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AN EXPLORATION OF STRESS IN POLICE OFFICERS: A  
STUDY OF THE PREDICTIVE VALUE OF PRE-EMPLOYMENT  
PSYCHOLOGICAL MEASURES IN THE DEVELOPMENT OF  
STRESS REACTIONS IN A SAMPLE OF ONTARIO POLICE OFFICERS

by

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A thesis submitted in conformity with the requirements  
for the degree of Doctor of Education  
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PSYCHOLOGICAL MEASURES IN THE DEVELOPMENT OF  
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ABSTRACT

This study examines self-reported levels of stress and coping in a sample of 102 newly-hired police officers. Specifically, the domains of Occupational Stress, Psychological Strain, and Coping Resources as measured by the Occupational Stress Inventory were examined both independently and in relation to scores on select scales of the Minnesota Multiphasic Personality Inventory, Revised and the 16 Personality Factors Questionnaire. At the time of the study, 53% of the sample indicated experiencing some degree of occupationally-related stress, with 17% indicating the presence of significant levels of occupational stress. The majority of respondents (83.4%) indicated no difficulty within the psychological strain domain. On the coping domain, 25.5% of the sample indicated experiencing mild deficits in their coping resources while 6.9% indicated significant deficits. As expected, participants' scores on the measure of personal coping were significantly negatively correlated with both the Occupational Stress and Psychological Strain categories. For the MMPI-2, significant negative correlations were found between the K scale (Subtle Defensiveness) and both the Occupational Stress and Psychological Strain scales. A significant positive correlation was also found between Scale 9 (Hypomania) and the Occupational Stress scale. For the 16 PF, significant correlations were found between the Psychological Strain scale and the Ego Strength and Rebelliousness factors.

Gender differences were examined with respect to scores on both the stress inventory and the measures of personality. The results indicate that male police officers identified the presence of more occupational stress than did their female counterparts. Male police officers also tended to obtain significantly higher scores on Scale 1 (Hypochondriasis), Scale 2 (Depression), and Scale 7 (Psychastenia). Female officers had higher scores on Scale 5 (Masculinity-Femininity). Last, a median split on the total measure of occupational stress was performed in order to identify any significant differences between higher and lower scorers on this variable. Significant results were found on the K (Subtle Defensiveness) scale and on Scale 6 (Paranoia). The relationship between stress levels and the career stage of police officers is discussed, as is the impact of stress on the recruitment, training, and management of police officers.



## **ACKNOWLEDGEMENTS**

I wish to express my most sincere thanks to Dr. Lana Stermac, Dr. Roy Gillis, and Dr. Margaret Schneider for their guidance and advice on the completion of this document. Acknowledgement is also extended to Michael Tiburzi for his technical assistance and support over the last few years.

I would especially like to thank my family for their unwavering support and encouragement throughout my academic career. Also, I would like to thank my unborn child who is due any time now for providing me with the impetus to finally complete this project.

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## CHAPTER I

### BACKGROUND LITERATURE REVIEW

#### Introduction

Stress is not even necessarily bad for you; it is also the spice of life, for any emotion, any activity causes stress (Selye, 1978, p. xv).

The problem of stress in police work has been well-documented within the police literature (Coman, 1990; Gudjonsson, 1983; Kroes, 1974; Lawrence, 1984; Sewell, 1983; Webb & Smith, 1980). Specifically, recent research efforts have focussed on the negative impact that exposure to adverse occupational stressors may have on the overall performance of police personnel. Two basic assumptions appear central to this recent emergence of interest, notably that police officers experience stressful encounters on a regular basis, and that a failure to react appropriately to these situations may result in serious repercussions.

For emergency services personnel, including police and fire fighters, the recognition that involvement in stressful work-related situations may negatively impact on their overall levels of both occupational and personal functioning has slowly evolved over time. Although it has been common for researchers to attribute symptoms consistent with anxiety and depression to the actual victims involved in traumatic events, it was not widely recognized or accepted that the police officers and firefighters involved in rescuing these people would also suffer the consequences of exposure to this type of trauma (Grove & Panzer, 1991; Janoff-Bulman, 1992; Mitchell, 1986; Roessler & Bolton, 1978; Worden,

1991). This dilemma is well summarized by Jeffrey Mitchell, a disaster psychologist and founder of the American Critical Incident Stress Foundation (ACISF). In a quote from the Maryland Rescue Journal, Mitchell explains the predicament many rescue personnel find themselves in:

We're dealing with people - firemen, police officers, doctors, nurses, paramedics - who have seen some of the most gruesome sights imaginable, and the assumption is well, they're tough, they're trained, they can handle it. The fact is, a lot of them can't handle it. They're very much affected by it in spite of their training and their macho image. And if they're sensitive, they're deeply and profoundly affected. It's ludicrous to assume that anyone can walk through this carnage - burning tissue, skulls, and body parts - and not become personally affected (Mitchell, 1984, p. 9).

An area of identified concern within the police literature is the difficulty police officers and other emergency services workers themselves have in recognizing stress-related problems and obtaining appropriate help. This appears to be fueled in part by the erroneous assumption that this population is immune to the effects of daily or occupationally-related stress. According to Hillgren, Bond, and Jones (1976), "there has existed an implicit but fallacious assumption that the police officer is somehow less vulnerable than the average individual to the usual job pressures and to those stressors unique to the police function" (p. 32). This misperception appears to stem from the popular media portrayal of law-enforcement officers as being "tough" and not afraid to



face any type of danger. This has sometimes been referred to as the “John Wayne” syndrome (Reiser, 1976). However, Reiser (1976) found that by virtue of inclusion in a high-risk and high-stress occupation such as police work, police officers are at a definite population risk for diseases of adaptation. Prior to describing the specific stress-related problems inherent within the policing profession, a general overview of stress, trauma, and coping is presented.

### Stress and Coping

The construct of stress, although widely studied and popularized in the last decade, is not a new phenomenon, with references to the term dating back to the seventeenth century (Feuerstein, 1986). In response to this persistent and widespread interest, it has become common to find references to the term “stress” in many of the biological and social sciences literature (Lazarus & Folkman, 1984). Despite the general popularity of the term and the proliferation of recent research on stress, a generally accepted definition of the term is difficult to find. This dilemma is summarized by Elliot and Eisdorfer (1982) who state that “... after thirty-five years, no one has formulated a definition of stress that satisfies even a majority of stress researchers” (p. 11). Selye (1974) suggests that since the word stress has different meanings for different people it is extremely difficult to propose a definition of the term which will satisfy everybody. As explained by Breznitz and Goldberger (1982), this lack of agreement on the definition of stress can be seen as a paradigm crisis, or as a result of the rapid expansion of stress research and an indication of the many directions this research can take.

For scientific purposes, stress is defined as the nonspecific response of the body to any demand placed upon it (Selye, 1978). Lazarus (1984) defined psychological stress as

“...a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being” (p. 21).

A more general definition of stress states that:

(Stress is a) reaction to physical injury, violence, severe losses, danger, separation ... Stress can be produced by high-intensity noise, natural disasters, electric shock, and death of a beloved person. There are four typical reactions to stress; psycho-physiological (i.e. psychosomatic) reactions, emotional reactions, disturbances in cognitive functions, and dysfunctions in overt behavior ( Wolman, 1989, p. 324).

The term stress can be broken down by examining it's two major components: stressors and the stress response. Stressors are stimuli that require an adaptation, or as described by Breznitz and Goldberger (1982), external events or conditions that affect the organism (1982). As noted in “The Social Adjustment Rating Scale” (Holmes and Rahe, 1967), the top ten stressors are death of a spouse, divorce, marital separation, jail term, death of close family member, personal illness or injury, marriage, work termination, marital reconciliation and retirement.

According to Feuerstein, Labbe, and Kuczmierczyk (1986), the stress response is a complex reaction pattern that incorporates physiological, cognitive, and behavioral components. The physiological component can be divided into three phases: tonic, phasic, and recovery. The tonic phase is the resting level, the phasic component is the actual reaction to a stressor, and the recovery phase is the response which helps the organism return to the resting phase. The cognitive responses to stressors include fluctuation in

mood states such as symptoms of depression, difficulty concentrating and fatigue. The behavioral component is the actual overt response to the presenting stressor and can include violent behavior, withdrawing, or impatience. Within all these phases, it is important to note that any type of reaction is relational to both the person and the environment (Holroyd & Lazarus, 1982).

Extensive research was undertaken by Hans Selye, a pioneer in stress reactions, in the late 1930's and early 1940's with his findings generally supporting the idea of stress as a nonspecific adaptive response of the body to a certain stimulus (Selye, 1980). According to Selye (1978), the stress reaction was first recognized as a physiological phenomenon by evidence of adrenal stimulation, shrinkage of lymphatic organs, gastrointestinal ulcers and loss of body weight with characteristic alterations in the chemical composition of the body. Later, it was found to include many other symptoms, which together form a syndrome commonly referred to as the General Adaptation Syndrome (GAS) or the Biologic Stress Syndrome (Selye, 1936). According to Selye, the general component of the General Adaptation Syndrome refers to the fact that stress is produced as a result of agents which have a general effect upon large portions of the body. The stress response is general as opposed to being specific as it can be produced by virtually any agent. The adaptive component signifies the fact that stress stimulates defenses and aids in acquisition and maintenance of behavior. Last, syndrome signifies the co-ordination and partial co-dependence of the symptom manifestations or outcomes upon each other.

Selye's conceptualization of the General Adaptation Syndrome involves the implementation of an orchestrated set of body defenses against any form of noxious

stimulus, including psychological threats (Lazarus & Folkman, 1984). The definition of stress was therefore broadened from simply referring to environmental demands, which Selye called stressors, to referring to a universal set of physiological reactions and processes created by an organism responding to these demands.

Selye divided the General Adaptation Syndrome into three phases: alarm, resistance, and exhaustion. The alarm reaction can be conceptualized as representing the "...somatic expression of a generalized call to arms of the body's defensive forces"(Selye, 1982, p. 10). According to Selye, no organism can exist in a continuous state of alarm. During this stage, the body begins to show the initial changes in reaction to exposure to a stressor. Resistance is diminished and if the stressor is severe enough, such as extreme burns to the body, death may result. The resistance stage is characterized by the organism's adaptation to the stressor. Resistance occurs if continued exposure to the stressor is compatible with adaptation. If the organism cannot adapt to the stressor, or if the stressor is too severe, the organism will die. The third stage, exhaustion, will normally follow the resistance stage provided that there continues to be exposure to the stressor at severe enough levels. Generally, this stage is characterized by a loss of the previously acquired adaptation or resistance. Resistance can be rebuilt with sufficient rest, however the overall adaptability will never reach the level previously achieved (Selye, 1982). Unfortunately, our capacity for adaptation is finite and once the energy has been depleted, the organism dies. Disruptions during the resistance stage can lead to diseases of adaptation and encourages various symptoms such as emotional disturbances, headaches, insomnia, sinus attacks, high blood pressure, gastric and duodenal ulcers, rheumatic or allergic reactions, and cardiovascular and kidney diseases (Selye, 1956).

According to Holroyd and Lazarus (1982), contemporary research on stress was fueled by a desire to understand breakdowns in adaptive behavior during extreme situations. Initially, most research focused on the effects of life events such as military combat, concentration camp experiences, bereavement, and traumatic injury and as such, World War II and the Korean War had a profound influence on the direction of stress research (Lazarus & Folkman, 1984). Interest in military-induced stress was of paramount importance as the occurrence of stress in the battlefield impaired performance either by excessively heightening drive tension or by creating interference or distraction. World War II provided researchers with an opportunity to study the effect of profound and extended periods of stress on military personnel. The conceptualization of military stress and methods to reduce soldiers' vulnerability to injury and death provided the mobilizing effect necessary to advance research and theory in the stress field. The Korean War spurred the continuation of stress research with the efforts generally directed towards studying the effects of stress on adrenal-cortical hormones and their impact on performance. These studies were significant in their eventual application to personnel selection and stress management theories. More recently, the focus has shifted to include a wider variety of stressors and attention has been directed towards understanding how the stress experience is conceptualized for each person affected.

The research on combat stress revealed an important finding, namely that a marked variance exists in individuals exposed to stress (Lazarus & Erikson, 1952). This research suggests that individual performance under stress can not be predicted simply by knowing the presenting stimuli. Instead, it was found that the prediction of performance under stress required examination of the psychological processes that maintain individual

differences in reaction. An inevitable starting place was the examination of coping styles and behavior as it appears that, while stress is an inevitable aspect of the human condition, it is coping that makes the big difference in adaptational outcome (Lazarus & Folkman, 1984). Coping can be defined as the “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus & Folkman, 1984, p. 141).

### Posttraumatic Stress

Coping refers to the efforts made by an individual to manage environmental and individual demands (Lazarus, 1966). When an individual perceives a stressor as unmanageable or is unable to formulate effective coping strategies, severe stress reactions may occur. In 1980, the American Psychiatric Association introduced a new diagnostic classification in order to address the commonalities observed in the psychological experiences of people exposed to traumatic events. According to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (APA, 1996), the essential features of Posttraumatic Stress Disorder (PTSD) are:

The development of characteristic symptoms following exposure to an extreme traumatic stressor involving direct personal experience of an event that involves actual or threatened death or serious injury, or other threats to one's physical integrity; or witnessing an event that involves death, injury, or a threat to the physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or close associate (APA, 1996, p. 424).

Although the term Posttraumatic Stress has become "popularized" in the last two decades, the incidence of Posttraumatic Stress Disorder in the general population is approximately the same as that of Schizophrenia, effecting only about one percent of the population at any one time (Helzer, Robins, & McEvoy, 1987). In addition, approximately only one half of those affected by PTSD develop a chronic form of this disorder whereas the other one half experience symptoms which are transitory in nature (Scott, 1992). Shore (1986) concluded that the incidence of PTSD in the general population increases progressively as a result of the intensity of the exposure. This finding supports the increase of reported PTSD diagnoses following combat situations and other events which are emotionally charged and have a prolonged duration.

One significant consideration in the development of symptoms of Posttraumatic Stress is the fact that this disorder can develop in people without any pre-existing symptoms or conditions (Janoff-Bulman, 1992). This suggests that evaluation of the impact of environmental variables on the psychological functioning of the individual is important to the understanding of this disorder. It also challenges the idea that people who lack "psychological strength" are more susceptible to developing Posttraumatic Stress symptoms. However researchers have also investigated the impact of pre-trauma characteristics on the development of trauma symptomology (Helzer, Robins, & McEvoy, 1987; McFarlane, 1988). In a 1988 study, McFarlane suggested that the major predictors of PTSD were, in fact, pre-trauma characteristics. This finding indicates that individual characteristics, which are by definition unrelated to the trauma, also need to be considered when assessing the etiology of the symptoms. Similarly, a study by Helzer and colleagues (1987) found that behavioral problems before the age of fifteen were the best predictors

for developing PTSD symptomology in the event of a trauma. This study looked at a variety of behaviors including stealing, lying, truancy, running away from home, and misbehavior at school.

According to Janoff-Bulman, “a response to any life event must be understood in terms of the particular victim involved - it is how the event is understood and conceptualized that determines whether it is traumatic or not” (1992, p. 52). This notion of perception is important when evaluating PTSD, especially in its chronic form. An understanding of the interaction between the traumatic event and the cognitive foundation with which the victim approaches the crisis yields a better awareness of the underlying issues involved in recovery. It is important to acknowledge individual differences of persons not only in terms of actual trauma exposure but in their perception of, and response to stressful situations (Appley & Trumbull, 1967; Lazarus, 1966).

Exposure to long-term stress has been shown to contribute to changes in personality as an individual attempts to alter their typical coping strategies (Singleton & Teahan, 1977). When an individual is exposed to severe or prolonged levels of stress, three transitory stages or events usually occur. These events are defined as the anticipatory or warning stage, the impact or confrontation stage, and the post-impact or post-confrontation stage (Lazarus & Folkman, 1984). The anticipatory stage occurs before the disaster or trauma has occurred. The central issues during this stage include whether the anticipated threat will occur, when it will happen, and what will happen. While waiting for an anticipated threat, people’s thoughts about the event affect the type of reactions that will result. Coping is utilized during this stage. During the impact stage, many of the thoughts evoked during the previous stage are no longer relevant since the



event has now begun. The person begins to assess whether the event is as bad, or worse than anticipated and must reassess the event. During the post-impact stage, the person has survived the event and is now concerned about cleaning up any psychological, physiological, or physical damage that has occurred. Although the event has ended, it will continue to affect the person in the form of a trauma, or a new set of anticipatory processes.

### Trauma

According to the DSM-IV (APA, 1996), traumatic events may be experienced in different ways. They may be experienced directly, such as through participation in military combat, or they may be experienced indirectly, for example witnessing another person suffer a serious injury or death as a result of an accident. As these events are not typical in our everyday lives, the average person may be psychologically ill-prepared or, in extreme cases, completely unprepared to deal with the traumatic situation or event in an effective manner. Essentially, given minimal prior exposure to traumatic situations on a regular basis, an individual may find themselves struggling to develop and/or implement effective coping strategies under extremely stressful conditions.

One of the key themes identified by trauma survivors is mortality (Janoff-Bulman, 1992). Traumatic events are often life or death situations where the notion of survival becomes of central importance. As such, an individual begins to consider the issue of survival when he or she is faced with any *perceived* threat to one's mortality. That is, even if a situation is not viewed by others as being highly dangerous, the participant's perception of danger is what will determine the intensity of their reaction. As a result of the perception that one's physical mortality is being, or has been challenged, unique issues

not normally experienced on a day to day basis emerge and need to be addressed. According to Janoff-Bulman (1992), the aftermath of traumatic events is characterized by the victim's continued terror centering on their own vulnerability. This vulnerability can be experienced directly by the victim or indirectly by fearing for a loved one or watching another person face the trauma.

Victims of trauma can be categorized into three broad categories (Janoff-Bulman, 1992). First, direct victims are those people who have been injured following a traumatic event. These people often suffer from anxiety, depression, feelings of hopelessness and helplessness, recurrent intrusive thoughts and other symptoms found under the definition of Posttraumatic Stress Disorder. The second category refers to the indirect victims and includes the family and friends of the direct victims. Indirect victims tend to suffer from guilt, a reaction known commonly as "guilt of the survivor". The last category describes the hidden victims. This group of people includes the police, fire fighters, nurses, doctors, and other emergency personnel whose jobs expose them to human trauma and suffering on a daily basis. The impact of occupational stress on these hidden victims is discussed below.

#### The Relationship Between Stress and Police Work

It is a well-documented fact in the police literature that police work is one of the most stressful occupations in the world (Coleman, 1986; Reese, 1986; Selye, 1976; Violanti, 1993). In fact, policing has been rated to be among the top ten stress-producing occupations by both the National Institute on Workers Compensation and the American Institute of Stress (Violanti, 1993). According to several researchers, the belief that policing is a highly stressful occupation is not limited to the police community. References

in various academic journals and opinions expressed by members of the lay community also support the idea that police officers are among the most stressed of all occupational groups (Fell, Richard, & Wallace, 1980; Hart, Wearing, & Headey, 1993; Sigler & Wilson, 1988).

Police work is often viewed as being highly stressful because it is one of an elite number of occupations where an employee has the potential to routinely face physical dangers and to be in the position of putting one's life on the line for the welfare of others (Fain, 1988). In addition, an officer may be subjected to violence, cruelty, and aggression that lay people do not encounter in their daily lives. They may find themselves exposed to victims of horrendous criminal acts and also to the perpetrators of these deeds. Police officers are often called upon to make extremely critical decisions, many of these under situations of high stress (Territo & Vetter, 1983). In addition, they are required to enforce social order under circumstances which are not always ideal, thereby adding to mounting stress levels (Fell, Richard & Wallace, 1980).

Despite the fact that both the professional literature and prevalent lay opinion support the idea of police work as being a highly stressful occupation (Fell et. al., 1980; Sigler & Wilson, 1988), the lack of empirical evidence to support this claim has led to research in the area of police stress being criticized on theoretical and methodological grounds (Anson & Bloom, 1988; Lawrence, 1984). Hart (1993) attributes this problem to two fundamental needs in the research of police stress: stress research with this population has to be driven by a theoretical framework that defines the relationship between police officers and their work environment, and appropriate assessment measures need to be utilized with this population.

## Stress Research and the Police Profession

A review of the available literature on police stress reveals some relatively recent attempts to address some of the earlier concerns identified regarding research in this area. Sewell (1983) attempted one of the few early studies aimed at providing an empirical measure of stress specifically designed for a police population. Sewell based his research on the Social Readjustment Rating Scale developed by Holmes and Rahe (1967). Specifically, he employed weighted scores to reflect the degrees of readjustment believed to be associated with traumatic, role-related police experiences. The result is the Critical Life Events Scale for Law Enforcement Officers (1983). However, despite the fact that this measure was specifically designed for use with police personnel, two key problems were identified. First, there is a scarcity of information related to the empirical validation of this scale. Second, the use of a 'critical events' model to assess stress (as opposed to a 'daily hassles' model) may be viewed as problematic by some researchers. Most police officers will complete their careers without experiencing a major critical event. As opposed to experiencing critical event-related stress, the majority of stressors reported by police officers tend to focus on the bothersome aspect of the police organization rather than the dangerousness or unsavory aspects of the policing role (Kirkham & Wollon, 1980).

As a result of the discrepancy between the daily hassles versus the critical life events approach to stress measurement, a substantial body of research has appeared that generally favors the use of a daily hassles model of stress management. Kanner, Coyne, Schaefer, and Lazarus (1981) attempted to address the limitations of the life events approach through the development of the Daily Hassles and Uplifts Scales (DHUS).

These scales were designed to measure the frequency and intensity of minor daily experiences that are appraised as being significant for a person's well-being (Hart et al., 1993). According to Lazarus (1984), daily hassles are events which are perceived as harmful or threatening and daily uplifts are events appraised as positive or favorable.

Similarly, Lawrence (1984) developed the Police Stress Inventory (PSI) in an attempt to measure the common sources of police stress. The PSI was constructed using the primary categories of police stress earlier identified by Kroes (1974). These categories are court-related stressors, administrative concerns, equipment problems, and community relations. Unfortunately, the use of the Police Stress Inventory is limited as it has not been standardized on a sufficiently large sample of subjects. This has been identified as limiting its generalizability (Lawrence, 1984).

#### Self-Identified Stressors in Police Work

As stress-related effects have been shown to impact negatively on a police officer's physical, psychological, and social well being, it is important to have a clear reference of what police officers themselves perceive as stressful and/or dangerous. A commonly held assumption in a great deal of the police literature is that the police role is inherently stressful due to the type of work itself. Cullen, Link, Travis, and Lemming (1983) researched a possible source of this stress, namely occupational danger associated with policing. Cullen and colleagues provided two initial hypotheses for this study. First, police officers may be sensitized to the potential risks of any citizen interaction or job-related duty and may therefore report their job as containing a significant danger component. Alternatively, police officers may recognize their everyday role as essentially routine, adjust to this reality, and perceive very little on-the-job threat.

Two paradoxical findings with seemingly contradictory qualities were identified in this research. The first is that police officers report their jobs as being both safe and unsafe. This apparent inconsistency can actually be easily understood by distinguishing between an officer's perceptions of how much injury actually occurs on the job and his or her perception of the potential for injury on the job. The reality of the policing role necessitates intervening in high risk situations where the potential for injury is a significant concern but where the actual overall injury rate is not significantly high.

The second paradox uncovered by this research involves the dual role of perceptions of danger as being both functional and dysfunctional. Once more, this finding is not completely contradictory. Given the reality of the threat a police officer may encounter on the job it is essential that he or she remain aware of this threat in order to be prepared at all times. However, vigilance to this potential danger, while necessary to a certain degree, is not without its negative effects on the officer. Specifically, data from this study indicates that a hypervigilant orientation contributes to increased work stress and to the manifestation of depressive symptomology (Cullen et al., 1983).

In order to identify the specific sources of police stress, Violanti and Aron (1995) administered the Police Stress Survey (PSS) to a sample of 110 full-time officers involved in active duty. Of these 110 officers, 94.2% were male and 90.3% were Caucasian. The Police Stress Survey, developed by Spielberger, Westbury, Grier, and Greefield in 1981, is a sixty-item inventory aimed at measuring stressors related directly to the police profession. These stressors have been defined as factors in the police environment external to the officer and subjectively perceived as being bothersome or frustrating (Lazarus, 1981). A broad range of stressors, including those which are considered both

role-specific and role-neutral were found through the administration of the Police Stress Survey. Role-specific stressors can be defined as those which are directly related to the undertaking of the policing role, such as killing someone in the line of duty, involvement in high speed car chases, or making arrests. Role-neutral stressors are those which are common to other professions, such as shift work, insufficient personnel to adequately maintain a specific quality of work, and lack of recognition for positive work performance.

The results indicated that police officers may regard both role-specific and role-neutral events as being stressful. Police shootings (role-specific), the need to use force in the commission of one's duties (role-specific), shift-work (role-neutral), and inadequate support from supervisors (role-neutral) were identified as four highly ranked stressors. Within police shootings, killing someone in the line of duty and experiencing the shooting of a fellow officer ranked highly. The necessity of taking another person's life or watching a fellow officer die in the line of duty was found to be extremely stressful for most officers (Violanti & Aron, 1995). Several effects may occur as a result of a shooting experience. These include a heightened sense of danger even after the event has ended, anger, flashbacks, feelings of isolation, emotional numbing, sleep difficulties, and depression (Solomon & Horn, 1986).

Further research into the primary sources of police stress was undertaken by Kroes, Margolis, and Hurrell (1974). They interviewed one hundred male police officers from a Cincinnati force using a semi-structured interview format. The interview obtained information about the officer's background, perceptions of job stress, and health status. The most frequently mentioned stressors were categorized as follows: administration, courts, community relations, equipment, line of duty/crisis situations, changing shift

routines, and isolation/boredom/inactivity. In summary, the most significant stressors for police personnel were situations which threatened their sense of overall professionalism, such as being reprimanded by supervisors. This finding indicates that although involvement, or the potential for involvement in dangerous police assignments can lead to stress, organizational factors such as administrative concerns (role-neutral stressors) are more problematic with respect to the development of stress symptoms.

The preceding studies provide information on understanding the most commonly identified sources of police stress. As the results indicate, the etiology of this stress does not stem exclusively from the dangers associated with police work but also includes stressors related to the organizational practices of police departments. Reese (1986) groups the specific factors related to stress in policing into four categories: Organizational Practices and Characteristics, the Criminal Justice System, the Public, and the specifics of Police Work itself. Other researchers have limited these groups even further, finding that the majority of stressors can fall into either Organizational Practices or the inherent nature of Police Work (Martelli et al., 1989; Spielberger et al., 1981). Regardless of categorization, all of these sources of stress form an additive combination of unusual occupational stressors which are separate from any personal stressors the officer may be bringing to the job.

The citing of organizational practices as a primary source of stress in police work can be initially surprising. Given the more common connection between police stress and job danger, it is interesting to find a strong association between stress and organizational practices. Among the factors commonly cited within the police organization as being stress-inducing are the authoritarian structure, lack of participation in decisions affecting



daily work tasks, lack of administrative support, a punishment-centered philosophy, and unfair discipline (Kroes, 1986; Reiser, 1974).

According to Kroes (1985), the stressors of administration are a very real problem for police officers, especially given the quasi-military structure of the organization. Related administrative concerns include exorbitant paper-work requirements, strict dress code standards, antiquated promotional processes, excessive red tape, the need to be respectful and responsive to one's superior officer, and being "low man on the totem pole". The administrative dilemma is well summarized by Reiser:

In the traditional police organization, authoritarian management approaches predominate with relatively little attention or concern being given to individual problems or human factors. Typically, the jackass fallacy is operative. This is based on the carrot and stick approach to personnel management which assumes that without either dangling a tasty reward in front of someone's nose or beating him with a stick he will not move (Reiser, 1974, p. 157).

Lack of a voice in decisions that affect one's job and life was found to be a major contributor to job stress in policing (Kroes, 1985). Under this category, the need to follow prescribed procedures in all cases, and the tendency to under-utilize an officer's personal areas of skill contribute to the overall problem. Additionally, the conflict between an officer being required to work an assignment, such as desk duty when the preferred assignment is elsewhere may lead to frustration and heightened stress levels. The quasi-military structure of the policing organization has also been cited as a source of potential stress. Specifically, police officers may feel that they have limited opportunities

to use discretion or judgment without having to justify their actions. Anytime officers make decisions on their own, they can be second-guessed with dire consequences resulting if their decision is overruled (Kroes, 1985). This can lead to feelings of helplessness and a sense of being unsupported.

Not surprisingly, inadequate support from supervisors was a highly ranked concern. Given the structure of the policing organization, significant interpersonal relationships between police officers and their supervisors is difficult to achieve. Notable is the finding that Black police officers report greater concerns with inadequate support than reported by Caucasians or Hispanics (Beehr, King, & King, 1990). This is significant since researchers have found the role of, or the perception of support to be important in stress control (Coyne & Downey, 1991). The final level of police-specific occupational stressors that will be addressed is broadly referred to as job conflict. Job conflict can be expressed in a variety of ways. The problem of having more than one boss (generally anybody of higher rank) leads to attempts to fulfill different sets of expectations for each senior officer. The need to remain civil and polite to people whom are often threatening or vulnerable is sometimes difficult. This is highlighted by Wambaugh who states that "cops meet an element of society you guys don't see, and they are seriously affected by this dose of human misery" (Wambaugh, 1985, p. 25). Finally, the need to enforce laws that the officer may personally disagree with can be troublesome, especially if a quota system is in place.

Despite the growing understanding of the organization's role in contributing to police officer stress, other sources of identified stress are role-specific. According to Reiser,

The officer is an authority symbol in the community and automatically the target of large amounts of anger and resentment. He often works in a dangerous and threatening environment where injury or death are real possibilities. In addition, he is the omnipresent mental health agent who is called upon to handle traumatic emergencies and crises of all types (Reiser, 1974, p. 26).

Other stressors commonly reported as being inherent in police work include danger, shift work, public apathy, boredom, a sense of uselessness, and dealing with misery and death (Kroes, 1986; Spielberger et al., 1981; Violanti & Aron, 1995). Danger can be viewed in different forms including real danger during operations such as undercover work and unexpected danger such as that found when stopping a vehicle during a routine traffic check or entering a building (Aron, 1992). Exposure to human suffering and death may result in officers adapting an unfavorable view of both their lives and occupation (Aron, 1992; Spielberger et al., 1981). Boredom on the job and dissatisfaction with the essentially routine and repetitive nature of the work may result in feelings of uselessness and frustration (Kroes, 1986).

Shift work ranked highly as a police stressor. Occupational studies have found that altering shifts may affect sleep patterns, eating habits, family life, and the psychological health of the officer (Kroes & Hurrell, 1975; Violanti, 1984). Shift work is problematic as there is a difficulty in adapting physiologically and psychologically to new sleep-wakefulness cycles (Kroes, 1985). According to Wilkinson,

The human adult is an animal whose body is tuned by evolution and training to go about it's business during the hours of daylight and to

sleep during those of darkness. Ask it to work at night and sleep during the day and it does both rather badly (Wilkinson, 1971, p. 27)

Selye (1978) notes that peptic ulcers are more common among shift workers, attributing this specifically to the especially fatiguing conditions and the fact that night work is more conducive to the development of mental distress. Rotating shift work, as used in policing, has been found to produce the most severe disturbances in corticoid and adrenaline production. Rotating shifts not only effect police officers' social contacts and supports but often lead to inadequate sleep for officers which in turn effects their physiological state (Violanti, 1984).

#### Stress and Police Personnel

Stress research has shown that a relationship exists between stress levels and the development of physical illness. This is particularly relevant for people in occupations such as air traffic controllers, hospital emergency room staff, social workers, and police officers (Fain & McCormick, 1988). Occupational stress is a major area of concern for both police officers and their organizations (Evans et al., 1992; Gudjonsson, 1983; Sewell, 1983). Police officers may be exposed to a variety of highly stressful scenarios in the execution of their duties (Evans & Coman, 1988; Kroes, 1985) and this exposure may result in a variety of physical, psychological and social outcomes (Evans, Coman, & Stanley, 1992). A frequently overlooked correlate to this is the relationship between stress and accident proneness. McGuire (1976) found that accident proneness varies over time as a result of the individual's ability to deal with stress. As a result, police personnel with low stress tolerance and poor coping skills may be at higher risk for accidental

injuries.

Violanti (1993) found that, in comparison to other occupations, police officers experience a higher rate of stress-related physical and emotional disorders including alcoholism. Similarly, Blackmore (1978) reported that police officers have high rates of heart disease and stomach disorders with a divorce rate which was twice as high as compared to members of other occupations. Additionally, he concluded that the police officer suicide rate was two to six times the national average. Axelberd and Valle (1979) found that police officers experience unusually high rates of divorce, alcoholism, coronary heart problems, ulcers, headaches, suicide and emotional problems, and Kroes (1974) concluded that no other occupation exceeds police work in combined standard mortality ratios for coronary heart disease, diabetes mellitus and suicide.

Guralnick (1963) contributed some disquieting statistics regarding the effect of role-related stress on police officers. He found that out of one hundred and forty-nine occupations examined, only ten exceeded policing in terms of rates of heart disease, diabetes and suicide. However, when he considered only professional occupations, police officers actually ranked the highest in heart disease and demonstrated significant rates of suicide. In addition, Guralnick found that, longitudinally, police suicides actually outnumbered police homicides, with ninety-four suicides compared to fifty-four homicides per one hundred thousand population.

Several studies have uncovered psychological factors associated with the policing role. Breier, Albus, Pickar, and Zahn (1987) found that constant exposure to stressful police-related occupational stimuli has the potential to result in alterations of transient mood states, and King, Stanley, and Burrows (1987) found negative effects on cognitive

processing. Geiger (1984) found that officers who endure traumatic events experience emotional states such as fear, anxiety, guilt, grief, depression, sadness, anger and shock. Evans, Coman, and Stanley (1992) found that police officers involved in shooting incidents reported psychological disturbances characteristic of Posttraumatic Stress Disorder, including time distortion, sleep disorders, and emotional reactions such as anger and grief. Reiser (1976) documented similar results, finding that, in situations that were highly stressful, police officers may display the symptoms commonly associated with Posttraumatic Stress Disorder.

### Career Stages in Policing

One area that has continued to receive interest within the police literature is the identified relationship between job stress and an officer's career stage. A well-cited early research study undertaken by Neiderhoffer (1967) introduced the concept of a transitory stage process which police officers pass through during their careers. These stages are relevant to the study of stress in the policing profession as they have been shown to directly impact on a police officer's stress level. According to Neiderhoffer, the four stages are as follows: Alarm, Disenchantment, Personalization, and Introspection.

The Alarm Stage occurs in the first five years of an officer's career and is essentially the result of the novice officer realizing that police work is different than what was learned at the academy - it is the equivalent of "reality shock" setting in (Niederhoffer, 1967). Stress levels are expected to rise sharply during this period as the officer is exposed to the reality of the policing role. Two source areas of stress are identified during this stage. First the rookie officer experiences hands-on police work which may entail the viewing of unpleasant situations such as injured citizens or dead bodies. Second, the

officer may perceive that the stress that is encountered during the execution of police duties is taxing his or her personal resources. According to Niederhoffer (1967), the statement “I don’t think I can handle the job” is common among young officers.

The Disenchantment Stage occurs from the sixth year until mid-career (12-14 years) and is characterized by the idealistic views about police work gathered at the academy becoming further and further apart from the realities of the position. Police officers become disenchanted with the public’s perception and treatment, and of the problems in police administration. Niederhoffer found that many officers adopt cynicism as a coping mechanism and that stress continues to build above that of the Alarm Stage. The cause for this increased stress can be traced to the officer’s feelings of personal failure at not being able to deal with the pressures of the role.

The third stage identified by Niederhoffer is the Personalization Stage which spans the end of mid-career to possible retirement at twenty years of service. As the officer reaches the end of their career, they may no longer worry about the pressures of the policing role. Their priority shifts to include things that are unrelated to their job and as such, this change in values results in a lowered stress level. In addition, there will be less fear of failure and this will also contribute to decreased stress levels. The final stage, Introspection, covers the time period after twenty years of service. Stress levels continue to decrease as officers begin to feel more secure in their role and are aware that they are approaching retirement.

Niederhoffer’s theory of police officer stress as a transitional, process variable was supported by later research undertaken by Violanti (1983). Violanti’s research on five hundred full-time New York State police officers confirmed that stress increases gradually

over the Alarm Stage and continues to increase into the Disenchantment Stage. After this, stress levels generally begin to decrease except for some increase prior to the twenty five-year mark, possibly suggesting retirement-induced stress. Once officers passed this stage, stress levels once more began to decrease. Violanti repeated these findings in a 1993 study, noting that the Disenchantment group once again had higher stress scores than the rookie group. He concluded that the rookie officer might still have high levels of idealism which help to mask the stress of the job. However, after five years, the reality of the stress and frustration of police work set in, causing stress levels to increase. Both Niederhoffer's (1967) and Violanti's (1983/1993) research is important in providing an empirical basis for variable stage-specific stress.

#### Personality Traits in Police Officers

Given the problems associated with exposure to a variety of stressors in the policing profession, it is important to determine whether a relationship between specific personality traits and stress susceptibility exists. Police work incorporates a variety of general and specific stressors that have the potential to negatively impact on an officer's ability to undertake their day to day role and effectively deal with difficult or risky situations. As such, an identified relationship between personality factors and police officers stress tolerance levels would prove useful in both the recruitment and training of police personnel.

According to Reiser (1976), a perception of having a heavy responsibility load, fear of failure, and worry about being responsible for other people's welfare increases stress symptoms and the risk of cardiovascular disease. In addition, Selye (1982) found that individuals who are anxiety-prone or conscientious are more susceptible to



experiencing stress reactions independent of the situational variables. As such, it is crucial for professionals working in the field of police psychology to understand the importance of this variable on work performance. As summarized by Johnson, “stress and strain are the lot of police officers and firefighters, therefore there is a continued need for careful scrutiny of their psychological situation as a significant requirement for determining their eligibility for work in these areas” (Johnson, 1990, p. 86).

Clark (1989) found that emergency service workers, including police officers, experience more job-related stress than other occupations and therefore need to develop more effective coping strategies. In general, this is accomplished by changing perceptions of events or situations, and adapting behaviorally to the environment. However, it can also involve adopting or changing specific aspects of one’s personality in order to better meet the occupational role demands. The development of assertive communication and behavior is an example. In general, however, many of the identified traits may be pre-existing rather than developed on the job, and as a result, candidates for policing positions may select themselves for police work as a result of these traits (i.e. adventure-seeking).

Unfortunately, in response to role-specific or generalized stressors, some officers develop or adopt maladaptive coping styles such as use of, or reliance on alcohol or drugs, and the adoption of traits such as deviance and cynicism. These maladaptive coping styles not only serve to increase the officer’s personal stress but also that of the entire department. However, as summarized by Chandler (1979), some of the personality traits or changes that develop are adaptive and therefore increase the officer’s ability to cope with the pressures and stressors of the job. An inability to adapt to the policing role has the potential to lead to early burnout or resignation due to job dissatisfaction.

Although differences exist both inter- and intra-departmentally, some traits have been identified as being correlated with successful policing. These include self-confidence, assertiveness, extraversion, conventionality, and functional intelligence (Hogan & Kurtines, 1975). Lawrence (1984) identified the need to be reserved, detached, critical, conscientious, persistent, socially aware, self-sufficient, resourceful, preferring of one's own decisions, practical and down to earth. Hargrave and Hiatt (1988) found that a lack of demonstrated anxiety and general psychopathology, an action orientation, extraversion, and dominance were consistently identified as being important by police researchers. As a result of research in this area, a simplified police officer profile was constructed, with success in policing being correlated with the following characteristics: Extraversion, Independence, Assertiveness, Guardedness, Control, and the presence of above average intelligence (Hargrave & Berner, 1984). In addition, Hurrell (1977) found that 75% of police officers can be categorized as Type A personalities, with the Type A's typically seeing themselves as hardworking, competitive, and intolerant of, and easily frustrated by others (Rosenman, 1978).

In identifying candidates for policing positions, Fitzsimmons (1984) found that excessive dependency, passivity, a lack of assertiveness, poor resiliency in responding to ordinary life stressors, and a poor capacity for interpersonal relatedness were correlated with a poor occupational outcome. Difficulty accepting authority and high scores on artistic, aesthetic, abstract intelligence and responsibility scales were also associated with poor police performance (Hogan & Kurtines, 1975; Mills & Bohannon, 1980). Overall, Eber (1991) found that candidates for policing positions were “remarkably free from serious psychopathology”. This included being less depressed and confused, with a lower

likelihood of engaging in self-harm than the general population. Police officer candidates were also found to be higher on thrill-seeking and disregard for social conventions (Lorr & Stack, 1994). The identification of specific personality traits related to successful occupational outcome has led to the widely accepted use of pre-employment psychological assessment for all law enforcement candidates.

### Employment Testing

During the past thirty years, employment testing has emerged as an important component in the hiring practices of a wide variety of occupational groups. Predominantly, employment testing has evolved to help organizations distinguish among job candidates with the assumption being that certain scores on a predetermined test will be associated with a certain level of performance on the job (Pynes, 1994). According to Kelman (1991), there are two basic functions of the employment testing protocol: to determine what individuals are presently able to do, and to determine their aptitude for mastering job-related skills.

In order to address the potential for discrimination in the use of pre-employment testing, the Uniform Guidelines on Employment Selection Procedures were adopted in 1978. The Uniform Guidelines provide a general set of principles concerning the use of tests and other employment selection procedures. The guidelines state that if the pass rate for any group is less than eighty percent of the score of the highest passing group, than a discriminatory impact is demonstrated (Pynes, 1994). The Act which preceded the Uniform Guidelines was Title VII of the 1964 Civil Rights Act. This Act allowed for the use of ability and aptitude tests for employment decisions provided that discrimination against a group was not the intended purpose of these tests (Pynes, 1994). However, in

1971 the Supreme Court of the United States concluded that Title VII proscribed “not only overt discrimination but also practices that are fair in form, but discriminatory in operation” (Pynes, 1994, p. 103).

### Screening of Police Officer Candidates

The screening of police officer candidates has undergone many changes over the past three decades (Hogue, Black & Sigler, 1994). According to Wright, Doerner, and Speir (1990), the twentieth century has witnessed concern over the qualifications of its criminal justice system personnel. Of relevance was the 1967 President’s Commission on Law Enforcement and the Administration of Justice finding which revealed that selection criteria for sworn personnel were virtually non-existent. The expanded use of psychological screening was subsequently endorsed by the President’s Commission and by the National Advisory Commission on Criminal Justice Standards and Goals (1967). This resulted in successful challenges to many of the existing gender and physical standard discrepancies, and cast doubt over the relationship between physical size and effectiveness in law enforcement (Hogue et al., 1994).

A variety of techniques are used in the selection process of police officers, including medical/physical examinations, a background or reference check, psychological screening, and a pre-employment recruitment interview (Inwald, 1985). A review of the biographical information provided by the applicant usually occurs at an early stage in the recruitment process and is responsible for selecting out candidates based on pre-determined criteria. Malouff and Schutte (1985) determined that biographical information can effectively predict future job performance of police officers. Biographical data which tends to predict failure in policing includes: the presence of motor vehicle code violations,

convictions for offenses other than vehicle code violations, being fired from a previous position, lack of stability in the applicant's work history, divorce, a poor military record, departmental complaints, and civilian complaints.

Psychological screening is now a generally accepted component of the recruitment process. The use of psychological testing in the police and firefighting fields is not a new development, with references dating back to the 1920's (Kenney & Watson, 1990). Despite its lengthy history, the use of pre-employment psychological screening tools has not consistently been perceived as being advantageous (Murphy, 1972; Poland, 1978). However, more recently, a greater number of police departments have chosen to incorporate psychological testing as a significant component of their pre-employment screening programs (Hiatt & Hargrave, 1988). As a result, several legal and ethical issues have surfaced with respect to the practice of employment testing. Concerns include the issue of the applicant's right to privacy, the validity of the psychological instrument or battery of tests being used, the lack of a generally agreed upon definition of what constitutes an "undesirable" candidate profile, and the existence of possible racial and/or sexual bias inherent in the tests or testing process (Inwald, 1985).

Although pre-employment testing remains controversial, the realization that police officers require a variety of social, intellectual, and physical traits for success in this field has led to increased interest in standardizing a testing protocol for law enforcement agencies (Hiatt & Hargrave, 1988). In addition, given the stress and strain that are common in policing, there is a continued need for careful consideration of an applicant's psychological condition in order to determine their ability to handle work in this demanding field (Johnson, 1990). The selection of police officers is an important and

demanding task (Hogue et. al., 1994). As the nature and scope of police work changes to incorporate specialty areas such as community-based policing initiatives, the criteria on which to base candidate success or failure also changes.

The variability of police officer screening methods has prompted the development of recommendations on what constitutes a comprehensive screening program for this population. From an organizational perspective, the psychological screening of police officer candidates may adhere to the following guidelines (in The Police Chief, 1990):

1. Pre-employment psychological assessment should be used as one component of the overall selection process. Psychological recommendations should not be used as the sole criterion for a “hire/no hire” decision.
2. Data on those psychological attributes considered most important for effective officer behavior should be obtained from job analyses, interviews, surveys, or other appropriate data-gathering techniques to aid in the development of hiring standards.

Further, guidelines adopted by the IACP, Psychology section (1986) state that:

1. A comprehensive test battery including objective, validated psychological instruments should be administered to applicants.
2. Written tests selected should be validated for use with law enforcement officer candidates.

Historically, the psychological assessment of police officer candidates generally involved the utilization of assessment measures aimed at identifying disqualifying traits or detecting the presence of psychopathology. Candidates exhibiting these identified traits were ordinarily excluded or “screened out” of the selection process. Success at screening

out potentially negative candidates continues to be a financial imperative for many police departments as the cost of recruitment and training, coupled with the effects related to understaffing following premature termination is an organizational concern (Wright et al., 1990). More recently, with the expansion of research in the area of identifying successful police officer traits, the method of screening out candidates based solely on poor findings at the psychological stage has largely changed to a “screening in” process. Applicants who meet set criteria continue on in the process and those who show signs of personality maladjustment or do not meet the identified criteria are typically declined (Inwald et. al, 1991; Shusman & Inwald, 1991).

Despite the fact that psychological profiles of police officer candidates tend to be relatively homogenous, Bennett (1990) found that the screening process has proven to be valuable in differentiating the unstable and unsuitable applicants from the acceptable applicants. However, it has not been able to predict which candidates will make the most successful police officers. As such, the psychological screening process typically employed by police agencies continues to “screen out” unsuitable applicants but has had less success differentiating between candidates who will excel on the job and those who will perform in the average range.

Examination of available psychological profiles of law enforcement applicants has commonly indicated that this group, as a whole, tends to be relatively well adjusted (Hargrave et. al, 1986). In general, applicant profiles have a tendency to fall within normal limits, with identified low-level deviations occurring in certain predictable areas. These findings have led some researchers to conclude that psychologically healthy individuals are apt to select themselves for careers in the law enforcement field. However,

another reason to account for this finding is the fact that psychological screening occurs relatively late in the selection process and is preceded by various other disqualifying measures (Hargrave et. al., 1988).

The continued difficulty differentiating between acceptable candidates for policing positions may be a result of an adherence to stereotypical ideas regarding the requirements for success in policing. It may also be related to a lack of knowledge regarding the multidimensional role demands placed on police officers or the lack of available job analyses defining what constitutes the policing role. One way to address some of these concerns is to analyze the physical, emotional, intellectual and social requirements for various types of police functions then design measures specifically to test for these desired qualities (Bennett, 1990).

In addition, a major stumbling block, namely the lack of reliability and validity in the screening process must be overcome through the development of accurate job-relatedness studies and the implementation of hiring recommendations made on solid validity studies. Dunnette and Motowidlo (1975) researched the effectiveness of patrol officer characteristics and found that the following dimensions were significant in the police role: crime prevention, using force appropriately, maintaining public safety, giving first aid, traffic maintenance and control, investigating and following up on criminal activity, report writing, handling domestic disputes, dealing constructively with the public and being an effective team player. Commitment, dedication, conscientiousness and the maintenance of integrity and professional ethics were also noted as being significant.

#### Psychological Assessment of Police Officer Candidates

Since the 1960's, candidates for policing positions in many departments have been



screened for personality problems. Although doubts persist regarding the effectiveness of the psychological screening process, specifically the tools used in this process, its usefulness as a predictive measure has been widely accepted (Bennett, 1990). Despite this, the screening process is not without its critics. The lack of significant and consistent findings in the standard psychological battery has led some researchers to question the validity of the process (Stratton, Parker, & Snibble, 1984). Saxe and Reiser (1976) found that scores on one of the most widely used psychological screening measures, the Minnesota Multiphasic Personality Inventory-Revised (MMPI-2) were impractical for predicting on-the-job success of police applicants. Further, the responses generally given by police officer candidates on the MMPI-2 tended to be highly defended, thereby resulting in a distorted and difficult to interpret profile (Gottesman, 1976).

Further concerns regarding the reliability and validity of the psychological screening process are based on the fairly recent recognition within the police psychology field that there may exist more than one ideal police personality on which to form guidelines (Bennett, 1990). This would imply that using standard generic testing criteria for all police populations (and for all police roles) is inaccurate and ineffective. Additionally, concern over the fact that many psychologists working in law enforcement agencies are making critical decisions on hiring applicants based on tests which were originally developed, validated, and normed for the diagnostic screening of populations other than law enforcement officers persists (Inwald, 1985). With respect to reliability of the assessment process, Schoenfeld, Kobos, and Phinney (1980) found that experts asked to rate applicants who were previously screened into either a highly successful or generally unsuccessful candidate group differed from the initial rating about one-third of the time.

This finding has serious implications on the reliability of the pre-employment psychological screening process.

Despite the problems identified regarding the effectiveness of the standard police officer screening procedures, some researchers maintain support of the process. Merian and Stefan (1980) concluded that psychological measures such as the Minnesota Multiphasic Personality Inventory used in the police officer selection process demonstrate sufficiently valid indications of usefulness. In addition, following research into the predictive validity of the screening process, Hiatt and Hargrave (1988) concluded that the process was successful. They studied fifty-five police officers who had been judged as either “suitable” or “unsuitable” for hire following psychological screening. For various reasons, the department hired some subjects who had been deemed “unsuitable”. In this study, the psychological screening did in fact correctly classify the job performance of a significant number of officers.

The typical pre-employment psychological screening of law enforcement officers consists of the administration of several standardized psychological tests and an individual clinical interview (Hiatt & Hargrave, 1988). One of the most commonly used non-projective personality tests in law enforcement screening is the Minnesota Multiphasic Personality Inventory (Hogan & Kurtines, 1975; Saxe & Reiser, 1976). The MMPI consists of 566 test items which provide information on ten clinical and four validity scales. These clinical scales are as follows: Hypochondriasis, Depression, Hysteria, Psychopathic Deviate, Masculinity-Femininity, Paranoia, Psychasthenia, Schizophrenia, Hypomania, and Social Introversion. The validity scales are designated as the Cannot Say scale, the Lie scale, the Infrequency scale, and the Defensiveness scale. These scales,

along with their designations are presented in Appendix A. In 1989, the Minnesota Multiphasic Personality Inventory was updated and restandardized (Dahlstrom, Butcher, Graham, Tellegen, and Kaemmer, 1989), with the revision involving modernization of content, elimination of problematic or objectionable items, collection of more representative normative data, and the development of some new scales (Graham, 1990).

In addition to the MMPI/MMPI-2, the use of a second objective measure geared towards assessing "normal" behavior is recommended by the guidelines adopted for the screening of police officer recruits (Hargrave & Berner, 1984). This requirement can be met through the use of Cattell's 16 Personality Factors Questionnaire (16 PF). The Sixteen Personality Factors Questionnaire is an objectively scored measure of "normal" personality developed by Raymond Cattell in 1943. The 16 PF provides information on sixteen temperament traits and five second-order factors. These are the Warmth factor, the Intelligence factor, the Ego Strength factor, the Dominance factor, the Impulsivity factor, the Group Conformity factor, the Boldness factor, the Emotional Sensitivity factor, the Suspiciousness factor, the Imagination factor, the Shrewdness factor, the Guilt Proneness factor, the Rebelliousness factor, the Self-Sufficiency factor, the Ability to Bind Anxiety factor, and the Free-Floating Anxiety factor. These factors, along with their alphabetical designations are presented in Appendix B.

#### Personality Profiles For Police Officers

Despite some of the identified problems associated with the use of the MMPI in the police officer selection process, several researchers have been able to identify specific trends in the profiles. Saxe and Reiser (1976) found that the mean MMPI profiles of successful applicants to policing positions were significantly different from the profiles of

applicants who were evaluated as being unsuccessful. Gottesman (1969) found that the mean profiles of urban police applicants are “..highly homogeneous and are significantly deviant from MMPI ‘normals’ in consistent direction, thereby suggesting the existence of distinct personological variables and work needs among urban police candidates” (Saxe & Reiser, 1976, p. 419). Stefan (1980) concluded that the MMPI is a sufficiently valid indicator of police officer success to warrant further investigation.

As a result, researchers have been able to identify a highly consistent MMPI profile for successful police officer candidates. This profile demonstrates low level elevations on the K (Subtle Defensiveness) validity scale and on Scale 3 (Hysteria), Scale 4 (Psychopathic Deviate) and Scale 9 (Hypomania) (Butcher, 1972; Bernstein, Schoenfeld & Costello, 1982; Saxe & Reiser, 1976). Saxe and Reiser (1976) found an almost identical profile, identifying the same moderate elevations on the K scale and on Scale 3 (Hysteria), Scale 4 (Psychopathic Deviate), and Scale 9 (Hypomania) but also including a slightly depressed score on Scale 0 (Social Introversion). Similarly, Bartol (1982) identified significant differences between police officer candidates and a control group on the K (Subtle Defensiveness) scale, Scale 4 (Psychopathic Deviate), Scale 5 (Masculinity-Femininity), Scale 9 (Hypomania) and Scale 6 (Paranoia), with these scores being slightly higher for police officer candidates.

Scale 3 (Hysteria) was developed to identify subjects who adopt hysterical symptoms when faced with stressful life situations or events. The scale consists of sixty (60) items divided into two major categories: physical problems and social facility items (Butcher, 1990). The denial of good physical health, including an identification with several specific somatic complaints is covered under the physical problems category. The

social facility category involves questions aimed at a general denial of psychological or emotional problems. In normal subjects, these two categories tend to be generally independent of one another. However, in subjects demonstrating hysterical symptomology, they have been found to be positively correlated (Graham, 1990). Additionally, high scores on Scale 3 have been positively correlated with intellectual ability, educational background, social class and gender, with female subjects generally scoring higher in Hysteria than male subjects. High scorers on this scale have a tendency to react to stress and avoid responsibility through the development of physical symptoms including headaches, stomach discomfort, chest pains, weakness and tachycardia. Their subjective ratings of anxiety tend to be relatively low (Graham, 1990) and use of repression is generally elevated (Butcher, 1990). Subjects in this category tend to engage in superficial relationships based on a self-serving or selfish motivation. They have a high need for acceptance and affection and demonstrate limited self-insight.

The ability to control one's subjective experience of stress when faced with real or perceived threatening situations is crucial in police work. An officer who is unable to cope with the stressors inherent in the job or who holds negative perceptions of their job (or their ability to handle the job) will most likely abandon their chosen occupation or demonstrate deteriorating levels of competence. Low level elevations on Scale 3 may positively impact on a police officer's ability to deal with the occupational and personal stressors involved in the policing role. Scorers with moderate elevations on this scale tend to report low levels of subjective stress and/or anxiety. They generally react to stress and avoid responsibility through the development of physical symptoms. They may also rely on repression and cynicism to moderate their subjective experiences of stress. As

such, moderate elevations on this scale are predicted to be negatively correlated with self-reported stress levels.

Scale 4 (Psychopathic Deviate) was designed to measure personality traits normally associated with antisocial or psychopathic personalities (Butcher, 1990). Although initially constructed to identify patients diagnosed with asocial or amoral tendencies, it is often viewed as a general measure of rebelliousness (Graham, 1990). This fifty (50) item scale characterizes behaviors such as lying, stealing, sexual promiscuity, and excessive drinking but does not include any references to major criminal acts. Scores on Scale 4 tend to be related to both age and race, with young adults (college students) and Black subjects scoring higher. High scores are associated with impulsivity, extraversion, self-confidence, poor frustration tolerance, impatience, a lack of judgment, underachievement, ego-centricity, and deficits in general problem solving skills (poor planning and lack of consideration regarding the consequences of one's behavior). High scorers may have difficulty incorporating the values and standards of society, and are rebellious towards authority. In general, however, subjects who present with elevations on this scale are not ordinarily viewed as being easily overwhelmed by emotional turmoil (Graham, 1990).

As noted above, elevated scores on Scale 4 have often been associated with unstable characteristics such as rebelliousness, impulsivity, insensitivity, and poor judgment. However, moderate scorers have also been described as being energetic, likable, extraverted and self-confident. As noted in the literature, extraversion and self-confidence have been positively correlated with successful police officers. With respect to stress reactivity, individuals who present with elevations on this scale are not ordinarily

viewed as being easily overwhelmed by emotional turmoil. Although this may be a result of deficits in both self-insight and judgment, scorers with moderate elevations on this scale may report lower subjective ratings of both personal and occupational stress. In addition, their outgoing and confident demeanor may convince family members, friends and employers that they are capable of dealing with stress. Moderate scorers may also find themselves less affected by the daily stressors associated with the policing role as their self-confidence and superficiality may allow them to minimize some of the unpleasant realities associated with their profession.

Scale 9 (Hypomania) was originally developed to identify the presence of hypomanic symptoms including "...overactivity and expansiveness, emotional excitement, flight of ideas, elation and euphoria, overoptimism, and over-extension of activities" (Butcher, 1990). The scale consists of forty-six (46) items characterized into topics such as hypomanic disturbance, family relationships, moral values and attitudes, and physical concerns. Scores are correlated with age and race with younger subjects and Black subjects generally scoring higher on this scale. Although extreme elevations on this scale can be associated with psychotic symptomology, moderate elevations tend to indicate subjects with unrealistic self-appraisal (unrealistic optimism), grandiosity, and overactivity. Feelings of dissatisfaction, tension, anxiety, and agitation may be reported despite an outward impression of self-confidence and self-poise (Graham, 1990). In general, Scale 9 can be interpreted as a measure of psychological and physical energy (Graham, 1989). Scorers with moderate elevations on this scale tend to be action-oriented, outgoing, self-confident, and optimistic. Their energetic and upbeat manner may be an asset when faced with mundane or routine tasks such as the relatively large amount of

paper work involved in police work. Unlike low scorers, individuals who score higher on Scale 9 tend to express their feelings directly and openly. Conceivable, this preference for assertive communication and behavior would allow police officers to confront any potential stressors promptly, thereby minimizing the risk of being overwhelmed by cumulative stress. Officers who are more assertive may be less likely to personalize issues. In addition, their often forthright and candid approach may reduce the potential for misunderstandings caused by indirect communication.

The final component of the police officer profile is the K (Subtle Defensiveness) Scale. According to Shaw (1984), this scale is the only validity scale on the Minnesota Multiphasic Personality Inventory that has been found to be statistically significant in differentiating between strong and weaker policing candidates. The K scale consists of thirty (30) items which serve to address profiles which are within normal limits yet are consistent with significant psychopathology (Greene, 1980). This scale identifies an examinee's subtle attempts at denying the presence of negatively perceived character traits and trying to portray themselves in an overly positive light (Graham, 1977).

Traditionally, the value of K has been added to Scales 3 (Hysteria), 4 (Psychopathic Deviate), 7 (Psychasthenia), 8 (Schizophrenia) and 9 (Hypomania) to correct for defensive test-taking attitudes. Marked elevations of the K scale (T scores greater than 66) are often found in people who lack personal insight into their problems or behaviors and deny the existence of any personal weakness. Officers scoring high on this scale are often classified as being unable to accept feedback, awkward in social situations and intolerant of unconventional lifestyles (Shaw, 1984). As a result, they are more vulnerable to experiencing stress-related outcomes on the job as they present as inflexible



and appear to be unable to identify the presence of problems or crises until the situation has become overwhelming. Conversely, elevated scores on the K scale have been attributed to a tendency to put one's "best foot forward" in order to gain employment (Bartol, 1982). High scores have also been found to be positively correlated with educational level and socioeconomic status, reflecting ego strength and well-developed psychological resources in applicants who possess advanced educational degrees. As such, the K scale needs to be cautiously interpreted as do the scales which require K correction.

Researchers have also examined two of the MMPI Supplementary scales with respect to identifying stress in police populations. The Supplementary scales were developed through item analytic, factor analytic, and intuitive procedures using the basic Minnesota Multiphasic Personality Inventory Clinical and Validity scales. According to Graham, these scales vary significantly in terms of "...what they are supposed to measure, the manner in which they were constructed, their reliabilities, the extent to which they have been cross-validated, the availability of normative data, and the amount of additional validity data that has been generated" (1987).

Two basic factors have consistently emerged through factor analysis of the Clinical and Validity scales of the MMPI (Block, 1965; Eichman, 1962; Welsh, 1956). They have been labeled as the Repression (R) and Anxiety (A) scales (Welsh, 1956). Split-half reliability coefficients for the Anxiety and Repression scales have been found to be 0.88 and 0.48 and test-retest reliability after four months was 0.70 and 0.74 respectively. Scores on the Repression scale (in a normal population) have been found to be positively correlated with the L (Lie) scale, the K (Subtle Defensiveness) scale, Scale 1

(Hypochondriasis) and Scale 2 (Depression) and demonstrate significant item overlap with both Scale 2 and Scale 0 (Social Introversion). In general, Repression identifies the following: denial of health and physical symptoms, enjoyable reactions to others in a social situation, social dominance, feelings of personal adequacy, interest in personal appearance, interest in personal and vocational pursuits, and emotionality (Greene, 1980). Repression has also been associated with denial, rationalization, poor self-insight (Duckworth & Duckworth, 1975) and submissiveness, unexcitability, conventionality, clear thinking, and thoroughness (Graham, 1987). High scores on the Repression scale are associated with an unwillingness to discuss personal problems. This may be related to conscious suppression of personal difficulties or may reflect the presence of repression and/or denial. High scorers often have limited insight into their behavioral choices and can appear constricted and over-controlled (Greene, 1980).

In 1984, Abbott looked at the MMPI's Repression Scale as a possible predictor of the development of cynicism in police officers. Abbott compared the results of the PCI (Police Cynicism Index) and the Revised Repression-Sensitization Scale (R-S) of seventy-four male police officers in order to address police officer cynicism, in particular, the way in which cynicism relates to defensive styles developed by police officers to handle stress and anxiety (Abbott, 1984). The findings suggest that a repressor style (versus a sensitizing defense style) correlates with low cynicism scores. Apparently, subjects who repress don't perceive many events as overly stressful and instead rely on internalizing their stress. As cynicism is viewed as causing alienation among co-workers and peers (Abbott, 1984), the presence of a high Repression score is generally predictive of lower self-identified stress levels.

Anxiety is the second factor identified by Welsh (1956). The thirty-nine item Anxiety scale (A) generally reflects the personality factor of anxiety (Welsh, 1956), a lack of ego-resiliency (Block, 1965), general maladjustment (Tyler, 1951), and, according to some researchers, a response bias labeled Social Desirability (Edwards & Diers, 1962). The Anxiety scale identifies the presence of situationally-based anxiety rather than reflecting the more chronic anxiety states assessed by Scale 7 (Psychasthenia) (Greene, 1980). It can be divided by major content areas, including: problems in thinking and thought processes, the presence of a negative emotional tone and dysphoria, lack of energy and pessimism, and malignant mentation (personal sensitivity and deviant thought processes) (Graham, 1987).

Elevated scores on the Anxiety scale are generally associated with individual's who react to situational stress or personal hardship with symptoms of anxiety. High scorers are often viewed as being anxious, pessimistic, apathetic, unemotional, inhibited, conforming and lacking in self-confidence. In addition, these individuals tend to be defensive, and utilize rationalization or externalization of blame to justify their inappropriate behavioral choices. With respect to selection criteria for policing positions, Fitzsimmons (1984) identified that candidates who presented with traits reflective of high A scores, including excessive dependence, passivity, a lack of assertiveness, poor resiliency in responding to ordinary life stressors, and/or possessing a poor capacity for interpersonal relatedness can be classified as below average.

Analysis of the 16 Personality Factors Questionnaire (16 PF) has also led researchers to attempt predictions of an examinee's potential suitability or projected level of job adjustment for a wide range of occupations. For the occupation labeled

'Policemen', nine categories were found to be related to successful adaptation to the role. According to Cattell (1970), super-ego strength, a tough-minded orientation, adherence to a conservative or traditional viewpoint, practicality, a dominant interpersonal style, and well-developed ego strength were associated with the ability to effectively deal with the stress inherent in the policing role. For second-order factors, an extraverted personality style and tough poise were found to be crucial. Finally, Cattell identified that a successful police candidate's overall neuroticism score should be below average (Cattell et al., 1970). This would indicate that successful candidates are dominant, relaxed, enthusiastic, conscientious, adventuresome, tough-minded, self-assured and emotionally stable. In addition to Cattell's profile, Eber (1991) found that the second-order factors best expressed the police officer personality pattern. He described the typical police candidate as highly controlled, low in anxiety, strongly tough-minded, and slightly independent.

The factor identified as Ego Strength generally characterizes a person's overall level of emotional stability and maturity. A calm and reality-based orientation, good self-restraint, the ability to plan ahead and prepare for stressful events, freedom from procrastination, a tendency to set realistic and attainable goals, and common sense assist high scorers in minimizing their exposure to unmanageable stress. As high scorers tend to react well in emergencies, it is not unusual to find high levels of this factor in group norms for occupations such as police officers, firefighters and pilots (Cattell, 1989). High scorers are also associated with facing uncomfortable or dangerous ordeals in an above-average manner, thereby limiting not only their own stress but the stress of people around them.

The Emotional Sensitivity factor differentiates a person's customary approach to

dealing with events, experiences, or situations on a thinking (tough-minded) or feeling (sensitive) level. High scorers tend to act on sensitive intuition when faced with difficult situations whereas low scorers generally act on practical and logical evidence. As a result, low scorers may excel in occupations which involve stressful interactions or require decisions to be made under less-than-ideal circumstances. Their tough-minded orientation may allow them to make reasonable decisions based on the presenting information rather than becoming subjectively affected. Individuals who are resilient and act on practical concerns rather than being easily influenced by others will most likely experience less stress than those individuals who are sensitive as they will have greater "bounce-back" potential.

The Rebelliousness factor compares conservative versus radical orientations. Lower scores are characteristic of conservative individuals who are respectful of established ideas and traditions. Low scorers are unlikely to actively promote change, preferring instead to follow a "tried and true" ideology. Low scorers are suited for occupations which require adherence to established policies and guidelines. Given the quasi-military structural foundation of policing organizations, individuals who are accepting of established authority and traditional value systems may experience less job-related "friction". This may result in lower reported occupational stress levels.

Last, Extraversion is commonly associated with successful police officers. Individuals who hold an extraverted orientation tend to immerse themselves more readily into the community and find it easier to take things in stride. Their outgoing personality style usually results in the development and maintenance of a greater support network that can provide guidance and assistance during periods of high stress. As a result, the

extraverted police officer may be in a better position to defuse his or her stress level before it reaches levels high enough to effect job performance. In addition, extraverts have been found to react more effectively to severe conflict than introverts (Kahn, 1974). This finding suggests that an extraverted orientation may result in lower levels of job-related situational stress in occupations such as policing.

### Introduction to the Research Study

As described above, research with police populations has led to the identification of several variables commonly associated with successful police performance. The recognition that a candidate who possesses specific characteristics may be more successful in the policing profession has resulted in the development of a variety of traits which group together to form a “police personality”. Standardized tests, such as the Minnesota Multiphasic Personality Inventory and Cattell’s 16 Personality Factors Questionnaire are frequently utilized to help assess if a potential candidate possesses the traits which have been found to predict success on the job. However, one area which has not been given much attention in the recruitment of new officers is the problem of stress. Specifically, an individual’s style of reacting to stress, and their skills in the area of stress management often appear to be given minimal consideration in both the hiring process and the subsequent management of police personnel. This is of concern given that stress has been identified as a significant problem within the police profession.

### Objectives, Hypotheses, and Research Questions

This study examined the relationship between stress and coping in a sample of newly hired police officers. Additionally, the study was constructed to determine if a relationship was present between pre-employment personality variables from the Minnesota Multiphasic

Personality Inventory and the 16 Personality Factors Questionnaire (predictors) and scores on a measure of stress (Occupational Stress Inventory). The primary goal was to determine if pre-employment testing scores could predict police officers who are at higher risk to develop stress-related problems on the job. Additionally, this study hoped to provide research results which would enable policing organizations to address the problem of stress within this occupation.

### Main Analysis:

#### Hypothesis #1

There will be a negative relationship between participants' scores on the measures of occupational stress and psychological strain (as measured by the Occupational Stress Inventory) and the measure of coping (as determined by the Coping Domain of the Occupational Stress Inventory). Specifically, participants who report deficits in coping skills will report higher stress scores.

#### Hypothesis #2

Based on the literature review, possible relationships between participants' scores on the measure of stress (Occupational Stress Inventory) and selected scales of the two measures of personality commonly employed in the psychological assessment of police personnel (Minnesota Multiphasic Personality Inventory-2 and the 16 Personality Factors Questionnaire) were examined. Specifically, the clinical scales identified in the literature as forming the 'police personality' were compared to the total stress score from the Occupational Stress Inventory.

From the literature review, the following hypotheses were identified:

- A. There will be a negative relationship between scores on the Subtle Defensiveness scale, the Hysteria scale, the Psychopathic Deviate scale, the Hypomania scale, and the Repression

- scale (MMPI-2) and scores on the measure of stress from the Occupational Stress Inventory.
- B. There will be a positive relationship between scores on the Anxiety scale (MMPI-2) and scores on the measure of stress from the Occupational Stress Inventory.
- C. There will be a negative relationship between scores on the Ego Strength factor and the Extraversion factor (16 PF) and scores on the measure of stress from the Occupational Stress Inventory.
- D. There will be a positive relationship between scores on the Emotional Sensitivity factor and the Rebelliousness factor (16 PF) and scores on the measure of stress from the Occupational Stress Inventory.

#### Research Questions

- What is the impact of gender on the criterion and outcome variables? Specifically, the scales from the Occupational Stress Inventory, and select scales from the Minnesota Multiphasic Personality Inventory-2 and the 16 Personality Factors Questionnaire were examined with respect to gender.
- Are there any significant differences between participants in the Higher and Lower stress groups on the clinical and validity scales from the MMPI-2 and on the Ego Strength, Emotional Sensitivity, Rebelliousness, and Extraversion factors from the 16 PF? These groups were determined using a median split, with participants in the Higher Stress group falling above the median point.

#### Ad Hoc Analysis

- To report the presence of any significant relationships between the results on the Occupational Stress Inventory scales (Occupational Stress and Psychological Strain) and



the following predictor and criteria variables: Posting Type, Education Level, and Law and Security Administration (LASA) graduate status. The clinical and validity scales from the MMPI-2 which were not identified in the main analysis were also investigated. These scales are the L (Lie) scale, the F (Infrequency) scale, Scale 1 (Hypochondriasis), Scale 2 (Depression), Scale 5 (Masculinity-Femininity), Scale 6 (Paranoia), Scale 7 (Psychasthenia), Scale 8 (Schizophrenia), and Scale 0 (Social Introversion).

## CHAPTER II

### METHOD SECTION

#### Participant Selection Criteria

The first stage of this study involved identifying an appropriate sample of eligible research participants. The possible impact of variables such as previous policing experience, length of service, type of duty primarily being performed, and rank were considered so as to limit any confounding effects directly attributable to these conditions. Consideration was also given to information from the literature suggesting that officers at different levels of their careers experience symptoms of stress which are the result of unique stage-specific transitory stressors. Niederhoffer (1967) determined that stress in police work was not a consistent process but varied in relation to the stage of career an officer was in. Four concrete phases were identified: Alarm (hire to five years), Disenchantment (six to twelve years), Personalization (thirteen to twenty years) and Introspection (until retirement). These stages have been successfully correlated with varying levels of police officer stress. For this study, the research sample consisted of participants in the Alarm stage of their careers. As noted earlier, the Alarm stage is associated with a steady rise in stress levels as the novice police officer experiences a form of "reality shock" in relation to the demands of the policing role. It is essentially the result of the novice officer realizing that police work is different than what was learned at the academy (Niederhoffer, 1967). The selection was further limited to officers in the first year of this stage in order to prevent a confounding effect from experience-related variables. As such, only newly appointed officers with less than one year of police experience at the time of the study were eligible for participation. Selecting newly-hired

police officers ensured stability of rank as the opportunity for promotion does not occur until an individual has successfully passed his or her one year probationary period. It also minimizes the impact of variables such as duty assignment. The responsibilities of newly recruited constables are fairly stable over their first year of employment (relative to their posting) as there are limited opportunities to undertake specialized duties or assignments such as undercover work during the probationary period.

Based on the above considerations, the inclusion criteria are as follows:

1. Eligible research participants have successfully graduated from the Ontario Police College within a specified one year time period
2. They have no previous policing experience (not including participation as an auxiliary or volunteer member)
3. They are assigned to general policing duties involving community interaction
4. They have a willingness to participate in the research project

Potential participants were identified based on their inclusion in one of two pre-selected classes at a recognized police training program. Prior to beginning active policing duties, newly hired officers must attend and successfully complete a rigorous training program. In order to limit the effect of experience-related extraneous variables, two consecutive graduating classes were chosen. Lists of members completing these programs formed the original research population, resulting in two hundred and four (204) potential participants being identified. On subsequent review, thirteen (13) members were found to be ineligible for participation as a result of one of the following reasons:

1. Member had previous policing experience (n = 6)
2. Member had resigned or been fired prior to the start of the research study (n = 3)

3. Member had been excused from duty prior to, or during, the research study (n=1)
4. Pre-employment data was missing or unavailable (n = 3)

Following these exclusions, the available sample group consisted of one hundred and ninety-one potential participants.

### Procedure

A total of one hundred and ninety-one (191) potential research participants were sent (via government internal mail) a research package consisting of the following: a letter of introduction from their organization, a cover letter explaining the purpose of the study and confidentiality (Appendix C), a memo explaining how to complete the inventories, a consent form which allowed the researcher access to the officer's pre-employment psychological test results (MMPI-2 and the 16 PF) and other demographic data (Appendix D), a copy of the Penn Inventory for Posttraumatic Stress (Appendix E), a copy of the Occupational Stress Inventory, a brief demographic questionnaire (Appendix F), and a self-addressed return envelope confidentially addressed to the researcher. The directions for completing the Penn Inventory were modified with permission of the test author. The research questionnaires were numbered using a system designed to ensure confidentiality of the test data. As such, participants did not have to provide their name or badge number on any of the testing material. One month following the initial mailing of the research packages, officers who had not responded (either by completing and returning the research package or returning the uncompleted package as instructed) received a reminder.

One hundred and six (106) completed packages were returned to the researcher. This corresponds to a 55.5% response rate. Upon receipt of the packages, the material was reviewed to ensure that all forms and test questionnaires had been properly completed. As

a result of this initial analysis, four packages were discarded for one of the following reasons:

1. The participant had not completed all the required material (n = 2)
2. The participant had completed the material incorrectly (n = 1)
3. The participant failed to complete the release of information form (n = 1)

As a result, the final research sample consisted of one hundred and two (102) participants, or 53% of those contacted.

Officers who agreed to participate in the present study returned the completed testing material (Occupational Stress Inventory and the Penn Inventory for Post-Traumatic Stress) along with a signed release of information form giving the researcher access to their pre-employment psychological test results. This consisted of data from both the 16 Personality Factors Questionnaire and the Minnesota Multiphasic Personality Inventory, Revised. These measures had been administered by a trained police recruiter during the application process, computer-scored, and returned to the police department for interpretation by a trained police psychologist. The Occupational Stress Inventory and Penn Inventory for PTSD were hand-scored as per the scoring instructions provided in the testing manuals. The results from the four inventories (the Minnesota Multiphasic Personality Inventory, Revised, the 16 Personality Factors Questionnaire, the Occupational Stress Inventory, and the Penn Inventory for Posttraumatic Stress) were then entered into a data file. After matching each participant with his or her corresponding pre-employment test results, the master list containing identifying information was destroyed to ensure confidentiality.

### Measures

Four instruments were used in this study: the Minnesota Multiphasic Personality Inventory, Revised (predictor), the 16 Personality Factors Questionnaire (predictor), the Penn

Inventory for Posttraumatic Stress (criteria) and the Occupational Stress Inventory (criteria).

Predictor Variables:

A. Minnesota Multiphasic Personality Inventory - Revised (MMPI-2)

The Minnesota Multiphasic Personality Inventory (MMPI) was developed by Hathaway and McKinley (1943) to aid in routine psychological assessment and diagnosis. It consists of ten basic clinical scales, four validity scales, and numerous additional scales which were constructed through use of the empirical keying approach. This method involves experimentally determining items which differentiate between groups of subjects rather than simply relying on the face validity of test items and/or the subjective judgment of the test author to determine significant factors or criteria. In order to construct the various scales, Hathaway and McKinley administered their initial 504-item questionnaire to two criterion groups. The first group (Minnesota 'normals') consisted primarily of relatives and visitors of hospital patients. This group also included a sample of recent high school graduates, medical patients, and employees of a local office. The second group ('clinical' sample) consisted of psychiatric patients with a clear and agreed-upon diagnosis. These subjects were assigned to one of eight subgroups based on their diagnostic label. The diagnostic groups were hypochondriasis, depression, hysteria, psychopathic deviate, paranoia, psychasthenia, schizophrenia, and hypomania. Item analysis of the responses identified items that differentiated significantly between subjects within a specific clinical group, and between subjects in the other clinical groups and in the normal sample. These items were included in the MMPI. The Masculinity-Femininity scale (Terman & Miles, 1936) and the Social Introversion scale (Drake, 1946) were added at a later date.

In 1989, following further research and development, the MMPI was updated and restandardized. The primary purpose for this revision was to establish a contemporary normative sample that would be more representative of the general population (Graham, 1990). In addition, the revision (the Minnesota Multiphasic Personality Inventory, Revised) included modernization of language and content as some of the references in the original inventory were not appropriate for a contemporary sample. This included references to archaic concepts such as 'sleeping powders' and early children's games such as "drop the handkerchief". Objectionable items including those which were sexist or otherwise biased were eliminated. Questions dealing with sexual behavior and normal bodily functions were deleted as their relevance to the assessment of personality was disputable (Graham, 1990). Several questions were deleted and others were added in order to expand the scope of the MMPI-2, resulting in a 567 item inventory which can be either hand or computer scored. Raw scores are converted into uniform T-scores ( $M=50$  and  $SD=10$ ), with a T-score of greater than 65 generally being considered significant.

For normal subjects, the test-retest reliability coefficients (after one week) for the MMPI-2 clinical and validity scales range from 0.67 to 0.92 for the male sample and from 0.58 to 0.91 for the female sample. The typical standard error of measurement of the clinical scales has been identified as being two to three raw score points. The internal consistency of the individual basic scales have been estimated between 0.34 to 0.85 for males and between 0.37 to 0.87 for females, with Scale 7 (Psychasthenia) having the highest internal consistency for both samples (Butcher et al., 1989).

The use of the MMPI-2 in the psychological screening of police officer candidates has raised questions regarding the validity of this and other tests commonly used in the recruitment

process. Concerns include the lack of consistently demonstrated validity of this measure with policing populations, the absence of norms for the target population, and the lack of a generally agreed upon definition of what constitutes an “undesirable” candidate.

The concerns regarding the validity of the MMPI-2 in the police officer selection process were considered in the present research design. Specifically, despite some of the noted problems with this inventory, it was incorporated as a predictor measure. However, one of the primary research goals was to determine if the results from the MMPI-2 and 16 PF were useful in predicting stress scores in a police sample. As such, the present research attempted to demonstrate that these measures can in fact contribute some degree of predictive validity in the overall recruitment process. The fact that many researchers have found the MMPI-2 to be a valid indicator of police officer suitability combined with the fact that this measure is routinely used in the screening process in the majority of police departments was also considered.

#### B. Sixteen Personality Factor Questionnaire

The Sixteen Personality Factor Questionnaire (16 PF) is an objectively scored measure of “normal” personality developed by Raymond Cattell in 1943. The 16 PF provides information on sixteen temperament traits and five second-order factors which were initially identified through factor analysis of 4000 personality-descriptive adjectives. These dimensions of personality identify an individual’s characteristic style of thinking, perceiving, and acting over a relatively long period of time and across a wide range of different situations (Cattell, 1989). As the 16 factors are represented bipolarly, both ends of the scale are interpretable.

Originally, Cattell assigned each factor a letter, ranging from A to Q4. In general, a factor’s order in the alphabet designated how broad an area of human personality was represented, with primary letters generally identifying factors which were thought to have



a broader influence on personality (Cattell, 1989). As his research progressed, Cattell assigned names to each factor, occasionally choosing to create a neologism to specify the exact characteristics of the factor in question. As a result, the factors are occasionally referred to by a variety of descriptors or simply through their alphabetical label. The basic descriptor categories of the first-order factor scales, along with their letter designations are as follows: Factor A (Warmth), Factor B (Intelligence), Factor C (Ego Strength), Factor E (Dominance), Factor F (Impulsivity), Factor G (Group Conformity), Factor H (Boldness), Factor I (Emotional Sensitivity), Factor L (Suspiciousness), Factor M (Imagination), Factor N (Shrewdness), Factor O (Guilt Proneness), Factor Q1 (Rebelliousness), Factor Q2 (Self-Sufficiency), Factor Q3 (Ability to Bind Anxiety), and Factor Q4 (Free-Floating Anxiety). These factors, along with their alphabetical designations, are presented in Appendix B. Further analysis of the correlations of the sixteen primary factors resulted in a broader set of five second-order factors. These can be identified using the following descriptor categories: Extraversion, Anxiety, Tough Poise, Independence, and Sociopathy-Control (Karson & O'Dell, 1976).

In order to accommodate a wide variety of uses, five different forms of the 16 PF are available. Form A, the standard version for adults, consists of one hundred and eighty-seven (187) forced-choice questions. In addition to the 16 primary and five second-order factors noted earlier, two validity scales (Faking Good and Faking Bad) were added at a later date. A shorter version of the 16 PF, form C, has generally been targeted towards occupational testing situations as it requires less time for examinees to complete. It has also been found to require a slightly lower reading level than form A. In addition, unlike form A, form C incorporates a Motivational Distortion (MD) scale aimed at detecting an examinee's efforts to present

themselves in an overly favorable light (faking good). Forms B and D are alternates for forms A and C. When two forms of the test are used together (A+B or C+D) to form a single test, reliability coefficients increase. For examinees whose reading is below a sixth grade level, form E of the 16 PF is available.

The 16 PF requires examinees to select from one of three alternatives designed to indicate which end of the pole they associate most strongly with. Scoring is done either by hand using templates or through a computer test scoring service. The score of each item contributes to only one factor total, with each score being represented as a “standard-ten” or “sten” score. Stens are standard scores which have a mean of 5.5 and a standard deviation of 2. Each answer (with the exception of scale B items) is assigned a value of 2, 1, or 0 (or 0, 1, 2 when scoring the alternate pole). With scale B (intelligence), each correct response receives one point.

Forms A and B (1967/68) are generally used during the pre-employment testing of police officer candidates. Reliability (dependability) coefficients (test-retest between 2 to 7 days) for form A range from 0.75 to 0.92 for the source traits (Canadian sample). For form B, the reliability coefficients range from 0.54 to 0.89 (American sample). Stability coefficients (retest after a ten week period) are more variable, ranging from 0.35 to 0.85 for form A. Equivalence coefficients between forms A and B (structured homogeneity) for the 16 scales range from 0.21 to 0.71. Construct validity ranges between 0.35 to 0.92 for form A and between 0.44 to 0.87 for form B (Cattell et al., 1970).

Criterion Variables:

A. Occupational Stress Inventory (OSI)

The Occupational Stress Inventory (Osipow & Spokane, 1981) was developed “to

provide measures for an integrated theoretical model linking sources of stress in the work environment, the psychological strains experienced by individuals as a result of work stressors, and the coping resources available to combat the effects of stressors and alleviate strain” (Osipow & Spokane, 1992, p.1). It also provides a generic measure of occupational stressors which is applicable across a wide variety of occupations and environments. In actuality, the OSI is comprised of three distinct yet integrated inventories which assess an individual’s level of adjustment across three major domains, specifically, occupational stress, psychological strain, and coping resources. The various scales of the Occupational Stress Inventory are shown in Appendix G.

The Occupational Roles Questionnaire (ORQ) is comprised of six scales (10 items per scale) which collectively form the occupational stress domain. The Role Overload scale identifies situations where an individual feels that the demands of their job exceed their personal and professional resources. Role Insufficiency identifies the relationship between job requirements and the personal attributes an individual possesses (training, education, skills, and experience). Role Ambiguity determines if individuals are clear regarding job expectations, priorities, and evaluation criteria. The Role Boundary scale examines the presence of conflicting role demands and loyalties in the work setting. Responsibility measures the amount of real or perceived responsibility an individual has (or perceives) for the performance or welfare of others. Last, the Physical Environment scale targets an individual’s exposure to extreme or environmentally hazardous working conditions.

The Personal Strain Questionnaire (PSQ) is comprised of four scales (10 items per scale) which together provide a measure on the psychological strain domain. Vocational Strain measures an individual’s attitude towards work. It also assesses any perceived problems with

the quantity or quality of their work output. The Psychological Strain scale provides an indication of possible psychological or emotional problems which may be effecting the individual. The amount of intrusion or disruption present in interpersonal relationships is measured by the Interpersonal Strain scale, and the individual's level of self-care including complaints of physical illness are measured by the Physical Strain scale.

Finally, the coping resources domain is assessed using the four scales (10 items per scale) of the Personal Resources Questionnaire (PRQ). The Recreation scale targets an individual's participation in regular recreational activities. Participation in activities which reduce or alleviate stress is measured on the Self-Care scale. Social Support assesses the extent to which an individual feels supported and/or helped by other people and the Rational/Cognitive Coping scale identifies an individual's tendency to employ cognitively based skills when faced with work-related stress. The version of the Occupational Stress Inventory used in the present research is considered a research form as available norms are limited. As noted in the test manual, the current research norms are "...derived primarily from technical, professional, and managerial workers employed in schools, service organizations, and large manufacturing settings" (Osipow & Spokane, 1992, p. 3). The 140 item inventory was ordered directly from the publisher (Psychological Assessment Resources), with Form HS being used to hand-score responses. Available profile forms facilitate conversion of raw scores to T-scores (mean of 50 and a standard deviation of 10). For both the Occupational Roles Questionnaire (ORQ) and the Personal Strain Questionnaire (PSQ), scores at or above a T-score of 70 are statistically significant and indicate the possibility of maladaptive stress reactions. Scores in the 60 to 69 range suggest mild levels of maladaptive stress while scores in the 40 to 59 range are considered within normal limits. For the Personal Resources

Questionnaire (PRQ), low scores (at or below a T-score of 30) indicate significant deficits in coping resources, with scores in the 30 to 39 range suggesting mild coping deficits. High scores on the PRQ scale (at or above a T-score of 60) indicate well-developed coping resources.

As noted earlier, normative data are available from a sample of 909 adult subjects employed primarily in technical, professional, and managerial positions in schools, service organizations, and manufacturing settings (Osipow & Spokane, 1992, p.10). Reliability coefficients (internal consistency) are identified as 0.89 for the occupational stress domain, 0.94 for the psychological strain domain, and 0.88 for the coping resources domain (Osipow & Spokane, 1983). For the individual scales within each domain, internal consistency ranged from 0.71 to 0.90. Validity of the OSI has been studied in four ways: factor analytic studies, correlational studies, outcome (treatment) studies, and studies of the OSI model (criterion-referenced). In summary, moderate to strong concurrent validity was noted. Additionally, significant correlations were identified between the Personal Strain Questionnaire and the Personal Resources Questionnaire (-0.24) and between the Occupational Roles Questionnaire and the Personal Resources Questionnaire (-0.25).

The format of the OSI item booklet and rating sheet allows the Occupational Roles Questionnaire (ORQ), the Personal Strain Questionnaire (PSQ), and the Personal Resources Questionnaire (PRQ) to be administered together or separately depending on the testing goals.

For the present research, all three questionnaires were administered, with four criterion variables being used in the main analysis: total ORQ score, total PSQ score, total PRQ score, and total ORQ + total PSQ score. Significant negative correlations between ORQ and PRQ scores, and between PSQ and PRQ scores were predicted.

## B. Penn Inventory for Posttraumatic Stress

The Penn Inventory for Posttraumatic Stress (Hammarberg, 1990) is a self-report measure of the severity of PTSD. It consists of twenty-six items aimed at measuring the degree, frequency, and/or intensity of relevant post-traumatic stress symptoms in both a veteran and non-veteran population. The Penn Inventory can be hand-scored by summing up the responses to the 26 questions. Each question is rated on a four point scale ranging from 0 to 3, with the range of scores falling between 0 and 78. A score of 35 or higher has generally been found to be predictive of PTSD in 95% of persons diagnosed with the disorder.

The Penn Inventory has proven to be a reliable and valid self-report measure of PTSD symptoms. Internal consistency for the measure was found to be 0.94 across all subjects (0.78 for non-veterans) with test-retest reliability across all subjects falling around 0.96 (0.90 for non-veterans). With respect to diagnostic accuracy, the Penn Inventory "...clearly discriminated between the PTSD-diagnosed groups and the non-PTSD groups and therefore supported the basic diagnostic classification (Hammarberg, 1992, p. 70). As there is some indication that police officers may be at a greater risk of experiencing symptoms consistent with post-traumatic stress, the Penn Inventory was included as a measure of current functioning. The goal of using this inventory is to determine whether the mean Penn score for a police sample is comparable to that found in a non-veteran sample. The mean scores from two studies (Hammarberg, 1992) have been found to be around the 15 point mark (15.1 and 15.6).

### Data Analysis

Prior to undertaking the primary analysis, the data from the Occupational Stress Inventory, the Minnesota Multiphasic Personality Inventory, Revised, and the 16 Personality Factors Questionnaire was examined to determine whether the assumptions

underlying a parametric analysis were met. Skewness and kurtosis were examined and the Levene and K.S. Lillifores tests were used in order to determine equal variance and normality. These procedures revealed the presence of equal variances and distributions which did not differ significantly from a normal curve. As a result, no data transformations were performed.

The Statistical Package for the Social Sciences (SPSS-PC) was used for data analysis. Simple bivariate correlations revealed a significant relationship between the Occupational Stress and Personal Resources (coping) domains of the Occupational Stress Inventory. Participants' perceived level of coping was found to be significantly negatively correlated with both occupational stress and psychological strain.

Due to the lack of variance in the sample with respect to race, education, and marital status, no differences were able to be investigated within these groups. Simple one-way ANOVA's with post-hoc Tukey tests would have been used if the sample had been more equally represented. Gender differences were analyzed through the use of independent t-tests. Given the use of multiple independent t-tests, the probability of making a Type I error increased. As a result, and in consideration of the relatively large size of the sample, the level of significance should be considered to be .01 for the various analyses. Several significant findings were noted. No significant differences were found between graduates of college-level LASA programs (Law and Security Administration) and non-LASA graduates on either the MMPI-2, the 16 PF, or the OSI. The posting type of officers was investigated using a one-way ANOVA and Tukey post-hoc test. The analysis revealed that Hypomania scores from the MMPI-2 were positively correlated with the rural posting location.

Finally, a median split of total stress as measured by the Occupational Stress Inventory (Total Occupational Stress) was performed and the differences between low and high groups were analyzed using a series of independent t-tests. Once again, the probability of making a Type I error was taken into account in the analysis of the data. Several significant findings were found. The Low group consisted of participants with low to low-average scores on the measure of total stress while the High group consisted of participants who scored in the above average to high range.



## CHAPTER III

### RESULTS SECTION

#### Preliminary Statistics

##### A. Demographics

A total of 102 recently appointed police officers participated in this study. The majority of respondents were female (55.9%) which is fairly atypical for research focused on a policing population. The higher ratio of female to male respondents may be attributable to the increased number of women entering the policing field. In recent years, there has been considerable energy devoted to encouraging a greater number of non-traditional applicants, including women, to policing services. In part, this appears to have been fueled by concerns over employment equity hiring decisions. In addition, there appears to be a greater degree of recognition regarding the benefits of a diversified work force, and more interest and support for women choosing to enter traditionally male-dominated occupations.

Gender differences were examined using a series of independent t-tests. Several significant findings were identified and are shown in Tables 1 and 2. With respect to the results from the Occupational Stress Inventory, men generally identified the presence of more Occupational Stress ( $m = 121.80$ ) than did women ( $m = 112.84$ ). Although women tended to score higher on the measures of Psychological Strain and Personal Coping, these differences were not found to be significant.

With respect to the results from the MMPI-2 clinical scales, men demonstrated significantly higher scores on Scale 1 (Hypochondriasis) ( $t = 2.13, p < .05$ ), Scale 2 (Depression) ( $t = 3.11, p < .01$ ), and Scale 7 (Psychastenia) ( $t = 1.86, p < .05$ ). Women

Table 1  
Relationship Between Gender and the Occupational Stress Inventory Scales

OCCUPATIONAL STRESS INVENTORY (OSI)	MALE MEANS	FEMALE MEANS	RESULT
Occupational Roles Scale (ORQ)	121.80	112.84	t = 5.32***
Psychological Strain Scale (PSQ)	63.35	66.14	+
Coping Resources Scale (PRQ)	133.28	136.46	+

\*\*\*  $p < .001$

+ - approaching significance

Table 2  
Gender Differences on the MMPI-2 Scales

MMPI-2 SCALE	SCALE NAME	MALE MEANS	FEMALE MEANS	RESULT
K	Subtle Defensiveness	62.17	61.36	
L	Lie	59.76	56.34	+
F	Infrequency	43.20	41.86	
1	Hypochondriasis	48.07	46.13	t = 2.13*
2	Depression	44.39	40.95	t = 3.11**
3	Hysteria	49.52	47.86	+
4	Psychopathic Deviate	51.00	49.71	
5	Masculinity- Femininity	43.09	60.71	t = 9.2***
6	Paranoia	47.85	46.43	
7	Psychastenia	47.57	45.29	t = 1.86*
8	Schizophrenia	47.41	46.05	
9	Hypomania	51.54	52.07	
0	Social Introversion	38.08	37.05	

\*\*\* p < .001

\*\* p < .01

\* p < .05

+ - approaching significance

scored higher on Scale 5 (Masculinity-Femininity) ( $t = 9.2, p < .001$ ). Two interesting trends were also noted in the data. On Scale 3 (Hysteria), men tended to score higher ( $m = 49.52$ ) than their female counterparts ( $m = 47.86$ ). This pattern was also demonstrated on the L (Lie) scale, with men indicating higher scores ( $m = 59.76$ ) than women ( $m = 56.34$ ). The probabilities for the above results were .070 and .051 respectively.

Although the mean age of the sample was 27, participants ranged in age from 22 to 40. The majority were single (72.5%) and over half (54%) were University graduates. Of the 38 participants who attended College, 19 completed a police officer training program, such as Law and Security Administration, as their major course of study. Ninety-four percent of participants identified themselves as Caucasian with the remaining six percent describing themselves as Black (2%), Hispanic (1%), or Asian (1%). Eleven percent of the sample described living with a specific disability. These results are summarized in Table 3. The majority of participants described being assigned to a rural posting (55%), with 28% identifying their work assignment as an urban setting.

#### B. Frequency of Self-Reported Occupational Stress, Psychological Strain, and Coping Resources:

The division of the Occupational Stress Inventory into three distinct yet related sub-inventories provides a method of assessing self-reported levels of Occupational Stress, Psychological Strain, and Coping Resources through administration of a single questionnaire. As described earlier, the Occupational Roles Questionnaire (ORQ), the Personal Strain Questionnaire (PSQ), and Personal Resources Questionnaire (PRQ) are comprised of various scales which collectively serve to measure the relevant characteristics of their specific domains.

Table 3  
Demographic Characteristics of the Research Sample

CHARACTERISTIC ( $n = 102$ )	FREQUENCY	PERCENT
<u>Gender</u>		
Male	45	44.1%
Female	57	55.9%
<u>Age in Years</u>		
Mean: 27		
SD: 3.7		
Range: 22 to 40		
Categories:		
20 to 29	82	80.4%
30 to 39	19	18.6%
40 to 49	1	1.0%
<u>Educational Level</u>		
High School	4	3.9%
University	55	53.9%
College	38	37.3%
Graduate Training	5	4.9%
<u>Marital Status</u>		
Single	74	72.5%
Married	22	21.6%
Common-Law	3	2.9%
Divorced	3	2.9%
<u>Ethnic Group</u>		
Caucasian/White	96	94.1%
Black	2	2.0%
Hispanic	1	1.0%
Asian	1	1.0%
Other	2	2.0%

In general, values above a T score of 70 on both the Occupational Roles Questionnaire and the Personal Strain Questionnaire scales are considered to be statistically significant, occurring approximately two percent (2%) of the time within the normative sample. As such, they indicate a strong probability of maladaptive stress. Scores in the 60 to 69 range are not as significant statistically, but do suggest mild levels of maladaptive stress. Scores in the 40 to 59 range are interpreted as falling within normal limits and scores below 40 indicate a “relative absence” of occupational stress and psychological strain. For the Personal Resources Questionnaire (PRQ), scores at or below a T-score of 30 are associated with a significant lack of coping resources while scores in the 31 to 39 range suggest mild deficits. T-scores between 40 and 59 are indicative of average coping resources and scores above 60 usually indicate the presence of well-developed skills (Osipow & Spokane, 1992).

The results from the Occupational Roles Questionnaire (ORQ) are summarized in Table 4. The mean summary score for the ORQ scale means was 46.29. Although each of the six scales fell within the normal range, respondents indicated the most difficulty with the Physical Environment domain ( $m = 56.91$ ). At the time of the study, 53% of respondents indicated experiencing some degree of occupationally-related stress. Seventeen (16.7%) indicated that they were experiencing significant levels of occupationally-related maladaptive stress, with the majority of these respondents identifying problems within the Physical Environment domain (82%). Thirty-seven respondents (36.3%) indicated mild levels of occupational stress (T scores between 60 and 69), with the majority once again indicating difficulty within the Physical Environment

Table 4  
Occupational Roles Questionnaire (ORQ) Results

SCALE	MEAN	SD	RANGE
Role Overload	41.33	7.28	27 - 61
Role Insufficiency	34.45	8.53	28 - 71
Role Ambiguity	47.03	9.56	32 - 76
Role Boundary	46.86	7.38	34 - 65
Responsibility	42.18	8.48	29 - 71
Physical Environment	56.91	10.44	41 - 93
OVERALL MEAN ORQ	46.29		

domain (61%). These results suggest that role-related working conditions, such as shift-work, may contribute to self-reported levels of police officer stress.

On the Personal Strain Questionnaire, the mean summary score for the four scales was 44.24, with the majority of respondents (83.4%) denying the presence of any psychologically-related stress difficulties. Three respondents (2.9%) did demonstrate significant problems within the psychological strain domain (T scores greater than 70) and fourteen (13.7%) indicated the presence of milder problems. Of the four scales, the Physical Strain scale accounted for the majority of stress-related responses (59%), indicating that respondents may either perceive the presence of frequent illnesses or feel that their self-care regime was insufficient. These results are summarized in Table 5.

Within the coping domain, 32.4% of respondents indicated some degree of difficulty. The mean summary score for the four scales comprising the Personal Resources Questionnaire was 51.00, with Self-Care (mean = 47.74) being the only category falling below a score of 50. On further analysis, responses on the Self-Care scale tended to be dichotomous, with respondents indicating either significant participation in stress-reducing activities or no participation at all. Seven respondents obtained a significant result (score of less than  $T=30$ ) on one of the four scales, with four (57%) of these responses occurring in the Rational/Cognitive domain. One participant indicated significant problems with coping across more than one domain. Twenty-six respondents (25.5%) indicated the presence of mild coping deficits, with the majority of these responses (38%) occurring in either the Rational/Cognitive or Self-Care domain. The results from the Personal Resources Questionnaire are summarized in Table 6.



Table 5  
Personal Strain Questionnaire (PSQ) Results

SCALE	MEAN	SD	RANGE
Vocational Strain	43.79	7.79	33 - 70
Psychological Strain	43.32	6.80	33 - 66
Interpersonal Strain	42.44	7.20	31 - 64
Physical Strain	47.41	8.57	37 - 74
OVERALL MEAN PSQ	44.24		

Table 6  
Personal Resources Questionnaire (PRQ) Results

SCALE	MEAN	SD	RANGE
Recreation	53.50	9.89	27 - 80
Self-Care	47.74	8.00	29 - 75
Social Support	52.74	8.99	21 - 69
Rational Cognitive Coping	50.01	9.41	24 - 72
OVERALL MEAN PRQ	51.00		

A summary of results from the Occupational Stress Inventory are presented in Table 7. From the Occupational Roles Questionnaire and the Personal Strain Questionnaire, 39.2% of the sample indicated the presence of mild stress and 17.7% indicated statistically significant levels of stress. From the Personal Resources Questionnaire, 25.5% of the sample indicated mild deficits in coping resources and 6.9% indicated significant coping skills deficits. Approximately one-fifth (17.7%) of the sample indicated the presence of both stress reactions and coping skills deficits. In total, approximately one-third of the sample (29.4%) indicated more than one problem area with regards to stress and/or coping. This accounts for approximately 75% of respondents who indicated a problem. In general, these results suggest that deficits in occupational stress, psychological strain, and/or coping resources are not usually limited to one problem area.

#### C. Comparison of Self-Reported PTSD Scores

The mean score on the Penn Inventory for Posttraumatic Stress was obtained in order to determine if the results from a police sample were reflective of those normally obtained for non-veteran samples. In general, scores above 35 are reflective of the presence of Posttraumatic Stress symptoms. The mean score on the Penn Inventory for a non-veteran sample was 15.4, with one group obtaining a mean score of 15.1 (SD = 10.0) and the second group scoring 15.6 (SD = 6.7) (Hammarberg, 1992). For the present sample, the mean score was determined to be 14.88 (SD = 6.21). This result is consistent with the reported scores for a non-veteran population. The frequency of scores greater than 35 was 0. Nine respondents (8.8% of the sample) scored between 25 and 29, and 20 (19.6% of the sample) scored between 20 and 24. These results are summarized in Table

Table 7  
Occupational Stress Inventory Summary

VARIABLE	FREQUENCY	PERCENT
<u>Occupational Roles Questionnaire (ORQ)</u>		
Within Normal Limits (T < 60)	48	47.1 %
Mild Levels (T < 70, T > 59)	37	36.3 %
Significant Levels (T > 70)	17	16.7 %
 <u>Psychological Strain Questionnaire (PSQ)</u>		
Within Normal Limits (T < 60)	85	83.3 %
Mild Levels (T < 70, T > 59)	14	13.7 %
Significant Levels (T > 70)	03	2.9 %
 <u>Coping Resources Questionnaire (PRO)</u>		
Within Normal Limits (T > 40)	69	67.6 %
Mild Deficits (T < 40, T > 30)	26	25.5 %
Significant Deficits (T < 31)	07	6.9 %

Table 8  
PENN Inventory for Posttraumatic Stress Results

SOURCE	SAMPLE	<u>n</u>	MEAN PENN SCORE	SD	RANGE
Present Sample	Police Officers	102	14.9	6.2	2 - 29
Hammarberg 1992 (A)	Non-Veteran	16	15.6	6.7	7 - 32
Hammarberg 1992 (B)	Non-Veteran	16	15.1	10.0	2 - 41

8.

#### D. Elevated MMPI-2 Scales

The data was examined in order to determine whether the present sample demonstrated the same elevations on the four MMPI-2 clinical scales identified in the literature as forming the typical “police personality”. The scales which form one of the identified police personalities are as follows: the K (Subtle Defensiveness) scale, Scale 3 (Hysteria), Scale 4 (Psychopathic Deviate), and Scale 9 (Hypomania). Specifically, this research was aimed at determining whether the sample used in the present research matched the samples commonly found in police research. The mean scores for the sample MMPI-2 clinical and validity scales are presented in Table 9. Generally, as the results indicate, the direction of the sample means is consistent with that found in the literature. The one notable exception is the marked elevation on the L (Lie) scale. In addition, for the female sample, Scale 5 (Masculinity-Femininity) was found to be elevated. These results are compared graphically in Figures 1 through 3.

#### Main Analysis

The first hypothesis examined the relationship between participants’ scores on the two measures of stress (Total Occupational Stress/ORQ and Total Psychological Strain/PSQ) and the measure of coping (Total Personal Resources/PRQ). Specifically, participants who reported deficits in coping skills were predicted to have higher stress scores. Simple bivariate correlations were used to analyze the data. The relationship between the total stress score and the measure of coping (Total PRQ) was found to be highly negatively correlated ( $r = -.51$ ,

Table 9  
Sample MMPI-2 Mean Score Results

MMPI-2 SCALE DESIGNATION	MALE MEANS	FEMALE MEANS	MALE AND FEMALE MEANS
K (Subtle Defensiveness)	62.17	61.36	61.73
L (Lie)	59.76	56.34	57.88
F (Infrequency)	43.20	41.86	42.46
1 (Hypochondriasis)	48.07	46.13	47.00
2 (Depression)	44.39	40.95	42.50
3 (Hysteria)	49.52	47.86	48.61
4 (Psychopathic Deviate)	51.00	49.71	50.29
5 (Masculinity-Femininity)	43.09	60.71	--
6 (Paranoia)	47.85	46.43	47.07
7 (Psychastenia)	47.57	45.29	46.31
8 (Schizophrenia)	47.41	46.05	46.67
9 (Hypomania)	51.54	52.07	51.83
0 (Social Introversion)	38.08	37.05	37.52

Figure 1  
Female MMPI-2 Means

Scale	Mean
K	61.36
L	56.34
F	41.86
Hyp	46.13
Dep	40.95
Hys	47.86
Pd	49.71
M-F	60.71
Pa	46.43
Pt	45.29
Sc	46.05
Ma	52.07
Si	37.05

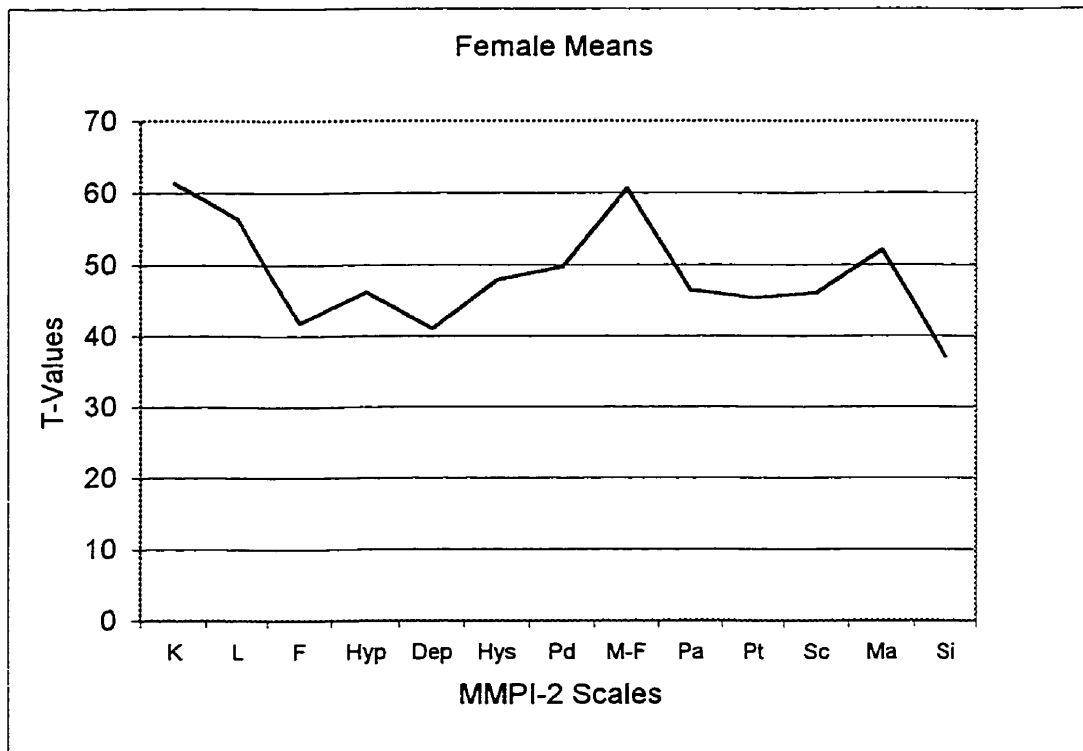




Figure 2  
Male MMPI-2 Means

Scale	Mean
K	62.17
L	59.76
F	43.2
Hyp	48.07
Dep	44.39
Hys	49.52
Pd	51
M-F	43.09
Pa	47.85
Pt	47.57
Sc	47.41
Ma	51.54
Si	38.08

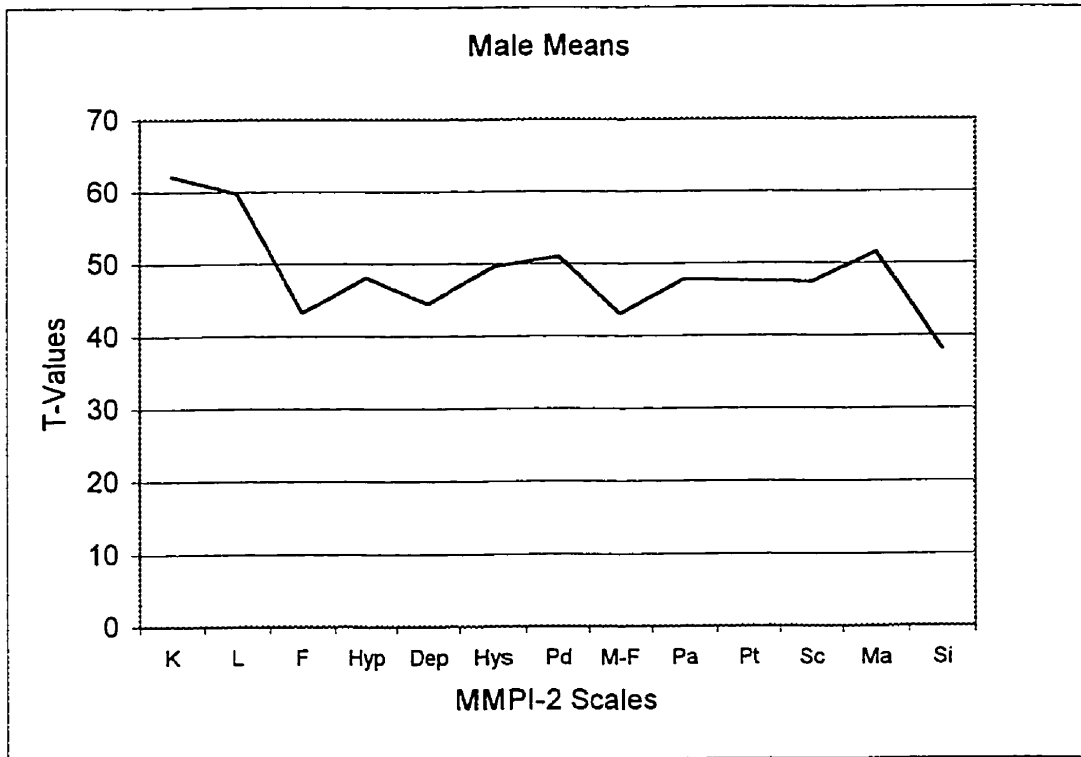
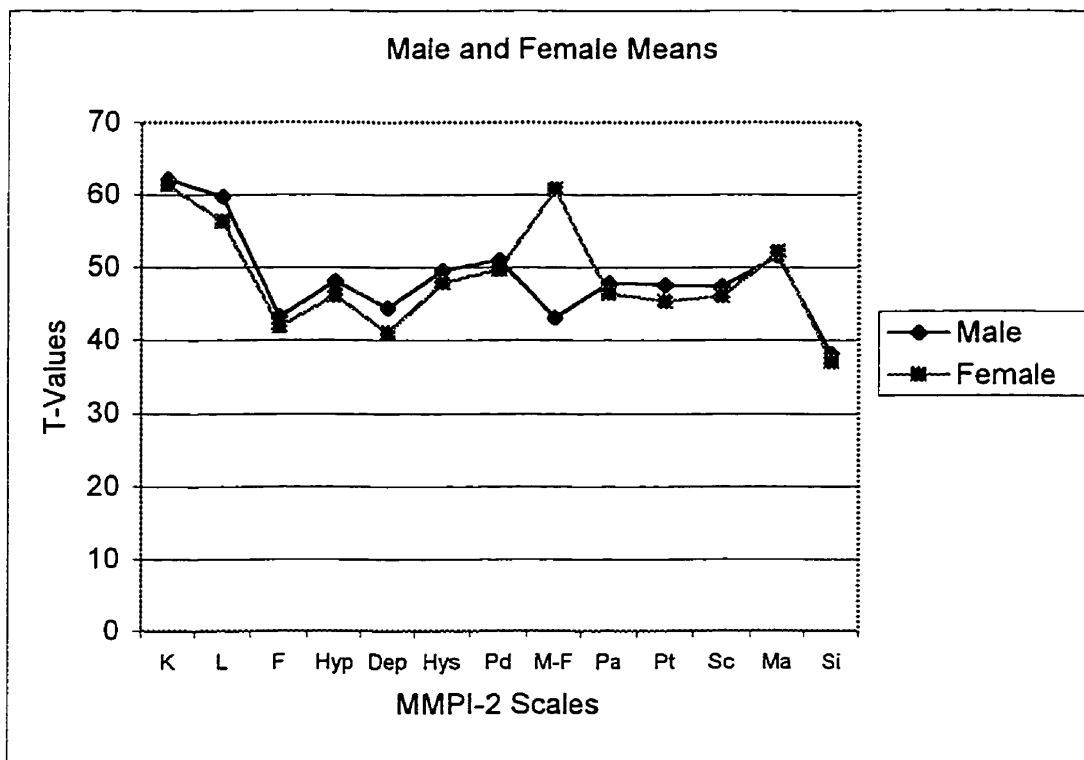


Figure 3  
MMPI-2 Means for Female and Male Police Officers

Scale	Male	Female
K	62.17	61.36
L	59.76	56.34
F	43.2	41.86
Hyp	48.07	46.13
Dep	44.39	40.95
Hys	49.52	47.86
Pd	51	49.71
M-F	43.09	60.71
Pa	47.85	46.43
Pt	47.57	45.29
Sc	47.41	46.05
Ma	51.54	52.07
Si	38.08	37.05



$p < .001$ ) as was the relationship between the total psychological strain score and the measure of coping ( $r = -.65, p < .001$ ). Individuals who perceived themselves as utilizing ineffective or less effective coping skills acknowledged experiencing higher levels of both occupational stress and psychological strain. As expected, there was a strong positive correlation (.6381,  $p < .001$ ) between the two stress domains (ORQ and PSQ). The results are presented in Table 10.

The second main hypothesis addressed any potential relationships between the measures of stress (Total Occupational Stress/ORQ and Total Psychological Strain/PSQ) and several pre-selected scales from both the MMPI-2 and the 16 PF. Specifically, this phase of the study attempted to determine if any significant relationships between pre-employment test scores on the two psychological measures could predict a participant's score on the measure of stress (criteria variable). The results are presented in Tables 11 and 12. In comparing the relationship between the pre-employment scores from the six pre-selected MMPI-2 scales with the two measures of stress (Total Occupational Stress and Total Psychological Strain), significant albeit weak relationships were found. For the Occupational Stress scale, a significant relationship was found between the K (Subtle Defensiveness) scale ( $r = -.30, p < .001$ ) and Scale 9 (Hypomania) ( $r = .40, p < .001$ ). The direction of the relationship between the K scale and the measure of stress was consistent with the initial hypothesis. With respect to the K scale, it appears that individuals who attempt to present themselves in a more favorable light are less likely to either report or perceive significant symptoms of stress. Individuals with higher scores on Scale 9 (Hypomania) may be experiencing or reporting a greater frequency of stress-related problems than their lower-scoring counterparts. A significant relationship was also found

Table 10  
Correlations Between the Stress and Coping Variables

	TOTAL PERSONAL COPING RESOURCES (PRQ)	TOTAL OCCUPATIONAL STRESS (ORQ)	TOTAL PSYCHOLOGICAL STRAIN (PSQ)
TOTAL PERSONAL COPING RESOURCES (PRQ)	--	-.51***	-.65***
TOTAL OCCUPATIONAL STRESS (ORQ)	-.51***	--	.64***
TOTAL PSYCHOLOGICAL STRAIN (PSQ)	-.65***	.64***	--

\*\*\*  $p < .001$

Table 11  
Correlations Between the MMPI-2 Scales and the Measures of Stress

SCALE DESIGNATION	SCALE NAME	TOTAL OCCUPATIONAL STRESS SCALE (ORQ)	TOTAL PSYCHOLOGICAL STRAIN SCALE (PSQ)
K	Subtle Defensiveness	-.30***	-.38***
3	Hysteria	.05	-.07
4	Psychopathic Deviate	.13	.08
9	Hypomania	.34***	.15
R	Repression	-.10	-.09
A	Anxiety	-.09	.08

\*\*\*  $p < .001$

Table 12  
Correlations Between the 16 PF Factors and the Measures of Stress

SCALE DESIGNATION	SCALE NAME	TOTAL OCCUPATIONAL STRESS SCALE (ORQ)	TOTAL PSYCHOLOGICAL STRAIN SCALE (PSQ)
C+	Ego Strength	-.06	-.22*
I-	Emotional Sensitivity	.07	.03
Q1-	Rebelliousness	.19+	.24*
Extra	Extraversion	-.24*	-.18

\*  $p < .05$

+ - Approaching Significance

between the K (Subtle Defensiveness) scale and the Psychological Strain scale ( $r = -.38, p < .001$ ).

With respect to the four 16 PF scales used in this research, weak relationships were found between the total measure of Psychological Strain and the Rebelliousness ( $r = .24, p < .05$ ) and Ego Strength factors ( $r = -.22, p < .05$ ). The direction of both of these relationships was consistent with the initial hypotheses. With respect to the significant finding on the Rebelliousness factor, individuals with a more conservative nature may be less likely than their more rebellious counterparts to report problems with stress. A weak relationship was also found between the Extraversion factor and the total measure of Occupational Stress ( $r = .23, p < .05$ ). The direction of this relationship was not consistent with the initial hypothesis. Additionally, although not significant, the relationship between the total measure of Occupational Stress and the Rebelliousness factor approached significance ( $r = .12, p = .07$ ).

Possible relationships between the Coping Resources scale (PRQ) and the pre-selected MMPI-2 and 16 PF scales were also examined. These results are summarized in Table 13. The only significant relationship was found between the Extraversion factor and the total coping score ( $r = .25, p < .05$ ). Although not significant, the relationship between the K (Subtle Defensiveness) scale and the total coping score approached the significant mark ( $r = .19, p = .07$ ).

A median split of the data was performed in order to determine any differences between lower and higher scoring individuals on the measure of Occupational Stress. For this variable, the median was found to be 170 with a mean of 182. Individuals who scored above the median indicated more stress related problems than did their lower scoring counterparts. Fifty police officers obtained scores above the median and fifty-two scored below the median.

Table 13

Correlations Between MMPI-2/16 PF Scales and the OSI Scales

SCALE DESIGNATION	SCALE NAME	TOTAL OCCUPATIONAL STRESS (ORQ)	TOTAL PSYCHOLOGICAL STRAIN (PSQ)	TOTAL COPING RESOURCES (PRQ)
K	Subtle Defensiveness	-.30***	-.38***	.19+
3	Hysteria	.05	-.08	.05
4	Psychopathic Deviate	.13	.08	-.05
9	Hypomania	.40***	.15	-.10
R	Repression	-.10	-.09	-.13
A	Anxiety	-.09	.01	-.02
C +	Ego Strength	-.06	-.22*	.10
I -	Emotional Sensitivity	.07	.03	-.11
Q1 -	Rebelliousness	.19+	.24*	-.11
Extra	Extraversion	-.24*	-.18	.25*

\*  $p < .05$ \*\*\*  $p < .001$



When the high and low stress groups were compared on their MMPI-2 scores, two significant findings were identified. Participants who were classified into the low stress group were found to have higher scores on the K scale (Subtle Defensiveness) than did their peers in the high stress group ( $t = 3.18, p < .01$ ). Participants who fell into the low stress group also demonstrated lower scores on scale 6 (Paranoia) ( $t = -2.06, p < .05$ ). Two trends were also identified in the data. Participants who were classified into the low stress group tended to have higher L (Lie) scale scores ( $t = 1.90, p = .062$ ) and lower overall Scale 9 (Hypomania) scores ( $t = 1.82, p = .068$ ). These results are presented in Table 14. No significant findings were noted when the high and low stress groups were examined on the 16 PF. However, a trend towards higher Rebelliousness scores in the high stress group was noted (Table 15).

When the high and low stress groups were compared on the Coping domain of the Occupational Stress Inventory, obvious significant findings were noted. Participants classified into the low stress group reported higher total coping scores than did their high stress group counterparts ( $t = 6.53, p < .001$ ). Low stress group participants reported higher scores across the coping domain, specifically on the Recreation ( $t = 5.78, p < .001$ ), Self-Care ( $t = 4.73, p < .001$ ), Social Support ( $t = 3.25, p < .01$ ), and Rational Cognitive Coping ( $t = 4.73, p < .001$ ) scales. There were no significant findings between the high-low stress groups and age, ethnicity, education, marital status, or LASA (Law and Security Administration) graduate status. These results are presented in Tables 14, 15 and 16.

#### Ad Hoc Analysis

Several relationships were found between variables which were not specifically targeted for analysis.

##### A. Rural Postings

Table 14

Difference Between the High and Low Stress Groups on the MMPI-2

MMPI-2 SCALE	SCALE NAME	LOW STRESS GROUP	HIGH STRESS GROUP	RESULT
K	Subtle Defensiveness	63.87	59.50	t = 3.18**
L	Lie	59.81	55.88	t = 1.90+
F	Infrequency	41.75	43.20	
1	Hypochondriasis	47.21	46.78	
2	Depression	42.40	42.60	
3	Hysteria	48.85	48.36	
4	Psychopathic Deviate	49.98	50.62	
5	Masculinity- Femininity	53.19	52.32	
6	Paranoia	45.60	48.60	t = -2.06*
7	Psychastenia	46.50	46.12	
8	Schizophrenia	46.27	47.08	
9	Hypomania	50.40	53.32	t = 1.82+
0	Social Introversion	37.06	38.00	
A	Anxiety	38.12	37.97	
R	Repression	49.91	48.50	

\*\* p &lt; .01

\* p &lt; .05

+ - approaching significance

Table 15  
Relationship Between the High-Low Stress Group and the 16 PF

16 PF SCALE	SCALE NAME	LOW STRESS GROUP	HIGH STRESS GROUP
C +	Ego Strength	15.29	14.00
I -	Emotional Sensitivity	10.00	12.10
Q1 -	Rebelliousness	7.60	10.60
Extra	Extraversion	75.73	74.62

Scores on Scale 9 (Hypomania) were found to be positively correlated with the rural posting variable, possibly suggesting that recruits who presented as more energetic confident, and outgoing may either be assigned to, or choose to serve in rural postings. This may indicate that higher scorers may have less difficulty adjusting to a variety of novel or challenging conditions. Alternatively, it may be that higher scorers tend to come from rural areas and choose to be posted back in their home community or other similar posting type.

#### B. Relationship Between the Total Stress Score and the MMPI-2 Validity Scales

Two interesting relationships were found between the total Occupational Stress score (Total ORQ) from the OSI and the L (Lie) and F (Infrequency) scales of the MMPI-2. There is a significant relationship between elevations on the F scale and the total stress score ( $r = .31, p < .01$ ). It appears that candidates who may have experienced difficulty answering the questions in a consistent fashion, or who were either resistant to the testing process or malingering, reported a greater frequency of stress symptoms on the job. In addition, the relationship between the L scale and the total stress score was found to approach the significance level ( $r = -.25, p = .062$ ). The results of the Ad Hoc analysis are presented in Table 17.

Table 16  
Relationship Between the High-Low Stress Groups on the Coping Scale (OSI)

COPING RESOURCES SCALE (OSI)	LOW STRESS GROUP	HIGH STRESS GROUP	RESULT
Total Coping	144.98	124.68	t = 6.53***
Recreation	58.33	48.48	t = 5.78***
Self - Care	51.08	44.06	t = 4.73***
Social Support	55.44	49.92	t = 3.25**
Rational/Cognitive Coping	53.83	46.04	t = 4.73***

\*\*\* p < .001

\*\* p < .01

Table 17  
Relationship Between the Total Stress Score and Various MMPI-2 Scales

MMPI-2 SCALE	SCALE NAME	TOTAL OCCUPATIONAL STRESS
L	Lie	-.25 +
F	Infrequency	.30 **
1	Hypochondriasis	-.07
2	Depression	.12
5	Masculinity-Femininity	-.08
6	Paranoia	.18
7	Psychastenia	.05
8	Schizophrenia	.19
0	Social Introversion	.08

\*\*  $p < .01$

+ - approaching significance

## CHAPTER IV

### DISCUSSION

The present research was designed to examine how well the use of established personality measures, specifically the Minnesota Multiphasic Personality Inventory - 2 and the 16 Personality Factors Inventory would reflect self-reported stress levels in a sample of entry-level police officers. This study also examined the relationship between stress and coping in new police recruits. The body of this discussion highlights six specific areas:

(1) the specificities of the sample and the impact of these characteristics on the present research, (2) the general implications of the reported incidence of stress, coping, and posttraumatic stress, (3) the relationship between stress and coping variables, (4) the predictive validity of pre-employment personality measures (Minnesota Multiphasic Personality Inventory, Revised and the 16 Personality Factors Questionnaire) on stress and coping levels, (5) the impact of gender, and (6), a discussion of other significant findings.

In conclusion, this section will discuss some of the limitations of this study and present recommendations for the direction of further research.

#### Characteristics of the Research Sample

The most notable observation regarding the demographic composition of the research sample relates to gender. Specifically, the present study is based on a sample where the majority of participants (55.9%) are female. A review of the pertinent background literature reveals that the vast majority of preceding research endeavors have relied on either gender-specific samples (male-only) or have utilized samples composed primarily of male participants. This has previously been viewed as satisfactory for several

reasons, most notably because policing has traditionally been regarded as a male-dominated occupation. However, given such factors as recent employment equity hiring initiatives, greater interest on the part of women to enter non-traditional roles, and an increased awareness of the advantages of a diversified work force, the composition of the typical police population is slowly changing. With this change comes the need to ensure that previous research findings which reflect a predominantly male-based policing sample are interpreted cautiously with respect to female officers. Further, it also necessitates that discussions regarding any similarities between the present research and past studies be interpreted cautiously to avoid drawing comparisons which may not be reflective of the sample being studied.

Given the lack of variance in the sample with respect to race, education, and marital status, no differences were able to be investigated within these groups. The finding that over 96% of the sample had attained a post-secondary education is not surprising given the highly competitive nature of the recruitment process. Potential applicants are aware that completion of a University or College degree enhances their competitive standing. Also not surprising is the range of ages for new recruits in the two sampled graduating classes. As with gender, recruitment of more non-traditional applicants combined with a variety of educational and work expectations results in applicants in their late 20's and early 30's emerging successfully through the recruitment process.

#### Stress and Coping in Police Officers

Self-reported levels of stress were measured using the Occupational Stress Inventory. Specifically, two separate indicators of current stress were employed: Total Occupational Stress and Total Psychological Strain. For this sample, the majority of



respondents (57%) indicated the presence of either significant (18%) or more moderate (39%) problems with stress. Despite this finding, approximately two-thirds of respondents described the presence of adequate coping resources. This may indicate that participants felt that they were able to effectively cope despite being aware of the stressful nature of their jobs. It may also indicate that despite acknowledging the presence of stress, respondents did not feel that this was significantly negatively impacting on their overall performance.

Within the stress domain, most of the problems were found in the Physical Environment category. This measures the extent to which an individual perceives that his or her environment exposes them to extreme physical conditions or environmental toxins. Necessities such as shift work, and frequent interactions with an often hostile and uncooperative public are obvious correlates to raising environmental stress levels in police officers. The elevation of the Physical Environment scale may also be reflective of the career stage of this sample. Participants all met the criteria for inclusion into the "Alarm" stage of policing as described by Neiderhoffer (1967). This stage is characterized by raising stress levels as new recruits undergo a form of reality shock. Although they have received sufficient training in the theories surrounding policing duties, they are now faced with the realities of their chosen profession. This includes not only dealing with novel and potentially dangerous situations, but also carrying out unpleasant tasks such as responding to fatal car accidents. As these rookie officers gain more practical experience, a drop in their scores on the Physical Environment scale may be seen. However, along with this increasing acceptance of the physical realities of their chosen profession may come raising stress levels in response to organizational stressors. As such, higher values on scales such

as Role Ambiguity and Responsibility may be seen. This is an important consideration from an organizational perspective as it provides a basic assumption on which to base proactive employee assistance programs. It also highlights the importance of acknowledging that stress is a transitory variable rather than viewing it as a static concept.

With respect to self-reported coping resources, almost one third of the sample (32.4%) indicated experiencing either mild (25.5%) or significant deficits (7%) on this measure. The majority of these officers (70.2 %) indicated problems within the self-care category which is indicative of difficulty initiating or adhering to regular activities which reduce or alleviate chronic feelings of stress. Of interest, responses in this category tended to be dichotomous, with respondents either indicating significant participation in stress-reducing activities or no participation at all. Low scores on the self-care category are somewhat surprising given the fact that policing candidates are strongly encouraged and expected to adopt active and healthy lifestyles. It may be that once hired, some rookie officers either lack sufficient opportunity to engage in regular stress-reducing activities or revert back to a more sedentary lifestyle. Although they appear to remain cognizant of the importance of self-care in reducing interpersonal and occupational stress, they are either unwilling or unable to participate in stress-reducing activities. From an organizational perspective, this has important implications for developing policies consistent with stress reduction. By either encouraging officers to engage in physical activities and hobbies, or continuing to exert external expectations to ensure that officers continue to engage in some form of stress-reducing activity, the organization may proactively decrease raising absenteeism rates or early termination due to stress-related factors.

### Posttraumatic Stress Symptoms in Police Officers

No significant scores on the Penn Inventory for Posttraumatic Stress were obtained. There are several possible reasons for this finding. First, given the relatively short duration of employment for the subject group, it is unlikely that any of the rookie officers would have encountered a markedly traumatic event at this stage of their careers. Additionally, only a relatively small percentage of officers will ever be involved in a significant event such as a shooting. Newly hired officers have also had minimal opportunity to have developed cumulative occupationally-related stressors.

Despite this, a small percentage of respondents (6) obtained scores close to the interpretative cut-off for PTSD. This subsample also demonstrated high scores on the total measure of occupational stress along with deficits on the measure of coping resources as measured by the Occupational Stress Inventory. With respect to coping deficits, this group obtained lower scores in the Rational-Cognitive category, indicating that they are less likely to use cognitively-based skills when faced with occupational stressors. As a result, these officers may either be catastrophising moderately stressful daily events or be readily accumulating work-related stressors to create a perception of high stress. Training and intervention based on a cognitive-behavioral model would be beneficial for this subgroup.

### The Relationship Between Stress and Coping

The first hypothesis examined whether a negative relationship existed between participants' scores on a measure of total occupational stress and a measure of coping resources. The data supported this hypothesis, with the results indicating an indirect relationship between stress and coping in the present sample of police officers. This result

is not surprising if stress is conceptualized as an imbalance between the demands being placed on an individual and their ability to cope with these demands. If the demands exceed the real or perceived coping abilities of the individual, symptoms of stress appear. However, if the individual is successful in initiating a general “call to arms” of the body’s resources to fight the stressor, the total impact of the event will be minimal in comparison to the consequences of succumbing to the stressor.

Within the police literature, a significant amount of research has been devoted to identifying, measuring, and diffusing police-related stressors. Consideration has been given to factors such as dangerousness as well as to more common problems related to the nature of the organization. However, minimal attention has been directed towards assessing and modifying personal styles of coping. Frequently, the response to an individual’s identification of stress involves an attempt to remove the stressor. This may take the form of frequent absenteeism, requests for posting changes, early retirement, or resignation. Given the significant relationship between the stress and coping variables, it may prove beneficial to address coping deficits before they interfere with an officer’s job satisfaction or performance. One approach would be to assess police officer candidates for effective coping styles during the assessment period. Additionally, adoption of a cognitive model of prevention or intervention may prove useful.

#### Relationship Between Predictor and Outcome Variables

The second hypothesis involved a series of ten predictions between the measures of stress (Total Occupational Stress and Total Psychological Strain) from the Occupational Stress Inventory and several scales from the Minnesota Multiphasic Personality Inventory-2 and the 16 Personality Factors Questionnaire. Of the ten

predictions, five were found to be significant. These were the K (Subtle Defensiveness) scale and Scale 9 (Hypomania) from the MMPI-2, and the Rebelliousness factor, the Ego Strength factor, and the Extraversion factor from the 16 PF. Scale 3 (Hysteria) from the MMPI-2 was also found to approach the significance level in the expected direction. The significant findings are discussed below.

A negative relationship was predicted between the K (Subtle Defensiveness) scale and the total measure of Occupational Stress. The data confirmed this hypothesis, demonstrating a moderate negative correlation between these two variables. This finding is noteworthy as elevations on the K scale are sometimes not interpreted as being indicative of potential problems. This is especially true for results obtained during the course of pre-employment testing. The assumption that high K scores are only indicative of impression management strategies and bear no relevance to understanding the psychological health of the examinee limits useful information which may be gained from this scale.

In general, high scores on the K scale may be associated with individuals who lack insight into their problems and deny the existence of personal weakness. These characteristics may result in police officers minimizing or denying the presence of occupational or personal stressors until they become overwhelming. As the problem intensifies, stress levels can be predicted to rise steadily until the individual either resolves the problem on his or her own or seeks assistance. At this point, increased use of sick time and below standard job performance may result in employee resignation or termination of employment. As a result of the moderate correlation between stress and the K scale, further research on this scale is warranted.

As elevated scores on the K scale have been associated with difficulty recognizing problems, candidates with elevated scores may benefit from further screening on a measure of problem solving ability. However, one of the difficulties with this recommendation is the high proportion of candidates who present with elevated K scores. For the present sample, the mean K score was 61.73 which is close to the interpretative cut-off of 65. The scores ranged from 37 to 78. Elevated values such as these not only present a problem for interpretation of the K scale, but also impact on the validity of the other K-corrected clinical scales. As pointed out by critics of the MMPI's applicability to pre-employment testing of police officers, many profiles which are being interpreted are actually invalid due to elevations on the validity scales. This is an area which would merit further research.

The Rebelliousness factor from the 16 PF was found to have a significant, positive relationship with both the Total Occupational Stress and Total Psychological Strain scales. These findings are consistent with the direction of the initial hypothesis which predicted that officers with higher scores on the Rebelliousness factor would be more likely to experience occupational stress than their lower-scoring, more conservative counterparts. The direction of this hypothesis was based on two distinct but related ideas: that individuals with higher Rebelliousness scores were more amenable towards change, and that the quasi-military structure of policing was not encouraging towards change. As such, higher scorers may become frustrated by some of the more antiquated policies and procedures, and may come into conflict with others in their quest to change the system. However, given the recent trends towards change within policing organizations (for example, the hiring of a more diversified work force), the relationship between the

Rebelliousness factor and measures of stress may not be significant in future years.

The final significant hypothesis predicted a negative relationship between Scale 9 (Hypomania) from the MMPI-2 and the Total Occupational Stress score. In fact, the results of this study indicate the presence of a positive relationship, thereby suggesting that elevations on Scale 9 are associated with elevations on the total measure of occupational stress. This is initially unexpected as scorers with moderate elevations on this scale tend to be viewed as action-oriented, outgoing, self-confident, and optimistic. They are apt to express their feelings assertively and should therefore be more likely to deal with stressors immediately rather than allowing them to accumulate. These characteristics would hopefully help moderate their experience of stress. However, it may be that their outgoing nature creates a stressful personal environment. Participants with elevations on Scale 9 may become overly invested in a variety of activities and may therefore indicate the presence of higher occupational and psychological stress.

The significance of obtaining relationships between potentially problematic factors such as stress and variables such as Hypomania provide an argument for the use of 'selecting in' models of candidate selection rather than reliance on 'screening out' strategies. Often, applicants are screened out during the psychological assessment phase as a result of elevated or atypical scores on the various pre-employment screening measures. However, the use of a screening in process would ensure that factors which are actually correlated with positive outcomes are considered in the assessment process instead of relying on factors which may be unrelated to job performance or satisfaction.

#### Impact of Gender on the Criterion and Outcome Variables

An examination of gender resulted in several significant findings. The most

noteworthy results appeared in the comparison of stress levels between men and women. According to the data, men experienced greater levels of occupational stress than did their female counterparts. Of interest, within the Occupational Stress domain, male officers reported significantly higher scores on the Physical Environment scale. They also had significantly higher scores on the Physical Strain scale of the Psychological Strain domain.

There are several possible explanations for the higher stress scores in male officers. Male police officers may feel greater pressure to excel in their jobs based on adherence or exposure to distorted societal messages regarding the importance of men achieving success. This may result in the setting of unrealistic goals which in turn may cause occupational stress levels to rise. Conversely, with respect to external stressors, female officers may be afforded more of an opportunity to ease into their new duties, resulting in lower initial occupational stress scores. If this hypothesis were proven to be accurate, it would indicate the presence of a different set of expectations for newly-hired male and female officers. Another possible explanation to account for the difference in occupational stress scores involves individual job preparedness. Women deciding to enter policing may have devoted more time and energy to both researching and preparing for this challenging position. As a result, they may have greater confidence in not only their decision to become police officers, but also in their ability to perform the job satisfactorily. As such, they may be more likely to perceive potentially stressful situations as manageable and react accordingly.

Several significant findings were also noted between male and female officers on the various MMPI-2 scales. Men demonstrated significantly higher scores on both Scale 1 (Hypochondriasis) and Scale 2 (Depression), with their results on Scale 3 (Hysteria), Scale



7 (Psychastenia), and the L (Lie) scale approaching significance. Moderate elevations on these scales are suggestive of individuals who experience a dysphoric and often pessimistic outlook on life. Physical complaints, chronic fatigue, and poor self-insight are common (Graham, 1990). Male officers also demonstrated a trend towards higher scores on the K (Subtle Defensiveness) scale. Elevations on this scale may characterize individuals who minimize or deny the presence of personal problems and lack self-insight (Graham, 1990).

These results may indicate that male officers are more likely to internalize and/or displace stress reactions with depressive symptomology or manifest physical problems. A possible explanation for these findings is that male officers may be responding to distorted or misguided beliefs or attitudes regarding the appropriateness of acknowledging or openly discussing the presence of problems.

Female officers demonstrated significantly higher scores on Scale 5 (Masculinity-Femininity) than did their male counterparts. In a policing environment, it is reasonable to assume that the majority of male scores will fall below the mean, with high scorers consisting primarily of women. For men, low scores on Scale 5 are indicative of individuals who are presenting themselves as having stereotypically masculine interests. Their adventurous and practical nature tends to draw them into policing. For women, elevated scores on this scale are often associated with an outgoing, confident nature and a preference for more stereotypic masculine interests. An interest in an active, dynamic career such as policing is well-suited to their personal preferences.

However, the significance demonstrated on Scale 5 may also be reflective of problematic response sets. Both male and female applicants may be responding to test questions in a manner which they believe will increase their chances of success in the

recruiting process. Alternatively, both men and women who have interests and skills compatible with the policing profession may be selecting themselves for this occupation. It is feasible to assume that since policing has often been viewed as a traditionally masculine occupation, individuals with more masculine interests would consider a career as a police officers. As such, it would not be surprising to have a dichotomous response set by gender.

### Discussion of Other Relevant Findings

#### A. Characteristics of the High Stress Group

An investigation of the differences between the High and Low stress groups yielded several significant findings. High scorers were identified through use of a median split. This group acknowledged experiencing a greater frequency of stress-related problems than their lower scoring counterparts. As expected, high scorers had significantly more difficulty with coping resources across all categories. This included lower scores on the Recreation, Self-Care, Social Support, and Rational Cognitive Coping scales. These results are consistent with the conclusion that deficits in coping resources are more significant predictors of stress reactions than is the nature or intensity of the presenting stressor.

Other significant findings between the low and high groups were found on both the K (Subtle Defensiveness) scale and on Scale 6 (Paranoia) of the MMPI-2. Lower stress scores were associated with higher scores on the K scale. Candidates with higher K scores may lack sufficient insight into the presence of problems, thereby denying any significant problems with stress. Alternatively, the desire to consistently present oneself in a positive light may in itself be a stress-reducing strategy. Stress scores were also found

to be positively correlated with Scale 6 (Paranoia). Officers who are less anxious and suspicious in response to the multitude of stressful situations which they either encounter or have the potential to encounter may not feel as threatened by their environment. Although a certain degree of suspiciousness is necessary, excessive amounts have the potential to interfere with job performance and cause elevations in both occupational and personal stress levels.

Although a significant amount of attention has been directed towards understanding and diffusing police stressors involving critical incidents such as shootings and violent confrontations, less attention has been focussed on addressing the daily hassles which many officers report as being their major source of stress. These daily hassles include stressors such as exorbitant paperwork requirements and the necessity of working alternating shifts. One of the problems in undertaking research on the effects of these daily hassles appears to be the lack of a generally agreed upon job description for police officers. Although references to involvement in generally high-risk situations such as apprehending dangerous criminals and upholding law and order are commonly associated with the policing role, the reality is that police officers are not involved in these critical incidents on a regular basis. Instead, more recent perspectives on the police role indicate that officers are more likely to be routinely involved in more service-oriented assignments such as assisting the public. Further research aimed at clarifying the day to day function of police personnel would prove useful from an organizational perspective as officers would most likely be more comfortable carrying out their daily assignments knowing that these routine duties were in fact part of their job description. A clear job analysis would also aid in the design of more relevant assessment measures in the recruitment phase.

## B. The Police Personality - Elevations on Select MMPI-2 Scales

One of the most interesting outcomes of this study involved the replication of previous research results involving MMPI-2 profiles of police officers. Several studies have identified the presence of a “police personality” which equates moderate elevations on Scale 3 (Hysteria), Scale 4 (Psychopathic Deviate), Scale 9 (Hypomania), and the K (Subtle Defensiveness) scale, and low scores on Scale 0 (Social Introversion) with successful job performance. Despite the unique characteristics of the present sample, the high point means of the above scales were consistent with the findings from previous research. The most notable exceptions to the previous research findings were the elevations on both Scale 5 (Masculinity-Femininity) and on the L (Lie) scale.

### Considerations of the Study

One of the primary considerations with the present sample is the relative homogeneity of the participants with respect to ethnicity and education. The most significant impact of this finding is that the results are applicable to only one ethnic group and police officers with post-secondary education.

Another consideration with the present sample which has potentially significant impact on the results is the fact that the participants were already technically pre-selected from the larger applicant pool prior to being selected for inclusion in this study. If we consider all the individuals who applied for policing positions to be the population, a random sample would have considered scores from both successful and unsuccessful candidates. However, the present sample consisted solely of candidates who had successfully passed through not only the recruitment process but the training phase of their

careers as well. This limitation is important to note for several reasons. Primarily, as applicants with unsuitable scores (higher or lower than the accepted mean) were already weeded out of the potential research pool, the remaining group consisted of individuals with scores at or around the normal level. This general homogeneity of test scores increased the difficulty of obtaining significant results.

From a methodological perspective, one improvement would be to administer the MMPI-2 and 16 PF inventories to potential applicants as part of the data collection process rather than relying on scores from the recruitment process. This may have resulted in profiles which were more reflective of the personality characteristics of the applicants as they may have experienced fewer concerns with impression management. It is fairly routine to encounter elevated K (Subtle Defensiveness) scale scores when interpreting test results within an employment setting. This trend may have impacted on the various relationships either found or predicted to be found between the pre-employment predictor variables and the outcome measures. There were a number of reasons why the MMPI-2 and the 16 PF were not administered as an initial phase of the study. Primarily, the amount of time necessary to complete both of these inventories was a major deterrent as was the cost involved in purchasing the tests and having them scored. In addition, it would have been difficult to access all the potential participants as the majority had relocated to their various detachments prior to the start of this research.

The final area considered in this section is the problem associated with the use of self-report measures of construct variables such as stress and personality. Not only are these results limited by factors such as impression management strategies, they also assume that the individual possesses a fair amount of insight into the specific areas being

targeted. Unfortunately, this is not always the case. For example, an individual may subjectively deny the presence of stress but be manifesting symptoms through the development of physical complaints or through engagement in cognitive, emotional, or behavioral defense mechanisms. As a result, their perception of stress-related symptoms may not be reflective of the true intensity of the problem.

### Study Overview

This study examined self-reported levels of stress and coping in a sample of 102 newly-hired police officers. Several significant results were found and were discussed in consideration of the recruitment, training, and management of police officers. Three key issues were identified for consideration: the changing composition of the police population, the idea of police stress as a transitory variable, and the relevance of implementing specific stress-reducing programs for this population. Concluding remarks are presented below.

One of the more significant findings from the present research centered on the demographic composition of the present sample with respect to gender. Specifically, the majority of respondents (55.9%) were female officers. Recruitment data suggests that this is reflective of an increase in the number of women choosing to enter the policing field rather than simply being attributable to response bias as the original target sample consisted of approximately 51% women. This finding is significant as many of the previous research endeavors with policing populations have relied on samples which were composed of either all-male or mostly-male officers. As such, given the changing demographic composition of many policing forces, many of these earlier results are not generalizable to today's policing population. This suggests that many of these earlier

studies have to be interpreted cautiously. It also suggests the need for further research with more representative police populations.

A second major consideration looked at the idea of police stress as a transitory variable. This study selected officers with less than two years of active policing experience in order to limit the confounding effect of experience-related variables. As such, the results from this study are generalizable to newly-hired officers. Based on previous research on the various career stages of police officers (Niederhoffer, 1967; Violanti, 1983/1993) it appears important to consider that officers at different levels of their careers will benefit from different stress-reducing interventions. The need to develop stress management programs which are specific to the different needs of this population may prove beneficial from both an employee and administrative viewpoint.

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**Appendix A**

**MINNESOTA MULTIPHASIC PERSONALITY INVENTORY**  
**CLINICAL AND VALIDITY SCALES**

<u>Scale Designation</u>	<u>Scale Name</u>	<u>Scale Type</u>
1	Hypochondriasis	Clinical
2	Depression	Clinical
3	Hysteria	Clinical
4	Psychopathic Deviate	Clinical
5	Masculinity-Femininity	Clinical
6	Paranoia	Clinical
7	Psychasthenia	Clinical
8	Schizophrenia	Clinical
9	Hypomania	Clinical
0	Social Introversion	Clinical
?	Cannot Say	Validity
L	Lie	Validity
F	Infrequency	Validity
K	Defensiveness	Validity

## Appendix B

### SCALES OF THE 16 PF

<b>FACTOR</b>	<b>LOW SCORE (-)</b>	<b>SCALE</b>	<b>HIGH SCORE (+)</b>
WARMTH	RESERVED, DETACHED	A	WARM, EASYGOING
INTELLIGENCE	LOW INTELLIGENCE	B	HIGH INTELLIGENCE
EGO STRENGTH	EMOTIONAL INSTABILITY	C	EMOTIONAL STABILITY
DOMINANCE	SUBMISSIVE	E	DOMINANT
IMPULSIVITY	SERIOUS	F	IMPULSIVE
GROUP CONFORMITY	LOW SUPEREGO STRENGTH	G	SUPEREGO STRENGTH
BOLDNESS	SHY	H	BOLD
EMOTIONAL SENSITIVITY	TOUGH-MINDEDNESS	I	EMOT. SENSITIVITY
SUSPICIOUSNESS	TRUSTING	L	SUSPICIOUS
IMAGINATION	PRACTICAL	M	IMAGINATIVE
SHREWDNESS	NAIVE	N	SHREWD
GUILT PRONENESS	UNTROUBLED ADEQUACY	O	GUILT PRONENESS

---

#### Q SCALES

REBELLIOUSNESS	CONSERVATIVE, TRADITIONAL	Q1	RADICAL, LIBERAL
SELF-SUFFICIENCY	GROUP DEPENDENT	Q2	SELF-SUFFICIENT
ANXIETY-CONTROL	LACK OF CONTROL	Q3	GOOD CONTROL
FREE-FLOATING ANXIETY	RELAXED, UNFRUSTRATED	Q4	TENSE, FRUSTRATED

---

#### SECOND-ORDER FACTORS

EXTRAVERSION  
ANXIETY  
TOUGH POISE  
INDEPENDENCE  
SOCIOPATHY



Appendix C

**COVER LETTER SENT TO POTENTIAL PARTICIPANTS**

Name:-----

Study I.D. Number:-----

**RE: REQUEST FOR VOLUNTARY PARTICIPATION  
PSYCHOLOGICAL RESEARCH PROJECT**

**BACKGROUND INFORMATION:**

My name is Jacqueline Cimbura and I am presently a Psychometrist (Psychologist's Office) with the \*\*\*. As some of you may know, my supervisor, \*\*\* and myself complete the pre-employment psychological evaluations which you may recall doing during the recruitment process. At this point in time I am interested in undertaking some research which focuses on studying stress in policing. I have decided to limit participants in this study to two academy graduating classes - Class \*\*\* and Class \*\*\*. As you successfully completed your program of training, I am writing to determine if you will participate in the present study. Your participation would be greatly appreciated. You will find enclosed copies of the measures that need to be completed (Hammarberg PENN Inventory, Occupational Stress Inventory, and a Research Questionnaire), relevant releases of information that will allow me access to your pre-employment psychological tests, and a letter of introduction from \*\*\* regarding your participation in this research. The completion of the enclosed information should only take between 30 to 50 minutes of your time and can be returned in the envelope provided.

The goal of this research is to determine what, if any, pre-existing variables predispose an officer to experience stress on the job. Although this research is soliciting responses from serving \*\*\* officers, it's major goal is to determine a set of criteria to be used in the pre-employment psychological testing of applicants to policing positions. As a result of this focus, the results will be generalizable to new recruits rather than serving officers. In this way, the results, although relevant to \*\*\*, will have no direct impact on your present status or that of your co-workers.

The responses you provide to the enclosed research material are completely confidential and no record of these responses or your participation will appear in your file. You have been included in the participant group only as a result of your successful graduation from the academy rather than any other factor. Assuring the confidentiality of your results is important to emphasize in any research effort as the success of this research

depends on the accurateness of your responses. Hopefully you will feel more comfortable answering the required questions when there is an assurance of confidentiality. In addition, you may have noticed that your name is not required on any of the testing material and instead a numbering system is used. This acts to further ensure your confidentiality.

As I mentioned earlier, I am the principal investigator in this study, and am a doctoral candidate at the Ontario Institute for Studies in Education (OISE). The research supervisor is Dr. Lana Stermac, also of OISE, who will provide guidance throughout this process. The results of this research will be presented to an academic thesis committee as a requirement for completion in an academic program of study.

In requesting your participation in this research endeavor, there are certain facts that I wish to stress as being important. Firstly, your participation is completely voluntary and will not in any way effect your employment standing. Secondly, as mentioned above, all the results are completely confidential and no record of your participation will appear in your personnel file. Lastly, you are free to withdraw your participation at any time.

I am aware of the time restrictions that you are under as you begin your new career with the \*\*\* and hope that you will be able to find some time to complete the enclosed inventories. If you have any questions please do not hesitate to contact either one of us listed below. Thanks again for your help.

Jacqueline Cimbura, M.Ed.  
Principal Investigator

Ontario Institute for Studies in Education  
University of Toronto  
(416) 789-1563

Lana Stermac, Ph.D.  
Thesis Supervisor

Ontario Institute for Studies in Education  
University of Toronto  
(416) 923-6641 x 2346

**Appendix D**

**RELEASE OF INFORMATION**

I, \_\_\_\_\_, \_\_\_\_\_, give my permission  
(Name) (Badge Number)

for Jacqueline Cimbura, M.Ed. to access my personnel file and pre-employment psychological tests. I understand that this information will be used for research purposes only. I understand that my participation is completely voluntary and that I can withdraw from the study at any time. In addition, I understand that the information that is collected will be treated as strictly confidential and will not in any way affect my current employment. I understand that I can contact the principal investigator or the research supervisor at any time if I have any questions or concerns. My signature below acknowledges that I have read the above and have agreed to take part in this research.

-----  
Name Signature Date

## Appendix E

### PENN INVENTORY FOR POST-TRAUMATIC STRESS

I.D. Number: \_\_\_\_\_

Date: \_\_\_\_\_

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling during your career with the \*\*\*. Circle the number beside the statement you picked. Be sure to read all the statements in each group before making your choice.

1. 0 I don't feel much different from most other people my age  
1 I feel somewhat different from most other people my age  
2 I feel so different from most other people my age that I choose pretty carefully who I'll be with and when  
3 I feel so totally alien to most other people my age that I stay away from all of them at all costs
2. 0 I care as much about the consequences of what I'm doing as most other people  
1 I care less about the consequences of what I'm doing than most other people  
2 I care much less about the consequences of what I'm doing than most other people  
3 Often I think, "Let the consequences be damned!" because I don't care about them at all
3. 0 When I want to do something for enjoyment I can find someone to join me if I want to  
1 I'm able to do something for enjoyment even when I can't find someone to join me  
2 I lose interest in doing things for enjoyment when there's no one to join me  
3 I have no interest in doing anything for enjoyment when there's no one to join me
4. 0 I rarely feel jumpy or uptight  
1 I sometimes feel jumpy or uptight  
2 I often feel jumpy or uptight  
3 I feel jumpy or uptight all the time
5. 0 I know someone nearby who really understands me  
1 I'm not sure there's anyone nearby who really understands me  
2 I'm worried because no one nearby really seems to understand me  
3 I'm extremely disturbed that no one nearby understands me at all
6. 0 I'm not afraid to show my anger because it's no worse or better than anyone else's  
1 I'm sometimes afraid to show my anger because it goes up quicker than other people's  
2 I'm often afraid to show my anger because it might turn to violence  
3 I'm so afraid of becoming violent that I never allow myself to show any anger at all

7. 0 I don't have any past traumas to feel overly anxious about  
 1 When something reminds me of my past traumas I feel anxious but can tolerate it  
 2 When something reminds me of my past traumas I feel very anxious but can use special ways to tolerate it  
 3 When something reminds me of my past traumas I feel so anxious I can hardly stand it and have no ways to tolerate it
8. 0 I have not re-experienced a flashback to a trauma event 'as if I were there again'  
 1 I have re-experienced a flashback to a trauma event 'as if I were there again' for a few minutes or less  
 2 My re-experiencing of a flashback to a trauma event sometimes lasts the better part of an hour  
 3 My re-experiencing of a flashback to a trauma event often lasts for an hour or more
9. 0 I am less easily distracted than ever  
 1 I am as easily distracted as ever  
 2 I am more easily distracted than ever  
 3 I feel distracted all the time
10. 0 My spiritual life provides more meaning than it used to  
 1 My spiritual life provides about as much meaning as it used to  
 2 My spiritual life provides less meaning than it used to  
 3 I don't care about my spiritual life
11. 0 I can concentrate better than ever  
 1 I can concentrate about as well as ever  
 2 I can't concentrate as well as I used to  
 3 I can't concentrate at all
12. 0 I've told a friend or family member about the important parts of my most traumatic experiences  
 1 I've had to be careful in choosing the parts of my traumatic experiences to tell friends or family members  
 2 Some parts of my traumatic experiences are so hard to understand that I've said almost nothing about them to anyone  
 3 No one could possibly understand the traumatic experiences I've had to live with
13. 0 I generally don't have nightmares  
 1 My nightmares are less troubling than they were  
 2 My nightmares are just as troubling as they were  
 3 My nightmares are more troubling than they were
14. 0 I don't feel confused about my life  
 1 I feel less confused about my life than I used to  
 2 I feel just as confused about my life as I used to  
 3 I feel more confused about my life than I used to
15. 0 I know myself better than I used to  
 1 I know myself about as well as I used to  
 2 I don't know myself as well as I used to  
 3 I feel like I don't know who I am at all
16. 0 I know more ways to control or reduce my anger than most people  
 1 I know about as many ways to control or reduce my anger as most people  
 2 I know fewer ways to control or reduce my anger than most people  
 3 I know of no ways to control or reduce my anger
17. 0 I have not experienced a major trauma in my life  
 1 I have experienced one or more traumas of limited intensity  
 2 I have experienced very intense and upsetting traumas  
 3 The traumas I have experienced were so intense that memories of them intrude on my mind without warning
18. 0 I've been able to shape things toward attaining many of my goals  
 1 I've been able to shape things toward attaining some of my goals  
 2 My goals aren't clear  
 3 I don't know how to shape things toward my goals

19. 0 I am able to focus my mind and concentrate on the task at hand regardless of unwanted thoughts
- 1 When unwanted thoughts intrude on my mind I'm able to recognize them briefly and then refocus my mind on the task at hand
  - 2 I'm having a hard time coping with unwanted thoughts and don't know how to refocus my mind on the task at hand
  - 3 I'll never be able to cope with unwanted thoughts
20. 0 I am achieving most of the things I want
- 1 I am achieving many of the things I want
  - 2 I am achieving some of the things I want
  - 3 I am achieving few of the things I want
21. 0 I sleep as well as usual
- 1 I don't sleep as well as usual
  - 2 I wake up more frequently or earlier than usual and have difficulty getting back to sleep
  - 3 I often have nightmares or wake up several hours earlier than usual and cannot get back to sleep
22. 0 I don't have trouble remembering things I should know
- 1 I have less trouble than I used to remembering things I should know
  - 2 I have about the same trouble as I used to remembering things I should know
  - 3 I have more trouble than I used to remembering things I should know
23. 0 My goals are clearer than they were
- 1 My goals are as clear as they were
  - 2 My goals are not as clear as they were
  - 3 I don't know what my goals are
24. 0 I'm usually able to let bad memories fade from my mind
- 1 Sometimes a bad memory comes back to me, but I can modify it, replace it, or set it aside
  - 2 When bad memories intrude on my mind I can't seem to get them out
  - 3 I worry that I'm going crazy because bad memories keep intruding on my mind
25. 0 Usually I feel understood by others
- 1 Sometimes I don't feel understood by others
  - 2 Most of the time I don't feel understood by others
  - 3 No one understands me at all
26. 0 I have not lost anything or anyone dear to me
- 1 I have grieved for those I've lost and can now go on
  - 2 I haven't finished grieving for those I've lost
  - 3 The pain of my loss is so great that I can't grieve and don't know how to get started

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**Appendix F**

**RESEARCH QUESTIONNAIRE**

Please complete the following information and return this form with the other material that you have received. This form does not require your name or badge number. Thanks for your participation.

1. Study Identification Number: \_\_\_\_\_

2. Age: \_\_\_\_\_

3. Sex: \_\_\_\_\_

4. Rank: \_\_\_\_\_

5. Posting Type:

Please circle which of the following best describes your posting:

**Rural Posting**

**Urban Posting**

**Duration Posting**

**Isolated Posting**

6. Please indicate if any of the following designations apply to you:

**A. Member of a racial minority**      **Yes**      **No**

**B. Francophone**      **Yes**      **No**

**C. Person with a Disability**      **Yes**      **No**

## **Appendix G**

### **OCCUPATIONAL STRESS INVENTORY**

#### **Occupational Roles Questionnaire (ORQ)**

- 1. Role Overload Scale**
- 2. Role Insufficiency Scale**
- 3. Role Ambiguity Scale**
- 4. Role Boundary Scale**
- 5. Responsibility Scale**
- 6. Physical Environment Scale**

#### **Personal Strain Questionnaire (PSQ)**

- 1. Vocational Strain Scale**
- 2. Psychological Strain Scale**
- 3. Interpersonal Strain Scale**
- 4. Physical Strain Scale**

#### **Personal Resources Questionnaire (PRQ)**

- 1. Recreation Scale**
- 2. Self-Care Scale**
- 3. Social Support Scale**
- 4. Rational/Cognitive Coping  
Scale**