research that, despite the problems using construct validity procedures, validity was established through content validity procedures, and several of the assessed competencies demonstrated a significant level of prediction (predictive validity) of success. Furthermore, when rearranged into the four components allocated by the PCA all four components demonstrated a significant ability to predict success on the CAC Instructor course.

Given that the AC has shown levels of significant predictive validity over cognitive tests and an accuracy with selection, it is a legally valuable asset (e.g., Bobrow & Leonards, 1997; Damitz, Manzey, Kleinmann, & Severin, 2003; Jansen, & Vinkenburg, 2006; Krause, Kersting, Heggstad, & Thornton, 2006). Being able to predict performance from the AC results has the important service of providing a realistically accurate means of selecting CAC Instructors. Accurate selection regularly withstands legal scrutiny (e.g., *Stewart et.al. v US Department of the Treasury*, *Reynolds v Alabama Department of Transportation*, *United States v City of Milwaukee*, *Stearns v Ponderosa*: Adapted from Thornton, 2006) thereby alleviating the organization of countless hours, and monies, in defending selection decisions.

As a final note, the very nature of CAC instructor training implies that the security of the process and those involved be protected throughout. To that end, it is

important to recognize that the current study has focused on competencies and not on specific tasks and that much of the details regarding training have been precluded.

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Appendix A

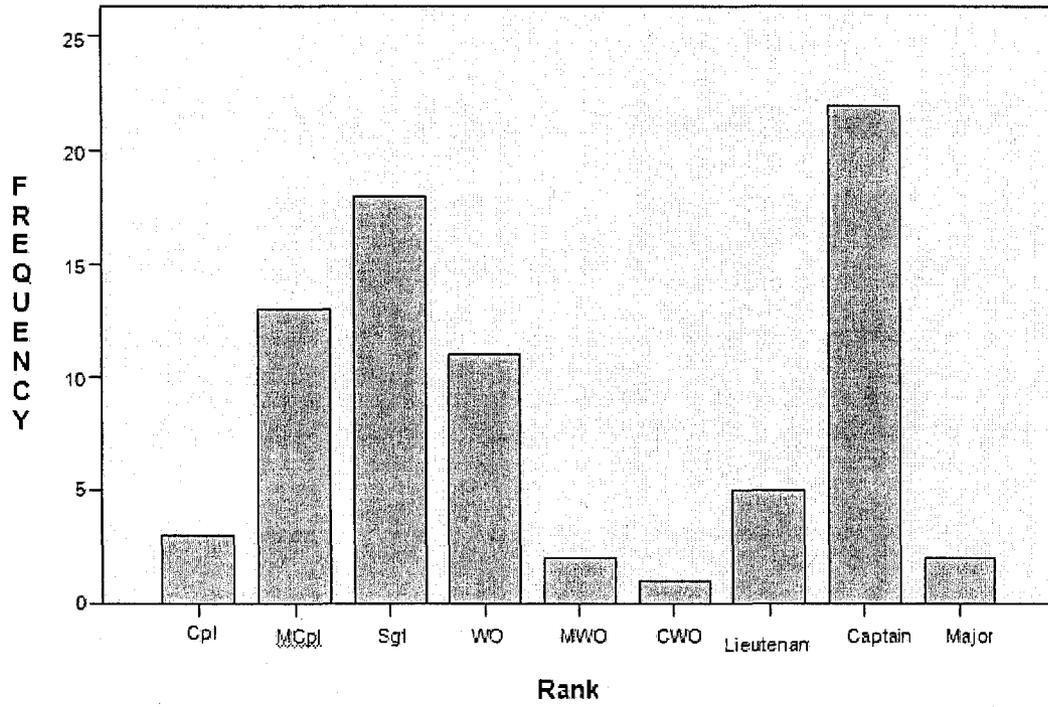
MSCEIT Measures and Skills

Ability	Question Type	How The Ability May Be Used	Survey Section
IDENTIFY/PERCEIVE EMOTIONS: Accurately identify emotions in people and objects.	Identify emotions in faces, landscapes, and designs.	"Read" people's moods for feedback.	Faces, Pictures.
USE EMOTIONS: Generate an emotion and solve problems with that emotion.	How moods impact thinking; relating feelings to thoughts.	Creating the right feeling to assist in problem solving, communicating a vision, and leading people.	Facilitation, Sensations.
UNDERSTAND EMOTIONS: Understand the causes of emotions.	Multiple choice emotion vocabulary questions.	Being able to predict how people will emotionally react.	Changes, Blends.
MANAGE EMOTIONS: Stay open to emotions and blend with thinking.	Indicate effectiveness of various solutions to problems.	Integrate emotion and thought to make effective decisions.	Emotion Management, Emotional Relationships.

Adapted from Mayer, Salovey, & Caruso, (1999). *Mayer, Salovey, Caruso Emotional Intelligence Test: Research Version 1.1 Manual 2nd Edition*. Toronto: Multi-Health Systems.

Appendix B

Rank Disposition of AC Attendees Selected for CAC Instructor Training



Appendix C

CAC Instructor AC Principle Components Results

And Analysis of the 40-Item Model

The scree plot (Appendix E), for the 40 item model, indicated the presence of either a four (Appendix F) or a seven (Appendix G) component model. Because the seven component model more adequately captured the 40 scores and made greater conceptual sense, it was retained. These seven components accounted for 58.8% of the total variance. Components were labelled (1) Structured Interview, (2) Communication, (3) Role Play Positive, (4) Role Play Neutral, (5) Communication Coordination, (6) Role Play Negative, and (7) Teamwork. Because the original 11 factor model was based on theory and the job analysis, the 11 factor model was forced in SPSS; however, there was no clear structure on the 11 theoretical components.

Within the 7 component model, the first component (Structured Interview) included 10 of the 11 Structured Interview items with loadings ranging from .51 to .77. The Conscientiousness item that was designed as part of the structured interview did not load on this component, it loaded onto the sixth component labelled Role Play Negative. The item Conscientiousness Time Management, which was examined via the Role Play Positive, loaded negatively on the first (Structured Interview) component.

The second component (Communication) contained four of the six items found within the Oral Presentation method and three of the four items found within the Written Communication method. Loadings ranged from .79 to .87 for the Oral Presentation items and from .31 to .54 for the Written Communication items. Conscientiousness Role Play Neutral Time Management cross-loaded negatively at -.32 on the second component

(Communication) and positively on the fourth component (Role Play Neutral) at .31. The item was subsequently assigned to the fourth component Role Play Neutral because of its theorized association with Role Plays and methodological-design affiliation with the Role Play Neutral component, and its positive loading with the Role Play Neutral component.

The four items for Role Play Positive all loaded together on the third component (Role Play Positive) with loadings ranging from .83 to .89 and therefore retained the title Role Play Positive. However, two items were cross-loaded on items from the fourth component (Acting Neutral and Acting Imagination Neutral). The items loaded on the third component at .39 and .38 respectively, however the loadings clearly had a stronger relationship to the fourth component (.73 and .68, respectively) and were more clearly associated with the nature of component four (Role Play Neutral).

The remainder of component four (Role Play Neutral) was comprised of five items from the Role Play Neutral method and three items from Role Play Negative method. Items loaded on the fourth component between .31 and .71. Due to the higher number of loadings from the Role Play Neutral items and that the Role Play Neutral loadings were stronger (i.e., .54 to .73) as compared to the Role Play Negative loadings which ranged from .37 to .53, component four was labelled Role Play Neutral.

Three items (i.e., 1) Conscientiousness Oral Presentation, 2) Pace Oral Presentation, and 3) Structure for the Written Communication) all loaded together on the fifth component with loading between .79 and .89. Because of the combined nature of oral and written communication facets of these items and their organizational quality, the component was labelled Communication Coordination. The sixth component (Role Play Negative) contained three items which loaded .57, .84, and .84 on this component. Two

of the items were from the Role Play Negative (.84 and .84) and the third item was Conscientiousness Structured Interview (.57). Because the two stronger loaded items were from Role Play Negative and because the Role Play Negative was originally designed with a similar conscientiousness measure, which loaded on component four, this component was labelled Role Play Negative.

The final component (Teamwork) contained the remaining three items which were all measured with the Teamwork method. Items loaded highly on this component (ranging from .65 to .78) with two items cross-loading on another component: Written Communication Content (.38) that loaded more strongly on the second component (Communication) at .53 and Emotional Stability Teamwork that loaded on the sixth component (Role Play Negative) loaded on the teamwork component at .31. Written Communication Content was assigned to component 2 (Communication) because it was highly associated with the other items on component 2 and had a stronger level of loading. Emotional Stability Teamwork was retained with the seventh component (Teamwork) because of its stronger loading and direct association with the other items.

Ultimately, all the items loaded onto components similar to the methods used to evaluate attendees at the AC. All of the Structured Interview items (i.e., 10 items) loaded together with the one non-Structured Interview item (Conscientiousness Role Play Positive), which loaded negatively (-.36) on the component. Likewise, all eight of the items that loaded onto the Communication component were associated with either the Oral Presentation or Written Exercise method of assessment. The three remaining items, Conscientiousness Oral Presentation, Pace Oral Presentation, and Structure Written Communication, formed a single component (Communication Coordination) based on

their communicative and organizational nature. The single method of Role Plays broke out into the three separate types of Role Plays (Positive, Neutral, and Negative), and the final component (Teamwork) contained all of the items from the Teamwork Exercise method. These results indicate that Hypothesis 1a was not supported by the PCA because the expected theorized 11 competencies more clearly loaded into a 7-component pattern.

In accordance with the results of the initial PCA, the reliability of each of the 7 components was examined (see Table 1). Cronbach's alpha ranged from $\alpha = .62$ to $\alpha = .93$. The lowest item-total correlations ranged from $r = .27$ to $r = .50$ on the Teamwork component, with the Role Play (Positive) scale having the highest internal consistency at $\alpha = .93$. The range of item-total correlations ranged from $r = .27$ to $r = .88$. The three factors Communication Coordination, Role Play (Negative), and Teamwork consisted of only three items each, and item-total correlations ranged from $r = .27$ to $r = .74$. Cronbach's alpha for the remaining four methods ranged from $\alpha = .62$ to $\alpha = .93$. The lowest item-total correlation for each component was $r = .30$ to $r = .88$.

Table 1

Internal Consistency Coefficients and Lowest Item-Total Correlations for the CAC

Instructor AC's 7 Factors according to PCA

	Competency	Cronbach's alpha	Range of item-total correlations
1.	Structured Interview	.82	.30 to .62
2.	Communication	.83	.33 to .76
3.	Role Play Positive	.93	.84 to .88
4.	Role Play Neutral	.71	.23 to .68
5.	Communication Coordination	.82	.62 to .74
6.	Role Play Negative	.74	.27 to .77
7.	Teamwork	.62	.27 to .50

N = 122

Within the 40-item model, the multitrait-multimethod matrix demonstrated coefficients ranging from $r = .001$ to $r = .91$, $p < .01$. Similarly, the number of heterotrait-monomethod items correlating within the 5 methods was high (see Table 2).

Additionally, several heterotrait-heteromethod relationships that were theorized to be discriminant validity coefficients demonstrated significance (see Table 3).

Table 2

Number of Significant Heterotrait-Monomethod Coefficients for the 5 CAC Instructor AC

Methods of Measurement

Method	Total Correlated	Theorized Discriminant Coefficients	Percentage Correlations	Range and mean
Role Play	71	120	59%	
Structured Interview	51	55	93%	
Written Exercise	4	6	67%	
Oral Presentation	11	15	73%	
Teamwork Exercise	3	3	100%	

Table 3

Correlating Discriminant Validity Coefficients

Competency (Method)		Correlated		Range
		Total	Possible	
1.	Adaptability (Oral Presentation) Acting	5	8	.18 - .21
2.	Accept Criticism Emotional Stability	7	8	.18 - .70
3.	Oral Communication Self-Awareness	4	4	.23 - .49
4.	Oral Communication Delivery Confidence	6	6	.18 - .80
5.	Interpersonal Skills (Role Play) Acting	4	4	.36 - .79
6.	Acting Confidence Acting	12	12	.19 - .82
7.	Adaptability (Oral Presentation) Oral Communication	4	4	.18 - .70
8.	Adaptability (Structured Interview)	3	4	.22 - .37

 Oral Communication

 $p < .05$

Of greatest note were the Time Management measurement results which demonstrated inconsistency of direction and correlation: Of a possible 143 convergent and discriminant results, 64 were negative (11 significant); within the Structured Interview method 22 of the 33 discriminant Time Management items produced negative results with 6 being significant ($r = -.20$ to $-.31$); within the Written Communication exercise 11 of the 12 discriminant Time Management items produced negative results although none were significant; within the Oral Presentation method 23 of 51 discriminant Time Management results were negative with 3 significant ($r = -.20$ to $r = -.24$); while only 1 of the 3 theorized convergent validities was significant ($r = -.22$) and one other produced a nonsignificant negative result ($r = -.10$); the remainder of the Time Management items were in the Role Play Method (6 negative non-significant results).

Thirty-nine monotrait-heteromethod items were theorized to result in convergent validities (i.e., monotrait-heteromethod relationships) within the multitrait-multimethod matrix. That is, among the 11 competencies being examined with the 5 methods, 39 significant convergent validity relationships were expected to demonstrate validity of measure: However, only eight of the presupposed relationships were significantly correlated: 3 at $p < .05$, 4 at $p < .01$, and 1 negatively at $p < .05$.

Due to a low level of power with regards to the number of subjects (122) and high number of items (40), correlations were examined at $p < .001$. Considering correlations of this strength resulted in output wherein many of the random heterotrait-heteromethod correlations found within the matrix were no longer valid, however correlations within the methods remained relatively constant. That is, the total number of heterotrait-

heteromethod discriminant items that correlated at $p < .05$ were reduced considerably with the increase in power while heterotrait-monomethod correlations persisted. At $p < .001$, the majority of the discriminant items that continued to correlate were related to verbal ability. The majority of the 19 heterotrait-heteromethod verbal ability type items measured at $p < .001$ correlated (i.e., 17 of the 19 for 90%) and were located within the Oral Presentation method; more specifically, they were contained within the competencies of Confidence and Communication.

Likewise, the increase in power (i.e., $p < .001$) similarly reduced the number of heterotrait-monomethod discriminant validities that correlated within the Role Play method (e.g., Role Play Acting to Oral Presentation). Validities dropped from 59 items at $p < .05$ to 32 items at $p < .001$, with the heterotrait-monomethod items measured between Acting and Confidence retaining a large number of correlations (i.e., 15 of 20 or 75% within the Acting to Confidence measures and 47% of the overall Role Plays heterotrait-monomethod correlations).

In order to determine predictive validity of the components identified in the 7 component model, Pearson's Correlations ranged from .01 to .37 with the relationship between course success and the PCA factors Structured Interview, Communication ($p < .01$), Role Play Positive, Teamwork, and rank at the time of the AC being significant (see Table 4).

Table 4

Correlations Between CAC Instructor Training Disposition and the PCA 7 Component Model

	1	2	3	4	5	6	7	8	9
Training Disposition									
Structured Interview	.28*								
Communication	.34**	.34**							

Role Play Positive	.30*	.25	.24						
Role Play Neutral	.22	.31	.08	.29*					
Communication Organization	.01	-.04	.23	.04	-.06				
Role Play Negative	.11	.39**	.01	.28*	.12	-.11			
Teamwork	.37**	.19	.46**	.18	.24	-.12	.06		
Age	.12	.06	.17	.12	.18	-.00	.03	.25	
Rank	.27*	.32*	.48**	.19	.09	.05	-.11	.27*	.36**

* $p < .05$

** $p < .01$

Predictive ability of the AC

Within the 7 factor model, a nonsignificant result in the Block 0 level of significance for the variables in the equation was a positive indicator that the model was functioning. A level of overall predictive success with the model was indicated at 85% (i.e., the model accurately predicted successful candidates 82% of the time) with the Chi-square being $\chi^2 = 20.87$, $\alpha = .01$. However, none of the individual components demonstrated a significant level of predictive ability.

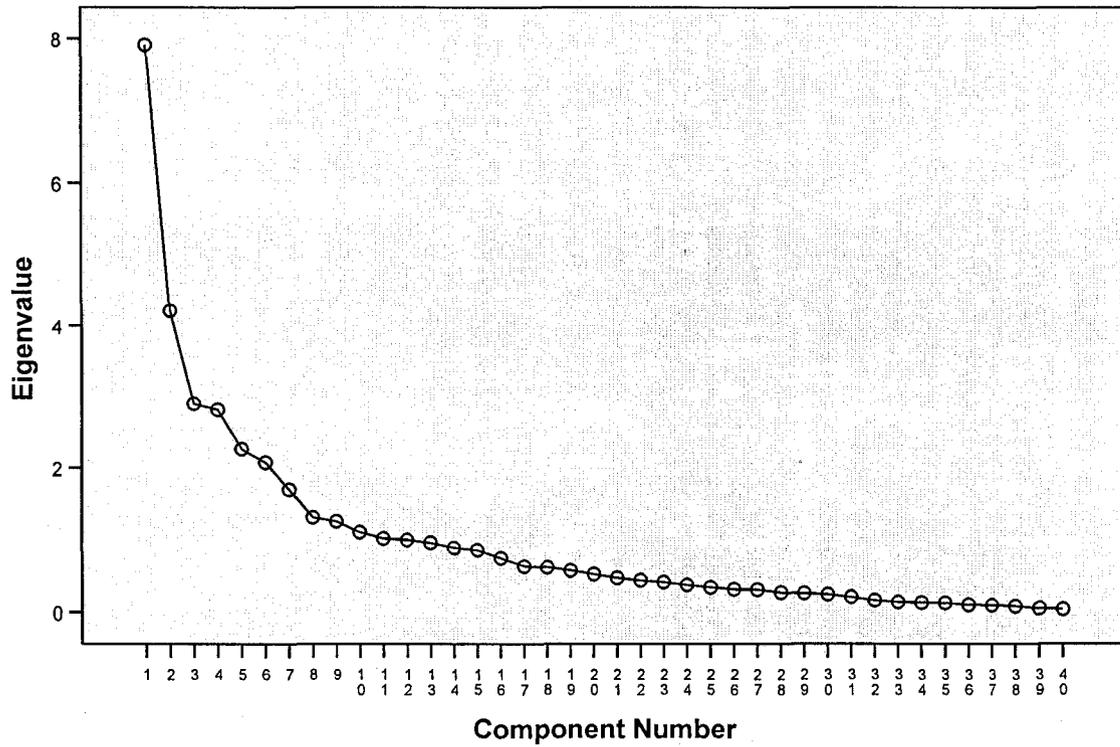
Discussion. Data contained in this study did not demonstrate the theorized 11 factor model, as predicted, therefore, neither Hypothesis 1a nor 1b are supported. The seven factors identified in the PCA included: (1) Structured Interview, (2) Communication, (3) Role Play (Positive), (4) Role Play (Neutral), (5) Communication Structure and Pace, (6) Role Play (Negative), and (7) Teamwork. Factor loadings are high and clear, with few complex loadings. Because a considerable portion of the CAC Instructor's employment involves delivering information through various means (e.g., lectures, written reports, practical training) and performing roles or adopting personas, it is reasonable that 5 of the 7 components identified with the PCA focused on communication and acting (i.e., Communication, Role Play (Positive), Role Play (Neutral), Role Play (Negative), and Communication Coordination).

Separately identifying the three acting-related facets (i.e., Positive, Negative, and Neutral) of the model emphasizes the belief from the job analysis that acting is an important component of determining the abilities of a CAC Instructor. The remaining component (Teamwork) entails aspects of assessment that addresses the collective nature and demands of CAC employment. Indeed, functioning in a demanding environment for extended periods of time while portraying myriad personas requires an individual who is confident in their abilities and can both rely upon the team, and be relied upon by the team, while exercising emotional restraint and control.

Appendix D

CAC Instructor AC Principle Components Analysis with the 40 Item Model

Scree Plot



Appendix E

CAC Instructor AC Principle Components Analysis

Of the 40 Item Model with Four Components

Rotated Component Matrix

	Component			
	1	2	3	4
Role play (Positive)	.776	.085	.193	.253
Role Play (POSITIVE) Imagination	.755	.009	.062	.154
role play (NEUTRAL)	.750	.163	.021	-.138
Confidence Role Play (POSITIVE)	.737	-.061	.214	.252
Interpersonal Skills role play (POSITIVE)	.705	.071	.108	.288
Role Play (NEUTRAL) imagination	.686	.210	.092	-.151
role play (Negative)	.608	.136	.063	-.014
Confidence Role Play (NEUTRAL)	.590	.098	.111	-.215
Confidence Role Play (H)	.512	.080	.074	-.080
Emotional Stability role play (NEUTRAL)	.404	.078	.058	-.215
Conscientious Structured interview	.358	.181	-.191	.268
Conscientiousness Role Play (NEUTRAL) Persistence	.350	-.093	-.178	-.053
Emotional Stability Structured interview restraint	.113	.756	-.016	.083
Self-awareness structured interview	.067	.718	.115	.158
Interpersonal Skills Structured Interview	-.051	.716	.067	.107
Emotional Stability Structured Interview Stress Management	.146	.708	.065	-.138
Oral Communication Structured Interview	.174	.704	.204	-.005
Confidence Structured interview self confident	.218	.674	.288	-.058
Teamwork Structured Interview	-.044	.616	.111	-.129
Adaptability Structured Interview	-.047	.558	.214	.093
Confidence Structured Interview Assertiveness	.184	.552	.169	.050
Acceptance of criticism structured interview	.116	.480	-.034	.415
Conscientious positive role play time management	.323	-.449	.020	-.228
Acceptance of criticism team work	.046	.402	.275	-.401
Teamwork Teamwork exercise	-.073	.379	.113	-.278
Emotional Stability Teamwork	.160	.313	.277	-.181
Oral communication Oral presentation presentation	.109	.124	.859	.012
Confidence Oral presentation	.074	.128	.826	.073
Oral Communication Oral Presentation delivery	.198	.240	.822	.049
Adaptability oral presentation	.182	.128	.779	-.103
Written Communication written exercise content	.129	.150	.621	-.097
Written Communication Written exercise presentation	.094	.075	.469	.168

Written Communication Written exercise grammar	-.051	.235	.317	-.020
Conscientious Neutral role play time management	.206	-.090	-.298	-.198
Oral Communication Oral Presentation pace	.112	.053	.220	.698
Written Communication Written exercise structure	.048	.092	.068	.683
Conscientious to oral presentation time management	.042	.066	.245	.614
Conscientiousness Role Play (Negative) Persistence	.337	.213	.292	-.464
Emotional Stability role play (Negative)	.269	-.071	.162	-.365
Conscientious role play (Negative) time management	.257	.098	.053	-.303

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 5 iterations.

Appendix F

CAC Instructor AC Principle Components Analysis

Of the 40 Item Model with Seven Components

	Component						
	1	2	3	4	5	6	7
Emotional Stability Structured	.771	-.026	.082	-.066	-.017	.003	.031
Emotional Stability Structured	.744	.081	-.027	.131	-.243	-.078	.025
Interpersonal Skills Structured	.693	.066	-.005	-.171	.058	-.030	.155
Self-awareness structured interview	.682	.169	.015	.159	.204	-.029	-.009
Oral Communication Structured	.671	.255	.119	.057	.058	.017	.134
Confidence Structured interview self	.654	.283	.099	.135	.037	.000	.168
Teamwork Structured Interview	.638	.100	-.180	.050	-.157	.159	.135
Adaptability Structured Interview	.602	.257	-.049	-.121	.062	.179	-.014
Acceptance of criticism structured	.574	-.047	.149	-.216	.229	.098	-.167
Confidence Structured Interview	.514	.104	.003	.141	.097	.044	.128
Conscientious positive role play time	-.360	.075	.077	.259	-.233	.310	-.135
Oral communication Oral presentation	.131	.869	.098	.049	.024	.032	.016
Confidence Oral presentation	.145	.850	.011	-.016	.090	.140	-.055
Oral Communication Oral Presentation	.286	.826	.070	.109	.008	.093	-.005
Adaptability oral presentation	.145	.805	.070	.136	-.026	.067	.075
Written Communication written	.027	.529	.169	.132	.209	-.069	.384
Written Communication Written	.095	.425	.249	-.122	.090	-.013	.019
Conscientious neutral role play time	-.083	-.320	-.097	.307	-.052	.272	.021
Written Communication Written	.222	.305	.096	-.056	.050	-.151	.164
Interpersonal Skills positive role play	.057	.095	.886	.105	.067	.057	.012
Positive Role play	.049	.148	.877	.133	.073	.129	-.011
Confidence Positive Role Play	-.050	.199	.843	.179	.040	.136	.001
Positive Role Play Imagination	.022	.098	.828	.144	-.091	.128	.020
Neutral role play	.065	-.004	.393	.727	.072	.123	.110
Confidence Neutral Role Play	-.012	.127	.285	.717	.017	.010	.140
Neutral imagination	.131	.019	.375	.675	.009	.065	.167
Emotional Stability Neutral role play	.086	-.055	.142	.649	-.052	-.246	-.148
Conscientiousness Neutral Role Play	-.066	-.114	.048	.574	.117	.135	-.117
Emotional Stability Negative role play	-.121	.221	-.078	.525	-.053	.066	-.016
Conscientiousness Negative Role Play	.123	.271	-.140	.475	-.204	.329	.233
Conscientious negative role play time	.132	-.088	-.165	.368	-.009	.179	.269
Written Communication Written	.075	-.025	.047	-.040	.893	-.018	.042
Oral Communication Oral Presentation	.076	.191	.063	.013	.827	.105	-.100
Conscientious to oral presentation time	.057	.112	-.021	.060	.785	-.031	-.075
Negative role play	.073	.084	.226	.192	.036	.844	.044
Confidence Negative Role Play	.007	.144	.164	.158	.006	.839	.091
Conscientious Structured interview	.333	-.139	.247	-.185	.096	.574	-.112
Teamwork Teamwork exercise	.155	.009	.048	-.030	-.084	-.013	.777
Acceptance of criticism team work	.231	.079	-.009	.116	-.172	-.204	.709
Emotional Stability Teamwork	.052	.088	-.002	.021	.065	.309	.650

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 7 iterations.

Appendix G

CAC Instructor AC Principle Components Analysis

Of the 22 Item Model with Four Factors

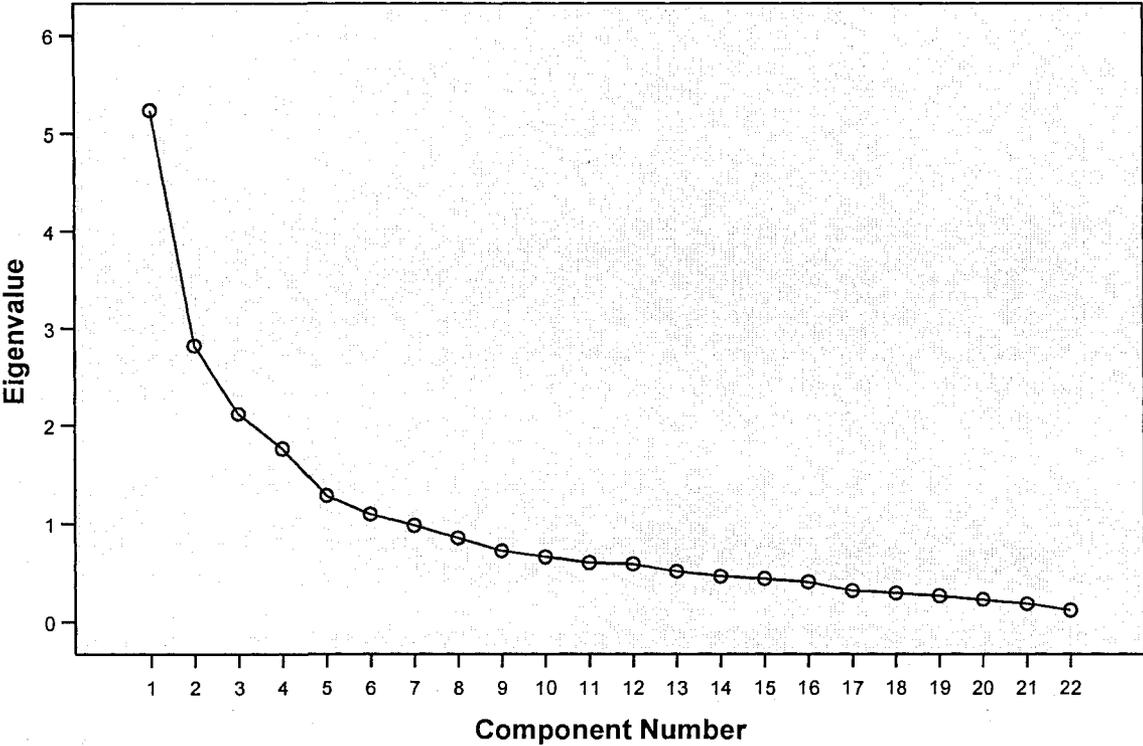
	Communication	Acting	Teamwork	Oral Presentation
Conf_Int_Collapsed	.726	-.114	.132	-.010
Oral Communication Structured Interview	.725	-.137	.054	-.073
Self-awareness structured interview	.672	-.184	-.020	-.106
EmoStab_Int_Collapsed	.639	-.373	.208	-.208
Adaptability Structured Interview	.620	-.293	-.071	-.071
Interpersonal Skills Structured Interview	.600	-.434	.085	-.118
Teamwork Structured Interview	.539	-.338	.288	-.020
Acceptance of criticism structured interview	.458	-.288	-.185	-.441
Conscientious Structured interview	.317	.050	-.003	-.596
WritComm_Collapsed	.483	.143	-.359	.150
Adaptability oral presentation	.555	.266	-.212	.465
OralComm_OralPres_Collap sed	.625	.245	-.490	.305
Confidence Oral presentation	.556	.185	-.396	.431
Conf_Act_Collapsed	.372	.790	.180	-.173
Acting_Collapsed	.414	.751	.215	-.305
Interpersonal Skills Positive role play	.331	.599	.027	-.327
Conscientiousness_Acting_C ollapsed	-.019	.456	.409	.006
EmoStab_Act_Collapsed	.078	.410	.206	.078
Teamwork exercise	.290	-.079	.558	.367
Acceptance of criticism team work	.300	-.125	.542	.410

Emotional Stability	.288	.082	.393	.281
Teamwork				
Conscientious to oral presentation time management	.225	.098	-.554	.007

Appendix H

CAC Instructor AC Principle Components Analysis with the 22 Item Model

Scree Plot



Appendix I

22 Component Multitrait-Multimethod Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1 Acting																						
2 Conscientiousness Acting	.37 ^a																					
3 Emotional Stability Acting	.28 ^a .32 ^a																					
4 Confidence Acting	.82 ^a .33 ^a .30 ^a																					
5 Interpersonal Skills	.69 ^a .04 .12 .60 ^a																					
6 Conscientiousness Structured Interview	.30 ^a .00 -.16 .25 ^a .17																					
7 Adaptability Structured Interview	.07 -.09 -.06 .02 .01 .20 ^b																					
8 Confidence Structured Interview	.21 ^b -.02 .08 .19 ^b .12 .27 ^a .36 ^a																					
9 Interpersonal Skills Structured Interview	-.02 -.01 -.09 -.09 .06 .18 ^b .42 ^a .39 ^a																					
10 Emotional Stability Structured Interview	.11 -.03 -.03 .00 .09 .15 .44 ^a .49 ^a .55 ^a																					
11 Self-Awareness Structured Interview	.17 -.10 .12 .11 .09 .18 .40 ^a .49 ^a .46 ^a .50 ^a																					
12 Oral Communication Structured Interview	.20 ^b -.03 -.01 .15 .17 .26 ^a .37 ^a .63 ^a .45 ^a .52 ^a .50 ^a																					
13 Acceptance of Criticism Structured Interview	.08 -.20 ^b -.12 -.02 .12 .29 ^a .42 ^a .28 ^a .38 ^a .40 ^a .29 ^a .28 ^a																					
14 Teamwork Structured Interview	.02 .02 .08 .05 -.09 .11 .47 ^a .38 ^a .42 ^a .53 ^a .40 ^a .33 ^a .27 ^a																					
15 Adaptability Oral Presentation	.26 ^a .03 .14 .27 ^a .17 -.00 .32 ^a .30 ^a .12 .18 ^b .17 .30 ^a .02 .21 ^b																					
16 Confidence Oral Presentation	.15 -.04 -.01 .25 ^a .09 -.00 .27 ^a .34 ^a .18 .12 .27 ^a .34 ^a .10 .12 .65 ^a																					
17 Oral Communication Oral Presentation	.24 ^a -.05 .02 .28 ^a .22 ^b .08 .29 ^a .32 ^a .02 .11 .00 .00 .20 ^b .14 .00 .33 ^a																					
18 Conscientiousness Oral Presentation	.06 -.12 .01 .04 .09 .04 .13 .15 .06 -.03 .19 ^b .08 .12 -.08 .09 .14 .39 ^a																					
19 Written Communication	.16 -.10 .05 .16 .24 ^a .07 .22 ^b .20 ^b .21 ^b .13 .26 ^a .32 ^a .19 ^b .05 .32 ^a .30 ^a .46 ^a .38 ^a																					
20 Teamwork Exercise	.05 .05 -.06 .10 .08 -.01 .16 .25 ^a .18 .18 .10 .17 -.06 .22 ^b .16 .01 .00 -.15 .11																					
21 Emotional Stability Teamwork	.18 ^b .15 -.01 .23 ^a .04 -.03 .10 .17 .18 ^b .04 .14 .10 .06 .23 ^a .08 .11 .13 -.03 .12 .35 ^a																					
22 Acceptance of Criticism Teamwork	.08 .00 .07 .00 -.01 -.09 .09 .32 ^a .22 ^b .24 ^a .14 .24 ^a -.05 .16 .13 .04 .04 -.12 .04 .53 ^a .30 ^a																					

N=124

^a $p < .01$

^b $p < .05$